



LOCAL GOVERNMENT ENERGY AUDIT PROGRAM: ENERGY AUDIT REPORT

PREPARED FOR:

**BURLINGTON TOWNSHIP
BOARD OF EDUCATION**

**FOUNTAIN WOODS
ELEMENTARY SCHOOL**

**601 Fountain Avenue
Burlington, NJ 08016**

**ATTN: MRS. MARY ANN BELL
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I. EXECUTIVE SUMMARY

This report presents the findings of the energy audit conducted for:

Burlington Township Board of Education
Fountain Woods Elementary
601 Fountain Avenue
Burlington, NJ 08016

Municipal Contact Person: Mary Ann Bell

This audit is performed in connection with the New Jersey Clean Energy - Local Government Energy Audit Program. The energy audit is conducted to promote the mission of the office of Clean Energy, which is to use innovation and technology to solve energy and environmental problems in a way that improves the State's economy. This can be achieved through the wiser and more efficient use of energy.

The annual energy costs at this facility are as follows:

Electricity	\$ 228,474
Natural Gas	\$ 21,986
<hr/>	
Total	\$ 250,460

The potential annual energy cost savings for each energy conservation measure (ECM) and renewable energy measure (REM) are shown below in Table 1. Be aware that the ECM's and REM's are not additive because of the interrelation of some of the measures. This audit is consistent with an ASHRAE level 2 audit. The cost and savings for each measure is $\pm 20\%$. The evaluations are based on engineering estimations and industry standard calculation methods. More detailed analyses would require engineering simulation models, hard equipment specifications, and contractor bid pricing.

Table 1
Financial Summary Table

ENERGY CONSERVATION MEASURES (ECM's)					
ECM NO.	DESCRIPTION	NET INSTALLATION COST^A	ANNUAL SAVINGS^B	SIMPLE PAYBACK (Yrs)	SIMPLE LIFETIME ROI
ECM #1	Lighting Upgrade - Gymnasium and Interior	\$3,328	\$2,521	1.3	1036.4%
ECM #2	Lighting Occupancy and Daylight Sensors	\$12,835	\$4,455	2.9	420.6%
ECM #3	CRT Monitor Replacement	\$2,100	\$360	5.8	156.9%
ECM #4	NEMA Premium Efficiency Motors	\$30,080	\$2,068	14.5	3.1%
ECM #5	VFDs on Cooling Tower Fans	\$23,500	\$1,684	14.0	7.5%
ECM #6	Kitchen Hood Controls	\$22,125	\$1,400	15.8	-5.1%
ECM #7	Solar Domestic Hot Water Heating System	\$175,000	\$10,121	17.3	-13.2%
ECM #8	Replace Water Cooled Chiller	\$97,000	\$2,065	47.0	-68.1%
RENEWABLE ENERGY MEASURES (REM's)					
ECM NO.	DESCRIPTION	NET INSTALLATION COST	ANNUAL SAVINGS	SIMPLE PAYBACK (Yrs)	SIMPLE LIFETIME ROI
REM #1	263 kW Solar PV System	\$2,366,010	\$163,660	14.5	3.8%
Notes:					
A. Cost takes into consideration applicable NJ Smart Start TM incentives.					
B. Savings takes into consideration applicable maintenance savings.					

The estimated demand and energy savings for each ECM and REM is shown below in Table 2. The descriptions in this table correspond to the ECM's and REM's listed in Table 1.

Table 2
Estimated Energy Savings Summary Table

ENERGY CONSERVATION MEASURES (ECM's)				
ECM NO.	DESCRIPTION	ANNUAL UTILITY REDUCTION		
		ELECTRIC DEMAND (KW)	ELECTRIC CONSUMPTION (KWH)	NATURAL GAS (THERMS)
ECM #1	Lighting Upgrade - Gymnasium and Interior	5.3	16,697	0
ECM #2	Lighting Occupancy and Daylight Sensors	0	29,500	0
ECM #3	CRT Monitor Replacement	0	2,381	0
ECM #4	NEMA Premium Efficiency Motors	3.2	11,617	0
ECM #5	VFDs on Cooling Tower Fans	0	11,153	0
ECM #6	Kitchen Hood Controls	0	7,246	201
ECM #7	Solar Domestic Hot Water Heating System	0	0	8,228
ECM #8	Replace Water Cooled Chiller	11.3	13,582	0
RENEWABLE ENERGY MEASURES (REM's)				
ECM NO.	DESCRIPTION	ANNUAL UTILITY REDUCTION		
		ELECTRIC DEMAND (KW)	ELECTRIC CONSUMPTION (KWH)	NATURAL GAS (THERMS)
REM #1	263 kW Solar PV System	210.3	326,666	0

Concord Engineering Group (CEG) recommends proceeding with the implementation of all ECM's that provide a calculated simple payback at or under ten (10) years. The following Energy Conservation Measures are recommended for the facility:

- **ECM #1** Lighting Upgrade - Gymnasium and Interior Spaces
- **ECM #2** Lighting Occupancy and Daylight Sensors
- **ECM #3** CRT Monitor Replacement

ECM #1 Lighting Upgrade – Gymnasium and Interior Spaces

The gymnasium utilizes older style, probe start metal halide fixtures. These fixtures have direct replacements that save considerable energy. The lighting retrofit includes new T-5 high output fluorescent fixtures to replace the metal halide fixtures. Advantages include extended life, instant lamp start and superior light quality, making this ECM financially and aesthetically beneficial. The fluorescent fixtures selected will provide adequate light levels required for this space, while saving energy. In addition, there are several locations in the school where the lighting provided for these areas are in excess of normal lighting levels. This ECM also includes de-lamping of the fixtures in the over lit areas. With a combined simple payback of 1.3 years, this ECM is highly recommended for this facility.

ECM #2 Lighting Occupancy & Daylight Sensors

Lighting controls provide a simple and effective solution to the problem of lights being unnecessarily left on. Occupancy sensors alone provide fast payback since there is no retrofit needed for the existing lighting. Daylight Sensors were included in this ECM to show the relative effect of daylight harvesting in addition to occupancy sensors. The combination of both options still pays back in 2.9 years and therefore is recommended to be installed.

ECM #3 CRT Monitor Replacements

Some of the computers in the building utilize CRT computer monitors. This type of monitors are outdated and have several disadvantages such as; significantly increased higher energy consumption, large amount of desk space usage, poor picture quality, distortions and flickering image, secular glare problems, and high weight, and electromagnetic emissions. Many of the drawbacks are difficult to quantify except for the energy use. CRT monitors use considerably more energy than an alternative flat panel LCD monitor. Replacement of the existing CRT monitors with LCD monitors saves considerable energy as well as provides other ergonomic benefits as well. This ECM has a simple payback of 5.8 years and it is recommended for the building.

Operation and Maintenance Considerations

In addition to the ECMs, there are maintenance and operational measures that can provide significant energy savings and provide immediate benefit. The ECMs listed above represent investments that can be made to the facility which are justified by the savings seen overtime.

However, the maintenance items and small operational improvements below are typically achievable with on site staff or maintenance contractors and in turn have the potential to provide substantial operational savings compared to the costs associated. The following are recommendations which should be considered a priority in achieving an energy efficient building:

1. Chemically clean the condenser and evaporator coils periodically to optimize efficiency. Poorly maintained heat transfer surfaces can reduce efficiency 5-10%.
2. Maintain all weather stripping on entrance doors.
3. Clean all light fixtures to maximize light output.
4. Provide more frequent air filter changes to decrease overall system power usage and maintain better IAQ.

Renewable Energy Measures

Renewable Energy Measures (REMs) were also reviewed for implementation at the Fountain Woods Elementary School. CEG utilized a parking lot canopy mounted solar array to house a substantial PV system. The recommended 263 kW PV system will produce approximately 326,666 kWh of electricity annually and will reduce the schools electrical consumption from the grid by approximately 21%. The system's calculated simple payback of 14.5 years is past the standard 10 year simple payback threshold; however, with alternative funding this payback could be lessened. CEG recommends the Owner review all funding options before deciding to not implement this renewable energy measure.

Retro Commissioning

In addition to the above recommendations, based on the review of the facility's energy bills and discussions with the School District, the energy audit team recommends Retro-Commissioning of this facility to meet the following objectives:

- Bring existing HVAC equipment to its proper operational state including air and water distribution systems
- Reduce energy use and energy costs
- Improve indoor air quality
- Verify the installation and performance of identified system upgrades
- Address overall building energy use and demand and identify areas of highest energy use and demand
- Identify the location of the most comfort problems or trouble spots in the building
- Review current O&M practices

Through the implementation of a Retro-Commissioning Plan, the School District will be able to continue with their vision of reducing energy usage and operating efficient facilities.

Other Recommendations

To provide assistance to small public entities in the effort to implement valuable ECMs, the NJ Clean Energy program in combination with the BPU has initiated the “Direct Install Program”. This program provides extremely large incentives to facilities such as the Fountain Woods Elementary School building, to jump start energy projects. The direct install program offers incentives up to 60% of the installation costs through the services of pre-approved contractors. The program is directed towards one for one replacement projects that save energy and provide valuable upgrades for the facility for only 40% of the installation cost. Moreover, the program currently has a 200 kW maximum demand limit for applicability. This demand limit is capable of being waived if the School District is able to receive a portion of their respective Township Local Government’s American Recovery and Reinvestment Act (ARRA) funding towards energy efficiency improvements. Therefore, for facilities over the 200 kW maximum demand limit, such as Fountain Woods Elementary School, the School District will need to coordinate Direct Install efforts with the Township’s Local Government.

Conclusion

Overall, the Fountain Woods Elementary School appears to be operating at less than average efficiency level compared to other schools in the region. With the implementation of the above recommended measures the Burlington BOE will realize further energy savings at the Fountain Woods Elementary School.

II. INTRODUCTION

The comprehensive energy audit covers the 131,000 square foot Fountain Woods Elementary School, which includes the following spaces: classrooms, cafeteria, gymnasium, faculty offices, administration offices, kitchen and media center.

Electrical and natural gas utility information is collected and analyzed for one full year's energy use of the building. The utility information allows for analysis of the building's operational characteristics; calculate energy benchmarks for comparison to industry averages, estimated savings potential, and baseline usage/cost to monitor the effectiveness of implemented measures. A computer spreadsheet is used to calculate benchmarks and to graph utility information (see the utility profiles below).

The Energy Use Index (EUI) is established for the building. Energy Use Index (EUI) is expressed in British Thermal Units/square foot/year (BTU/ft²/yr), which is used to compare energy consumption to similar building types or to track consumption from year to year in the same building. The EUI is calculated by converting the annual consumption of all energy sources to BTU's and dividing by the area (gross square footage) of the building. Blueprints (where available) are utilized to verify the gross area of the facility. The EUI is a good indicator of the relative potential for energy savings. A low EUI indicates less potential for energy savings, while a high EUI indicates poor building performance therefore a high potential for energy savings.

Existing building architectural and engineering drawings (where available) are utilized for additional background information. The building envelope, lighting systems, HVAC equipment, and controls information gathered from building drawings allow for a more accurate and detailed review of the building. The information is compared to the energy usage profiles developed from utility data. Through the review of the architectural and engineering drawings a building profile can be defined that documents building age, type, usage, major energy consuming equipment or systems, etc.

The preliminary audit information is gathered in preparation for the site survey. The site survey provides critical information in deciphering where energy is spent and opportunities exist within a facility. The entire site is surveyed to inventory the following to gain an understanding of how each facility operates:

- Building envelope (roof, windows, etc.)
- Heating, ventilation, and air conditioning equipment (HVAC)
- Lighting systems and controls
- Facility-specific equipment

The building site visit is performed to survey all major building components and systems. The site visit includes detailed inspection of energy consuming components. Summary of building occupancy schedules, operating and maintenance practices, and energy management programs provided by the building manager are collected along with the system and components to determine a more accurate impact on energy consumption.

III. METHOD OF ANALYSIS

Post site visit work includes evaluation of the information gathered, researching possible conservation opportunities, organizing the audit into a comprehensive report, and making recommendations on HVAC, lighting and building envelope improvements. Data collected is processed using energy engineering calculations to anticipate energy usage for each of the proposed energy conservation measures (ECMs). The actual building's energy usage is entered directly from the utility bills provided by the owner. The anticipated energy usage is compared to the historical data to determine energy savings for the proposed ECMs.

It is pertinent to note, that the savings noted in this report are not additive. The savings for each recommendation is calculated as standalone energy conservation measures. Implementation of more than one ECM may in some cases affect the savings of each ECM. The savings may in some cases be relatively higher if an individual ECM is implemented in lieu of multiple recommended ECMs. For example implementing reduced operating schedules for inefficient lighting will result in a greater relative savings. Implementing reduced operating schedules for newly installed efficient lighting will result in a lower relative savings, because there is less energy to be saved. If multiple ECM's are recommended to be implemented, the combined savings is calculated and identified appropriately.

ECMs are determined by identifying the building's unique properties and deciphering the most beneficial energy saving measures available that meet the specific needs of the facility. The building construction type, function, operational schedule, existing conditions, and foreseen future plans are critical in the evaluation and final recommendations. Energy savings are calculated base on industry standard methods and engineering estimations. Energy consumption is calculated based on manufacturer's cataloged information when new equipment is proposed.

Cost savings are calculated based on the actual historical energy costs for the facility. Installation costs include labor and equipment costs to estimate the full up-front investment required to implement a change. Costs are derived from Means Cost Data, industry publications, and local contractors and equipment suppliers. The NJ Smart Start Building® program incentives savings (where applicable) are included for the appropriate ECM's and subtracted from the installed cost. Maintenance savings are calculated where applicable and added to the energy savings for each ECM. The life-time for each ECM is estimated based on the typical life of the equipment being replaced or altered. The costs and savings are applied and a simple payback, simple lifetime savings, and simple return on investment are calculated. See below for calculation methods:

ECM Calculation Equations:

$$\text{Simple Payback} = \left(\frac{\text{Net Cost}}{\text{Yearly Savings}} \right)$$

$$\text{Simple Lifetime Savings} = (\text{Yearly Savings} \times \text{ECM Lifetime})$$

$$\text{Simple Lifetime ROI} = \frac{(\text{Simple Lifetime Savings} - \text{Net Cost})}{\text{Net Cost}}$$

$$\text{Lifetime Maintenance Savings} = (\text{Yearly Maintenance Savings} \times \text{ECM Lifetime})$$

$$\text{Internal Rate of Return} = \sum_{n=0}^N \left(\frac{\text{Cash Flow of Period}}{(1 + \text{IRR})^n} \right)$$

$$\text{Net Present Value} = \sum_{n=0}^N \left(\frac{\text{Cash Flow of Period}}{(1 + \text{DR})^n} \right)$$

Net Present Value calculations based on Interest Rate of 3%.

IV. HISTORIC ENERGY CONSUMPTION/COST

A. Energy Usage / Tariffs

The energy usage for the facility has been tabulated and plotted in graph form as depicted within this section. Each energy source has been identified and monthly consumption and cost noted per the information provided by the Owner.

The electric usage profile represents the actual electrical usage for the facility. The facilities receive electric distribution service through Public Service Electric & Gas (PSE&G) on rate schedule Basic General Service - LPLS rate structure. The school has contracted South Jersey Energy, a Third Party Supplier (TPS), to provide electric commodity supply (generation) service. The electric utility measures consumption in kilowatt-hours (KWH) and maximum demand in kilowatts (KW). One KWH usage is equivalent to 1000 watts running for one hour. One KW of electric demand is equivalent to 1000 watts running at any given time. The basic usage charges are shown as generation service and delivery charges along with several non-utility generation charges. Rates used in this report reflect the historical data received for the facility.

The gas usage profile shows the actual natural gas energy usage for the facility. South Jersey Gas (SJG) provides natural gas to the facility under the Large Volume Gas (LVG) rate structure. The gas utility measures consumption in cubic feet x 100 (CCF), and converts the quantity into Therms of energy. One Therm is equivalent to 100,000 BTUs of energy.

The overall cost for utilities is calculated by dividing the total cost by the total usage. Based on the utility history provided, the average cost for utilities at this facility is as follows:

<u>Description</u>	<u>Average</u>
Electricity	15.1¢ / kWh
Natural Gas	\$1.22 / Therm

Table 3
Electricity Billing Data

ELECTRIC USAGE SUMMARY			
Utility Provider: PSE&G			
Rate: LPLS			
Meter No: 778016822			
Account No. 42 006 031 01			
Third Party Utility South Jersey Energy			
TPS Meter / Acct No:			
MONTH OF USE	CONSUMPTION	DEMAND	TOTAL BILL
Mar-09	149,299	415.8	\$19,935
Apr-09	114,226	432.2	\$16,413
May-09	144,562	538.3	\$24,824
Jun-09	121,330	551.5	\$21,989
Jul-09	81,745	211.5	\$13,192
Aug-09	96,733	415.2	\$17,412
Sep-09	147,970	536.2	\$21,208
Oct-09	119,083	430.6	\$17,121
Nov-09	119,264	357.8	\$16,909
Dec-09	141,665	430.3	\$20,093
Jan-10	135,383	426.2	\$19,493
Feb-10	139,027	400.7	\$19,884
Totals	1,510,287	551.5 Max	\$228,474
AVERAGE DEMAND 428.9 KW average AVERAGE RATE \$0.151 \$/kWh			

Figure 1
Electricity Usage Profile

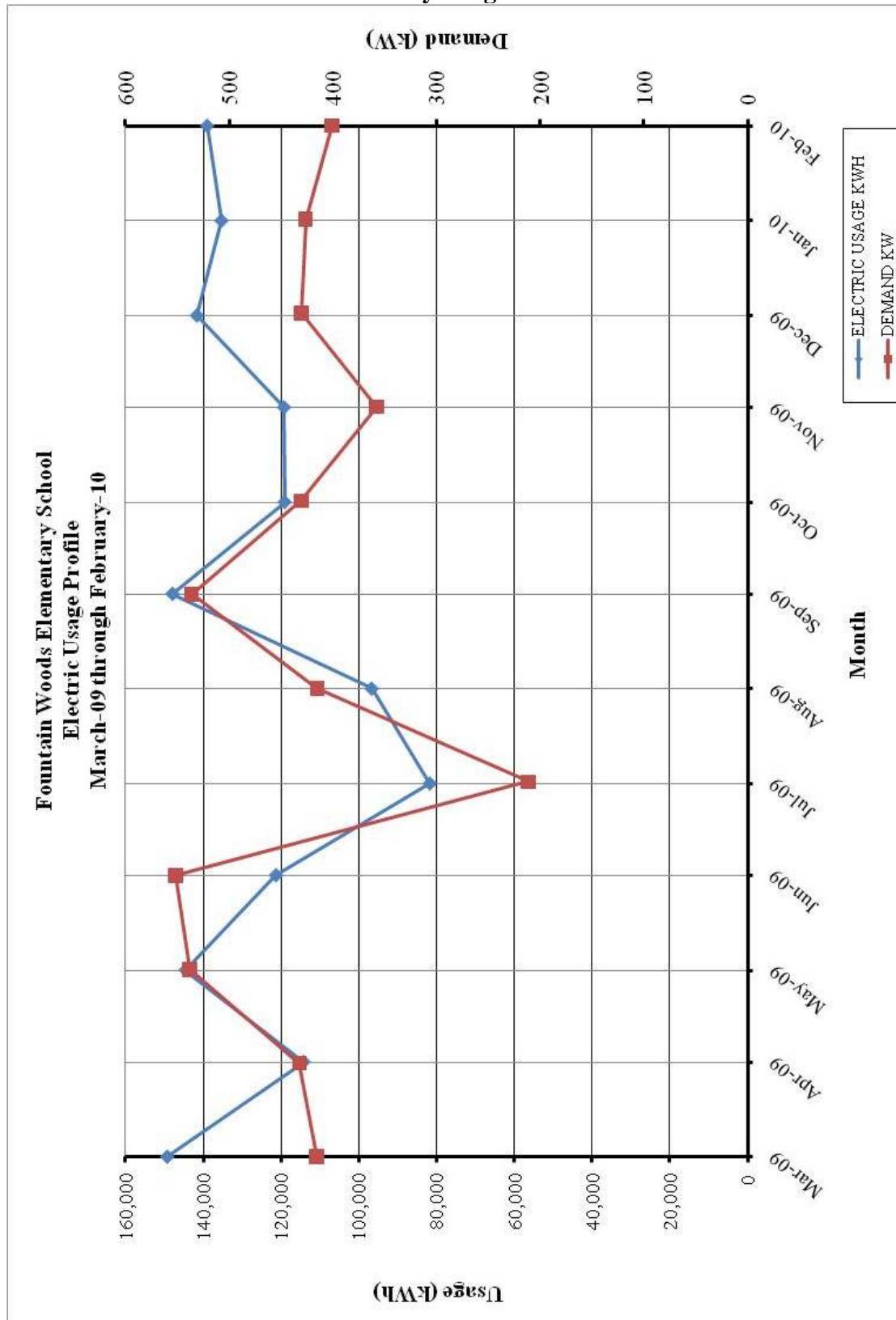
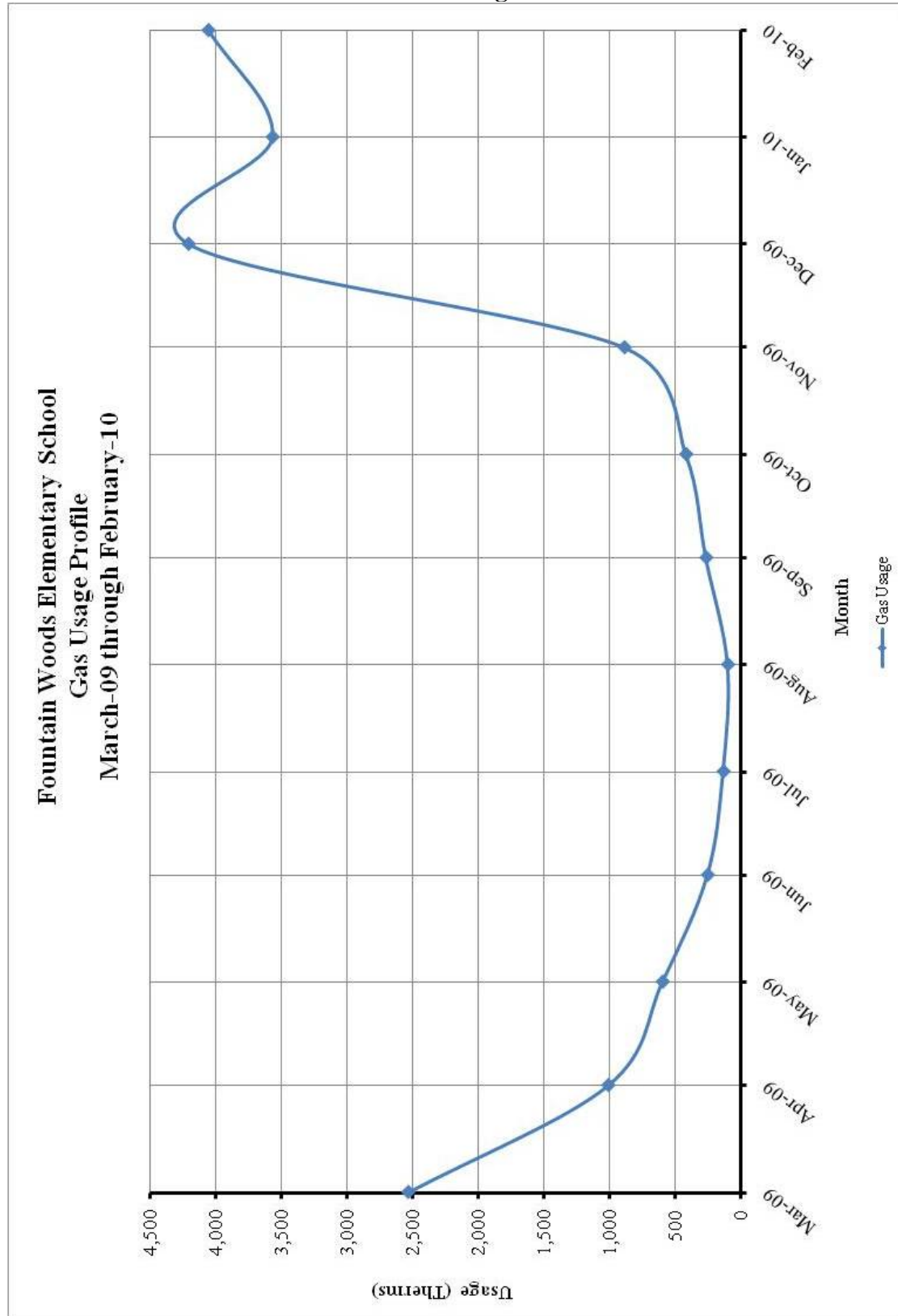


Table 4
Natural Gas Billing Data

NATURAL GAS USAGE SUMMARY		
Utility Provider: PSE&G Rate: LVG Meter No: 2808489 Account No. 42 006 031 01 Third Party Utility Provider: TPS Meter No:		
MONTH OF USE	CONSUMPTION (THERMS)	TOTAL BILL
Mar-09	2,532.42	\$3,265.46
Apr-09	1,009.91	\$1,371.30
May-09	595.75	\$848.87
Jun-09	253.06	\$397.42
Jul-09	133.13	\$212.47
Aug-09	99.02	-\$706.81
Sep-09	264.83	\$317.83
Oct-09	417.69	\$964.34
Nov-09	886.87	\$1,445.16
Dec-09	4,204.14	\$4,797.15
Jan-10	3,565.28	\$4,342.65
Feb-10	4,052.47	\$4,729.66
TOTALS	18,014.56	\$21,985.50
AVERAGE RATE:	\$1.22	\$/THERM

Figure 2
Natural Gas Usage Profile



B. Energy Use Index (EUI)

Energy Use Index (EUI) is a measure of a building's annual energy utilization per square foot of building. This calculation is completed by converting all utility usage consumed by a building for one year, to British Thermal Units (BTU) and dividing this number by the building square footage. EUI is a good measure of a building's energy use and is utilized regularly for comparison of energy performance for similar building types. The Oak Ridge National Laboratory (ORNL) Buildings Technology Center under a contract with the U.S. Department of Energy maintains a Benchmarking Building Energy Performance Program. The ORNL website determines how a building's energy use compares with similar facilities throughout the U.S. and in a specific region or state.

Source use differs from site usage when comparing a building's energy consumption with the national average. Site energy use is the energy consumed by the building at the building site only. Source energy use includes the site energy use as well as all of the losses to create and distribute the energy to the building. Source energy represents the total amount of raw fuel that is required to operate the building. It incorporates all transmission, delivery, and production losses, which allows for a complete assessment of energy efficiency in a building. The type of utility purchased has a substantial impact on the source energy use of a building. The EPA has determined that source energy is the most comparable unit for evaluation purposes and overall global impact. Both the site and source EUI ratings for the building are provided to understand and compare the differences in energy use.

The site and source EUI for this facility is calculated as follows:

$$\text{Building Site EUI} = \frac{(\text{Electric Usage in kBtu} + \text{Gas Usage in kBtu})}{\text{Building Square Footage}}$$

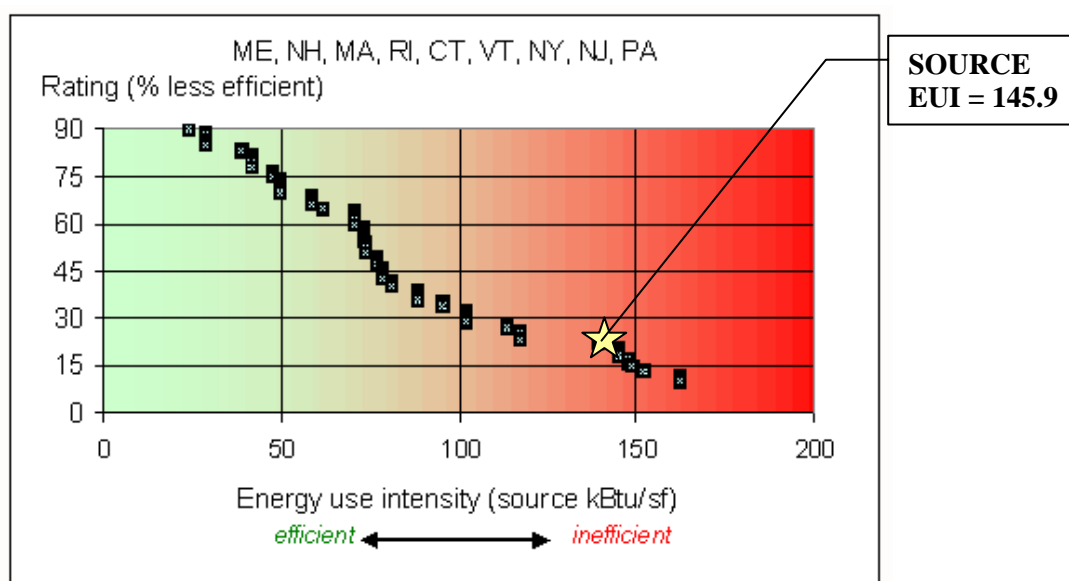
$$\text{Building Source EUI} = \frac{(\text{Electric Usage in kBtu} \times \text{SS Ratio} + \text{Gas Usage in kBtu} \times \text{SS Ratio})}{\text{Building Square Footage}}$$

Table 5
Facility Energy Use Index (EUI) Calculation

ENERGY USE INTENSITY CALCULATION						
ENERGY TYPE	BUILDING USE			SITE ENERGY	SITE-SOURCE	SOURCE ENERGY
	kWh	Therms	Gallons	kBtu	RATIO	kBtu
ELECTRIC	1,510,287			5,156,120	3.340	17,221,440
NATURAL GAS		18,015		1,801,456	1.047	1,886,125
FUEL OIL			0	0	1.010	0
PROPANE			0	0	1.010	0
TOTAL				6,957,576		19,107,565
*Site - Source Ratio data is provided by the Energy Star Performance Rating Methodology for Incorporating Source Energy Use document issued Dec 2007.						
BUILDING AREA	131,000 SQUARE FEET					
BUILDING SITE EUI	53.1 kBtu/SF/YR					
BUILDING SOURCE EUI	145.9 kBtu/SF/YR					

Figure 3 below depicts a national EUI grading for the source use of Elementary Schools.

Figure 3
Source Energy Use Intensity Distributions: Elementary Schools



C. EPA Energy Benchmarking System

The United States Environmental Protection Agency (EPA) in an effort to promote energy management has created a system for benchmarking energy use amongst various end users. The benchmarking tool utilized for this analysis is entitled Portfolio Manager. The Portfolio Manager tool allows tracking and assessment of energy consumption via the template forms located on the ENERGY STAR website (www.energystar.gov). The importance of benchmarking for local government municipalities is becoming more important as utility costs continue to increase and emphasis is being placed on carbon reduction, greenhouse gas emissions and other environmental impacts.

Based on information gathered from the ENERGY STAR website, Government agencies spend more than \$10 billion a year on energy to provide public services and meet constituent needs. Furthermore, energy use in commercial buildings and industrial facilities is responsible for more than 50 percent of U.S. carbon dioxide emissions. It is vital that local government municipalities assess facility energy usage, benchmark energy usage utilizing Portfolio Manager, set priorities and goals to lessen energy usage and move forward with priorities and goals.

In accordance with the Local Government Energy Audit Program, CEG has created an ENERGY STAR account for the municipality to access and monitoring the facility's yearly energy usage as it compares to facilities of similar type. The login page for the account can be accessed at the following web address; the username and password are also listed below:

<https://www.energystar.gov/istar/pmpam/index.cfm?fuseaction=login.login>

User Name: burlingtonboe
Password: lgeaceg2010

Security Question: What city were you born in?
Security Answer: "burlington"

The utility bills and other information gathered during the energy audit process are entered into the Portfolio Manager. The following is a summary of the results for the facility:

Table 6
ENERGY STAR Performance Rating

ENERGY STAR PERFORMANCE RATING		
FACILITY DESCRIPTION	ENERGY PERFORMANCE RATING	NATIONAL AVERAGE
Burlington Township Fountain Elementary	35	50

Refer to **Statement of Energy Performance Appendix** for the detailed energy summary.

V. FACILITY DESCRIPTION

The 131,000 SF Fountain Woods Elementary School is a two story school comprised of classrooms, cafeteria, gymnasium, faculty offices, administration offices, kitchen and media center. The building was built in 1999 with an addition to the original construction in 2001.

The total number of occupancy at the Fountain Woods Elementary School is approximately 1,092 including students, teachers and the custodial staff. The facility is open between the hours of 5:30 AM and 11:30 PM for school hours, afterschool programs and custodial services. The school hours of operation are typical for a school; between 7:00AM and 3:30 PM. The facility is closed on weekends. The gymnasium and auditorium are used after hours for sports and other events. The school is used minimally in the summer. However, the owner keeps buildings at design temperatures to control temperature and humidity for staff and programs that may be occurring at the facility.

Exterior walls are 4 inch face brick and concrete block construction throughout the building with insulation typical of the time period. The amount of insulation within the wall is unknown. The windows throughout the facility are in good condition and appear to be maintained. Typical windows throughout the facility are double pane, 1/4" tinted glass with aluminum frames. The majority of the roof is built-up and pitched with medium colored brown shingles. A small portion of the roof is constructed of a built-up roof with light grey color tar coating, where all rooftop HVAC equipment is located. The amount of insulation below the roofing is unknown.

HVAC Systems

The cooling for the school is provided by a water cooled, direct expansion, shell and tube chiller sized at 100 nominal tons. The chiller is in fair condition and is cooled by two open circuit cooling towers made by BAC. Both cooling towers are more than eight years old and are equipped with two (2) centrifugal fans each. The cooling towers include sump heaters.

The McQuay heat pumps, installed in 1998, are in good condition and provide conditioning to the various zones in the school. All of the heat pumps are located in the ceiling while there is one heat pump residing on the roof. Since the attic of the school acts as a plenum, the return air from the space below mixes with the outside air from the ventilation units and enters the return opening to each heat pump. In the cooling season, heat pumps will reject heat to the loop and the cooling tower will help satisfy a set-point. In the heating season, heat pumps will heat the space but cool the loop. The use of three (3) modulating Aerco KC Series, 1,000 MBH, gas-fired hot water boilers are used to warm the loop back up to a certain temperature set-point. The boilers were manufactured in 1998 and seem to be in fair condition.

Air handling units 1 & 2 provide heating and cooling to the cafeteria and multi-purpose room. These air handling units are supplied via the chilled water and boiler water loop. Outside air is introduced into the system through outside air louvers on the adjacent walls of the mechanical room.

Exhaust System

Air is exhausted from the toilet rooms through the roof exhausters. There are heat recovery ventilation units for ventilation of classrooms, hallways, and all other spaces within the school. The ventilation units spill the outside air into the attic space which is used as a plenum.

HVAC System Controls

The Fountain Woods Elementary School utilizes a Delta Direct Digital Control system for the operation of all the HVAC systems within the school. Pump controls are monitored and run on a primary/secondary system. The air handling units, exhaust/return fans, outside air exhaust, bypass dampers, and 3-way modulating valves serving chilled and hot water coils are controlled through time-scheduled programs for occupied conditions and night set-back (unoccupied) conditions.

Domestic Hot Water

There are two sources for Domestic hot water that are utilized in the Fountain Woods School, a 23 gallon Aerco gas-fired condensing hot water heater and a 75 gallon State gas-fired water heater. The domestic hot water is circulated throughout the building by a hot water re-circ pump. The circulation pump is controlled by an aqua stat. The domestic hot water piping insulation appeared to be in good condition.

Lighting

Typical lighting throughout building is a mixture of fluorescent tube lay-in fixtures with T-8 lamps with electronic ballasts and fluorescent down-lights. Exterior lighting consists of high pressure sodium lamps.

VI. MAJOR EQUIPMENT LIST

The equipment list contains major energy consuming equipment that through implementation of energy conservation measures could yield substantial energy savings. The list shows the major equipment in the facility and all pertinent information utilized in energy savings calculations. An approximate age was assigned to the equipment in some cases if a manufactures date was not shown on the equipment's nameplate. The ASHRAE service life for the equipment along with the remaining useful life is also shown in the Appendix.

Refer to the **Major Equipment List Appendix** for this facility.

VII. ENERGY CONSERVATION MEASURES

ECM #1: Lighting Upgrade – Gymnasium and Interior Spaces

Description:

The lighting in the facility is primarily made up of fluorescent fixtures with T-8 lamps with electronic ballasts; and some remaining Metal Halide lamps. These metal halide lamps within the gym area consume a large amount of power while on and can be replaced with a much more energy efficient fixture.

This ECM includes replacement of the existing fixtures containing Metal Halide lamps with fixtures containing T5HO lamps and electronic ballasts. The new energy efficient, T5HO high bay fixtures will provide adequate lighting and will save the owner on electrical costs due to the better performance of the lamp and ballasts.

In addition to the gym upgrade, the lighting provided for the center corridor is in excess of normal lighting levels. Therefore, this ECM also includes the de-lamping of the corridor fixtures. There is no ballast change required and the removal of only 1 lamp will save a substantial amount of energy.

Energy Savings Calculations:

The detailed **Investment Grade Lighting Audit Appendix** outlines the proposed retrofits, costs, savings, and payback periods.

Energy Savings Summary:

Interior Spaces

The lighting throughout the Fountain Woods Elementary School building is provided with modern fixtures with T8 lamps and electronic ballasts. There are only a small number of interior spaces where lighting is excessive and should be de-lamped.

Gymnasium

The gymnasium at the Elementary School utilizes 400W metal halide fixtures for its lighting. Metal halide bulbs provide a reasonably efficient option for bay lighting however a few drawbacks that are common. Metal halide fixtures often have poor overall efficacy which limits the amount of light actually leaving the fixture. Also metal halide bulbs require a significant warm-up period and even longer cool down period eliminating the potential for occupancy sensors frequent switching. This symptom encourages the gymnasium lighting to be left on continuously during the day. Another drawback is the reduced lumen output (Lumen Maintenance) of the metal halide bulb over its life time. Average bulb output or “mean lumens,” is approximately 25% less than the bulb’s initial lumens for typical metal halide lamps. In addition the most rapid rate of light output decline is during the beginning of its life, approximately 15-20% light loss

within the first 20% of its rated life. It is important to note that the light loss has no savings in energy used; therefore the overall light efficiency is continuously decreasing with age. The final drawback is the light quality or Color Rendering Index (CRI). The typical value for metal halide bulbs is 65, which is a measure of how close the light is to true “full spectrum” light produced by sunlight or incandescent lighting. Metal halide bulbs also show noticeable color shifting when the bulb is reaching the end of its life. Utilizing fluorescent fixtures in low and high bay spaces is a superior option over metal halide fixtures in all areas described above. Although metal halide fixtures provide light very efficiently at the start of the bulb life, the average efficiency over the life is below that of fluorescent fixtures.

This ECM includes replacement of each of the existing gymnasium high bay metal halide light fixtures with T5HO fixtures with reflective lenses. The retrofit for the metal halide fixtures includes a one for one fixture replacement. The fluorescent fixtures selected will provide equivalent light compared to the average light output of the existing metal halide fixtures. The bulb replacement cost for T-5 HO lamps compared to the existing metal halide lamps were found to be approximately equal and therefore not included in the savings calculations. In addition to the gym upgrade, the lighting provided for the center corridor is in excess of normal lighting levels. Therefore, this ECM also includes the de-lamping of the corridor fixtures. There is no ballast change required and the removal of only 1 lamp will save a substantial amount of energy.

Gymnasium Hours of Operation: 3,000 Hours/Yr

Energy Savings Calculations:

The **Investment Grade Lighting Audit Appendix** outlines the hours of operation, proposed retrofits, costs, savings, and payback periods for each set of fixtures in the each building.

Rebates and Incentives:

Gymnasium Fixtures

There are incentives available from NJ Smart Start[®] Program for the retrofits in this ECM. Incentives are calculated as follows:

From the **Smart Start Incentive Appendix**, the following incentives are warranted:

For replacement of HID (400-999W) with new T-5 or T-8 fixtures = \$100/Fixture

Smart Start ® Incentive = (# of 400W Metal Halide Fixture Replaced × \$100)

Smart Start ® Incentive = (20 × \$50) = \$2,000

There isn't any significant Replacement and Maintenance Savings generated by this ECM.

Energy Savings Summary:

ECM #1 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$5,328
NJ Smart Start Equipment Incentive (\$):	\$2,000
Net Installation Cost (\$):	\$3,328
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$2,521
Total Yearly Savings (\$/Yr):	\$2,521
Estimated ECM Lifetime (Yr):	15
Simple Payback	1.3
Simple Lifetime ROI	1036.3%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$37,815
Internal Rate of Return (IRR)	76%
Net Present Value (NPV)	\$26,767.53

ECM #2: Lighting Controls Upgrade

Description:

In some areas the lighting is left on unnecessarily. In many cases the lights are left on because of the inconvenience to manually switch lights off when a room is left on or when a room is first occupied. This is common in rooms that are occupied for only short periods and only a few times per day. In some instances lights are left on due to the misconception that it is better to keep the lights on rather than to continuously switch lights on and off. Although increased switching reduces lamp life, the energy savings outweigh the lamp replacement costs. The payback timeframe for when to turn the lights off is approximately two minutes. If the lights are expected to be off for at least a two minute interval, then it pays to shut them off.

Lighting controls come in many forms. Sometimes an additional switch is adequate to provide reduced lighting levels when full light output is not needed. Occupancy sensors detect motion and will switch the lights on when the room is occupied. Occupancy sensors can either be mounted in place of a current wall switch, or on the ceiling to cover large areas. Photocell control senses light levels and turn off or reduce lights when there is adequate daylight. Photocells are mostly used outside, but are becoming more popular in energy-efficient interior lighting designs as well.

The U.S. Department of Energy sponsored a study to analyze energy savings achieved through various types of building system controls. The referenced savings is based on the “Advanced Sensors and Controls for Building Applications: Market Assessment and Potential R&D Pathways,” document posted for public use April 2005. The study has found that commercial buildings have the potential to achieve significant energy savings through the use of building controls. The average energy savings are as follows based on the report:

- Occupancy Sensors for Lighting Control 20% - 28% energy savings.

Estimated energy savings resulting from the implementation of this ECM for energy management controls in this facility:

- 10% of the total light energy controlled by occupancy sensors
- 25% of the total light energy controlled by daylight sensors
- 25% of the total light energy controlled by occupancy sensors with daylight sensors

(The majority of the savings is expected to be after school hours when rooms are left with lights on)

This ECM includes installation of ceiling type sensors for individual offices, classrooms, large bathrooms, and libraries. Sensors shall be manufactured by Sensorswitch, Watt Stopper or equivalent. The **Investment Grade Lighting Audit Appendix** of this report includes the summary of lighting controls implemented in this ECM and outlines the proposed controls, costs, savings, and payback periods. The calculations adjust the lighting power usage by the applicable percent savings for each area that includes lighting controls.

Energy Savings Calculations:

$$\text{Energy Savings} = (\% \text{ Savings} \times \text{Controlled Light Energy (kWh/Yr)})$$

$$\text{Savings.} = \text{Energy Savings (kWh)} \times \text{Ave Elec Cost} \left(\frac{\$}{\text{kWh}} \right)$$

Installation Cost and Rebates:

Installation cost per dual-technology sensors (Basis: Sensor switch or equivalent) are as follows:

- | | |
|---|------------------------|
| • Dual Technology Occupancy Sensor & Day Light Sensor | \$360 per installation |
| • Daylight Sensor | \$160 per installation |
| • 2 Pole Power Pack w/Dual Tech. Occupancy Sensor | \$225 per installation |
| • Dual Technology Occupancy Sensor - Remote Mount | \$160 per installation |
| • Dual Technology Occupancy Sensor - Switch Mount | \$75 per installation |
| • Dual Technology Occupancy Sensor - Fixture Mount. | \$100 per installation |

Cost includes material and labor.

See the **Investment Grade Lighting Audit Appendix** for details.

From the **NJ Smart Start[®] Program Incentives Appendix**, the installation of a lighting control device warrants the following incentive:

Occupancy Sensor Wall Mounted (existing facility only) = \$20 per sensor.

Occupancy Sensor Remote Mounted (existing facility only) = \$35 per sensor

$$\text{Smart Start}^{\circledR} \text{ Incentive} = (\# \text{ of wallmount} \times \$ 20) + (\# \text{ of ceiling mount} \times 35)$$

$$\text{Smart Start}^{\circledR} \text{ Incentive} = (20 \times \$ 20) + (35 \times \$ 35) = \$3,380$$

Energy Savings Summary:

ECM #2 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$16,215
NJ Smart Start Equipment Incentive (\$):	\$3,380
Net Installation Cost (\$):	\$12,835
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$4,455
Total Yearly Savings (\$/Yr):	\$4,455
Estimated ECM Lifetime (Yr):	15
Simple Payback	2.9
Simple Lifetime ROI	420.6%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$66,818
Internal Rate of Return (IRR)	34%
Net Present Value (NPV)	\$40,343.33

ECM #3: Computer Monitor Replacement

Description:

A significant number of the computers in the classrooms and offices utilize CRT computer monitors. These computer monitors are outdated and have several disadvantages such as; significantly increased higher energy consumption, uses large amount of desk space, poor picture quality, distortions and flickering image, secular glare problems, and high weight, and electromagnetic emissions. Many of the drawbacks are difficult to quantify except for the energy use. CRT monitors use considerably more energy than an alternative flat panel LCD monitor. Replacement of the existing CRT monitors with LCD monitors saves considerable energy as well as provides other ergonomic benefits as well.

Based on the site survey it was noted that a number of the computers were left on and allowed to run 24 / 7. The majority of the monitors were left in screen saver mode, which is deceiving since this mode only saves the computer screen from image burn in, however it does not save on energy consumption. The average operating hours for all computers and monitors is estimated based on the site survey observations. Energy consumption of computer monitors are based on manufacture's specifications.

This ECM includes replacement of all existing CRT monitors with LCD flat panel monitors throughout the building. Installation costs were neglected for this ECM with the intention that the monitors would be replaced by the facility IT technicians. The calculations are based on the following operating assumptions:

Energy Savings Calculations:

# of Computers:	21
Run Time %:	90%
Weeks per Yr:	42
Hrs per Week:	60

$$\text{Electric Usage} = \frac{\# \text{ of Computers} \times \text{Run Time \%} \times \text{Monitor Power (W)} \times \text{Operation (Hrs)}}{1000 \left(\frac{\text{W}}{\text{KW}} \right)}$$

$$\text{Energy Cost} = \text{Electric Usage (kWh)} \times \text{Ave Elec Cost} \left(\frac{\$}{\text{kWh}} \right)$$

COMPUTER MONITOR CALCULATIONS			
ECM INPUTS	EXISTING	PROPOSED	SAVINGS
ECM INPUTS	CRT Monitors	LCD Monitor	
# of Computers	21	21	
Monitor Power Cons. (W)	75	25	
Run Time %	90%	90%	
Operating Hrs per Week	60	60	
Operating Weeks per Yr	42	42	
Elec Cost (\$/kWh)	0.151	0.151	
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	EXISTING	PROPOSED	SAVINGS
Electric Usage (kWh)	3,572	1,191	2,381
Energy Cost (\$)	\$539	\$180	\$360
COMMENTS:			

Installation cost of new monitors is estimated based on current pricing for a 17" LCD monitor on the market today. No labor costs were included for replacing the existing monitors with the new monitors. No incentives are available for installation of computer monitors. Net cost per monitor was estimated to be \$100. Cost of installation is summarized in the table below.

COST & SAVINGS SUMMARY			
ECM INPUT	# OF UNITS	UNIT COST	TOTAL COST
CRT MONITORS	21	\$100	\$2,100
Total	21		\$2,100

Energy Savings Summary:

ECM #3 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$2,100
NJ Smart Start Equipment Incentive (\$):	\$0
Net Installation Cost (\$):	\$2,100
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$360
Total Yearly Savings (\$/Yr):	\$360
Estimated ECM Lifetime (Yr):	15
Simple Payback	5.8
Simple Lifetime ROI	156.9%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$5,394
Internal Rate of Return (IRR)	15%
Net Present Value (NPV)	\$2,192.78

ECM #4: Install NEMA Premium® Efficiency Motors

Description:

The improved efficiency of the NEMA Premium® efficient motors is primarily due to better designs with use of better materials to reduce losses. Surprisingly, the electricity used to power a motor represents 95 % of its total lifetime operating cost. Because many motors operate continuously 24 hours a day, even small increases in efficiency can yield substantial energy and dollar savings.

Some of the existing electric motors driving the primary hot water pumps and the supply air fans in some of the air handling units are candidates for replacing with premium efficiency motors. These standard efficiency motors run considerable amount of time over a year.

This energy conservation measure replaces existing electric motors over 5 HP or more with NEMA Premium® efficiency motors. NEMA Premium® is the most efficient motor designation in the marketplace today.

IMPLEMENTATION SUMMARY					
EQMT ID	FUNCTION	MOTOR HP	HOURS OF OPERATION	EXISTING EFFICIENCY	NEMA PREMIUM EFFICIENCY
HWP-1	Hot Water Pump #1	7.5	2,160	88.5%	91.7%
HWP-2	Hot Water Pump #2	7.5	2,160	88.5%	91.7%
LWP-1	LOOP Water Pump #1	15	4,380	87.5%	92.4%
LWP-2	LOOP Water Pump #2	15	4,380	87.5%	92.4%
CWP-1	Condenser Water Pump #1	15	1,280	93.0%	92.4%
CWP-2	Condenser Water Pump #2	15	1,280	93.0%	92.4%
CHWP-1	Chilled Water Pump #1	5	2,880	85.5%	90.2%
CHWP-2	Chilled Water Pump #2	5	2,880	85.5%	90.2%
LWP-3	LOOP Water Pump #3	10	4,380	89.5%	92.4%
LWP-4	LOOP Water Pump #4	10	4,380	89.5%	92.4%
CWP-3	Condenser Water Pump #1	7.5	2,880	88.5%	91.7%
CWP-4	Condenser Water Pump #2	7.5	2,880	88.5%	91.7%
Cooling Tower #1	Cooling Tower #1 Fan #1	7.5	1,440	91.7%	91.7%
	Cooling Tower #1 Fan #2	30	1,440	94.1%	94.1%
Cooling Tower #2	Cooling Tower #2 Fan #1	15	1,440	92.4%	92.4%
	Cooling Tower #2 Fan #2	5	1,440	85.5%	90.2%
AHU #1	AHU #1 Supply Fan	15	2,880	91.0%	92.4%
AHU #2	AHU #2 Supply Fan	15	2,880	91.0%	92.4%

Energy Savings Calculations:

$$\text{Electric usage, kWh} = \frac{\text{HP} \times \text{LF} \times 0.746 \times \text{Hours of Operation}}{\text{Motor Efficiency}}$$

where, HP = Motor Nameplate Horsepower Rating

LF = Load Factor

Motor Efficiency = Motor Nameplate Efficiency

$$\text{Electric Usage Savings, kWh} = \text{Electric Usage}_{\text{Existing}} - \text{Electric Usage}_{\text{Proposed}}$$

$$\text{Electric Usage Savings, kWh} = \text{Electric Usage}_{\text{Existing}} - \text{Electric Usage}_{\text{Proposed}}$$

$$\text{Electric cost savings} = \text{Electric Usage Savings} \times \text{Electric Rate} \left(\frac{\$}{\text{kWh}} \right)$$

The calculations were carried out and the results are tabulated in the table below:

PREMIUM EFFICIENCY MOTOR CALCULATIONS							
EQMT ID	MOTOR HP	LOAD FACTOR	EXISTING EFFICIENCY	NEMA PREMIUM EFFICIENCY	POWER SAVINGS kW	ENERGY SAVINGS kWh	COST SAVINGS
HWP-1	7.5	90%	88.5%	91.7%	0.20	431	\$77
HWP-2	7.5	90%	88.5%	91.7%	0.20	431	\$77
LWP-1	15	90%	87.5%	92.4%	0.61	2,688	\$478
LWP-2	15	90%	87.5%	92.4%	0.61	2,688	\$478
CWP-1	15	90%	93.0%	92.4%	Existing motors to remain		
CWP-2	15	90%	93.0%	92.4%			
CHWP-1	5	90%	85.5%	90.2%	0.20	592	\$105
CHWP-2	5	90%	85.5%	90.2%	0.20	592	\$105
LWP-3	10	90%	89.5%	92.4%	0.24	1,037	\$185
LWP-4	10	90%	89.5%	92.4%	0.24	1,037	\$185
CWP-3	7.5	90%	88.5%	91.7%	0.20	575	\$102
CWP-4	7.5	90%	88.5%	91.7%	0.20	575	\$102
Cooling Tower #1	7.5	90%	91.7%	91.7%	Existing motors to remain		
	30	90%	94.1%	94.1%			
Cooling Tower #2	15	90%	92.4%	92.4%			
	5	90%	85.5%	90.2%			
AHU #1	15	90%	91.0%	92.4%	0.17	486	\$86
AHU #2	15	90%	91.0%	92.4%	0.17	486	\$86
TOTAL					3.2	11,617	\$1,110

Equipment Cost and Incentives

Below is a summary of SmartStart Building® incentives for premium efficiency motors:

INCENTIVES	
HORSE POWER	NJ SMART START INCENTIVE
5	\$60
7.5	\$90
10	\$100
15	\$115
20	\$125
25	\$130

The following table outlines the summary of motor replacement costs and incentives:

MOTOR REPLACEMENT SUMMARY						
EQMT ID	MOTOR POWER HP	INSTALLED COST	SMART START INCENTIVE	NET COST	TOTAL SAVINGS	SIMPLE PAYBACK
HWP-1	7.5	\$2,007	\$90	\$1,917	\$77	25.0
HWP-2	7.5	\$2,007	\$90	\$1,917	\$77	25.0
LWP-1	15	\$3,723	\$115	\$3,608	\$478	7.5
LWP-2	15	\$3,723	\$115	\$3,608	\$478	7.5
CWP-1	15	Existing motors to remain				
CWP-2	15					
CHWP-1	5	\$1,543	\$60	\$1,483	\$105	14.1
CHWP-2	5	\$1,543	\$60	\$1,483	\$105	14.1
LWP-3	10	\$2,608	\$100	\$2,508	\$185	13.6
LWP-4	10	\$2,608	\$100	\$2,508	\$185	13.6
CWP-3	7.5	\$2,007	\$90	\$1,917	\$102	18.7
CWP-4	7.5	\$2,007	\$90	\$1,917	\$102	18.7
Cooling Tower #1	7.5 30	Existing motors to remain				
Cooling Tower #2	15 5					
AHU #1	15	\$3,723	\$115	\$3,608	\$86	41.8
AHU #2	15	\$3,723	\$115	\$3,608	\$86	41.8
TOTAL	Totals:	\$31,220	\$1,140	\$30,080	\$2,068	14.5

Energy Savings Summary:

ECM #4 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$31,220
NJ Smart Start Equipment Incentive (\$):	\$1,140
Net Installation Cost (\$):	\$30,080
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$2,068
Total Yearly Savings (\$/Yr):	\$2,068
Estimated ECM Lifetime (Yr):	15
Simple Payback	14.5
Simple Lifetime ROI	3.1%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$31,017
Internal Rate of Return (IRR)	0%
Net Present Value (NPV)	(\$5,394.61)

ECM #5: Install VFD on Cooling Tower Fans

Description:

Each cooling tower for the chiller and the heat pump loop is equipped with a single fan directly coupled with two motors to operate the fan at two different speeds. The smaller motor operates the fan at lower speed when the cooling load is low. The larger motor is energized to run the cooling tower fan at high speed.

Two speed cooling towers are typically more energy efficient than single speed cooling towers with on/off controls. However, there is still potential energy savings by converting the two speed system to variable speed systems. In a typical variable speed system, cooling tower air volume is varied based on a relationship between the condenser water supply temperature and the ambient air wet bulb temperature. This allows system to modulate fan speed to the optimum speed required for the load conditions and minimizes full speed operation.

This ECM includes the installation of new variable frequency drives (VFDs) and controls for each cooling tower in this facility. The drive will be connected to the larger of the two motors on each tower. The drive belt for the smaller motor is recommended to be removed while keeping the motor in space. The VFDs shall be programmed to modulate fan speed based on condenser water supply temperature. In addition, a sub-routine should be added to the control algorithm to reset condenser water supply temperature based on the wet-bulb temperature of the ambient air.

Energy and cost savings calculations are based on basic engineering principles along with a VFD savings calculation software “FanSave Version 4.0.B,” provided by ABB.

Hours of operation for the cooling tower operation: 1,440 Hours/year

Energy Savings Calculations:

FanSave software calculates fan energy consumption savings based on the principles below.

$$\text{Fan Electric HP} = \frac{Q_{\text{CFM}} \times \text{Total Pressure}_{\text{in WG}}}{6356 \times \eta_{\text{Fan}} \times \eta_{\text{motor}} \times \eta_{\text{transmission}}}$$

$$\text{Fan Energy Consumption (kWh)} = \text{Motor HP} \times 0.746 \frac{\text{kW}}{\text{HP}} \times \text{Hours of operation (Hr)}$$

$$\text{Total Fan Energy Consumption (kWh)} = \sum \text{Energy Consumption of Each Motor}$$

$$\text{Fan Energy Cost (\$)} = \text{Total Consumption(kWh)} \times \text{Average Cost of Electric} \left(\frac{\$}{\text{kWh}} \right)$$

FanSave uses Affinity Laws in order to calculate energy savings by reducing fan speed. Affinity laws, also known as Fan Laws are as following:

Q = Flow, n = Fan Speed, p = total pressure

$$\frac{Q_2}{Q_1} = \frac{n_2}{n_1} \quad \frac{p_2}{p_1} = \left(\frac{n_2}{n_1}\right)^2 \quad \frac{HP_2}{HP_1} = \left(\frac{n_2}{n_1}\right)^3$$

Fan Save Input:

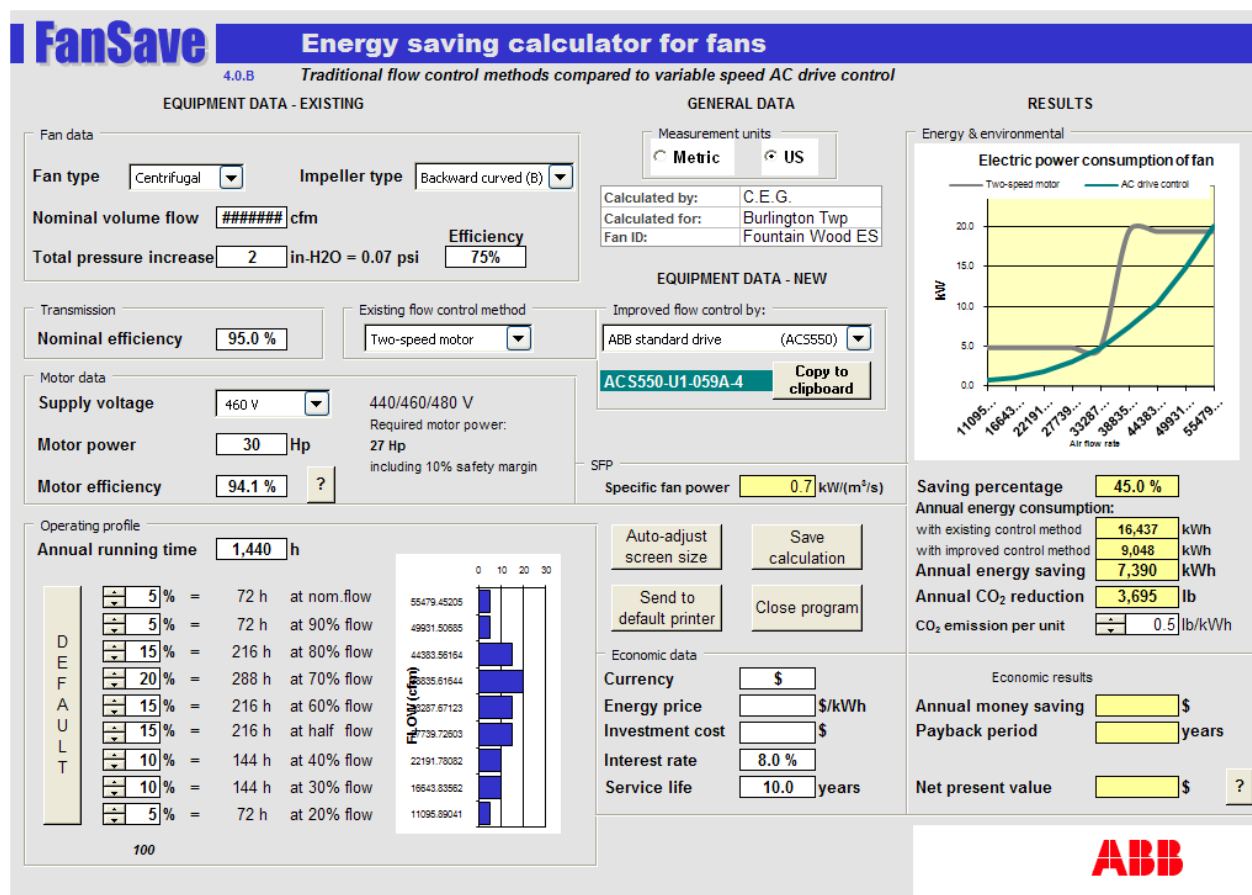
$\eta_{\text{Fan}} = 70\%$ $\eta_{\text{motor}} = 90\%$ $\eta_{\text{transmission}} = 95\%$

Existing Flow Control Method is selected as Two-speed Flow Control. Other input values for each cooling tower can be seen in the screenshot below from the software.

Cooling Tower #1:

Fan #1 = 30 HP (Install VFD)

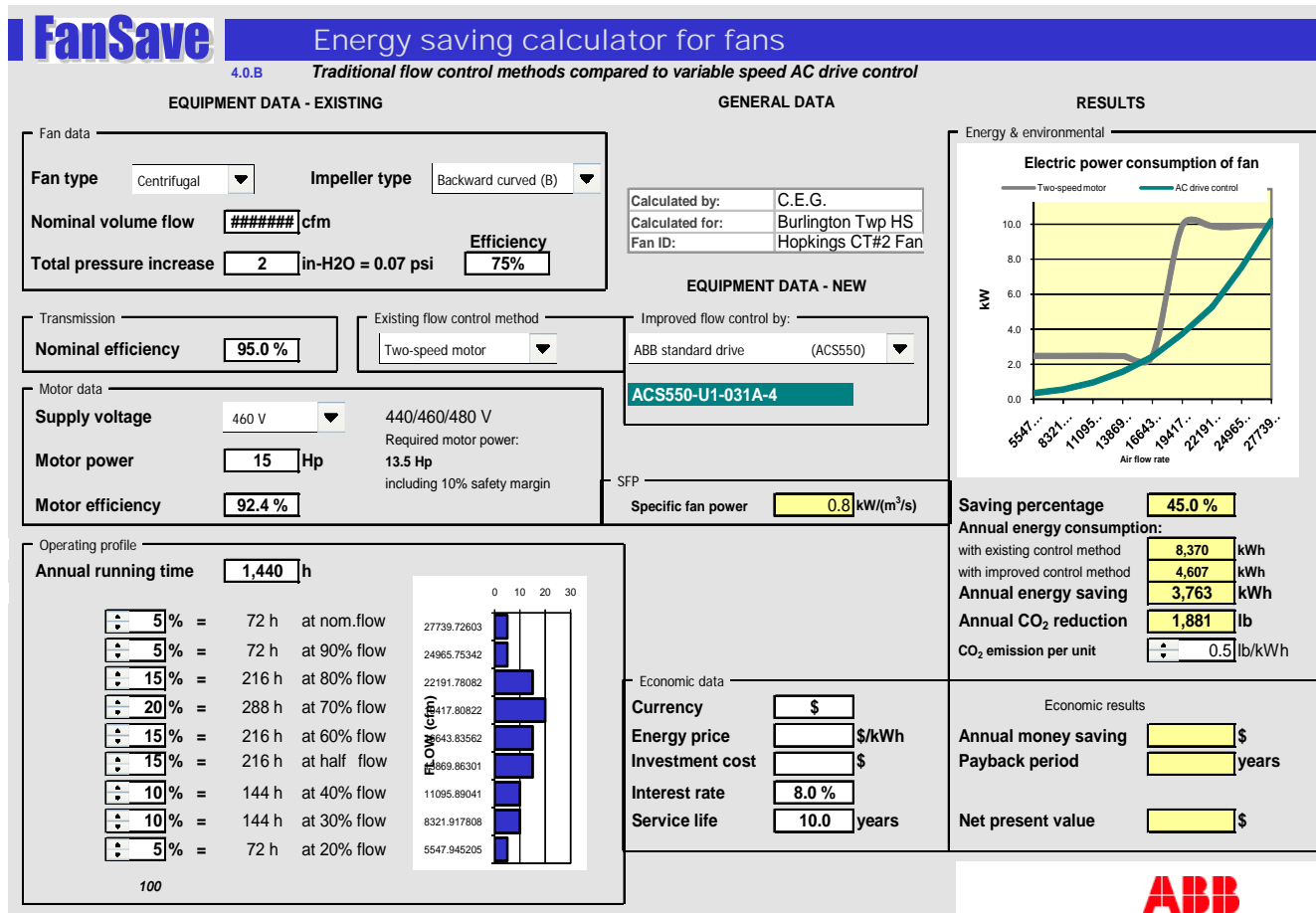
Fan #2 = 7.5 HP (Remove drive belt)



Cooling Tower #2:

Fan #1 = 15 HP (Install VFD)

Fan #2 = 5 HP (Remove drive belt)

Results

FanSave 4.0.B calculates approximately 45% fan energy savings for each cooling tower by modulating the fan speed throughout the day. The results for the fan are as follows:

CALCULATION SUMMARY						
EQMT ID	FUNCTION	MOTOR HP	HOURS OF OPERATION	ENERGY SAVINGS %	ENERGY SAVINGS kWh	COST SAVINGS \$
Cooling Tower #1	Fan Motor	30	1,440	45%	7,390	\$1,116
Cooling Tower #2	Fan Motor	15	1,440	45%	3,763	\$568
TOTAL					11,153	\$1,684

Cost and Incentives

Estimated installed cost of two sets of variable frequency drives with controllers is \$23,500. The basis for this ECM is packaged cooling tower drives and controllers made by BAC or equivalent.

This ECM does not qualify for an incentive from the NJ Smart Start program.

Energy Savings Summary:

ECM #5 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$23,500
NJ Smart Start Equipment Incentive (\$):	\$0
Net Installation Cost (\$):	\$23,500
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$1,684
Total Yearly Savings (\$/Yr):	\$1,684
Estimated ECM Lifetime (Yr):	15
Simple Payback	14.0
Simple Lifetime ROI	7.5%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$25,262
Internal Rate of Return (IRR)	1%
Net Present Value (NPV)	(\$3,395.29)

ECM #6: Commercial Kitchen Exhaust Hood Controls

Description:

The kitchen in this facility is equipped with a large commercial kitchen exhaust hood providing exhaust for the cooking equipment. The total kitchen exhaust from the hoods is approximately 4,500 CFM powered by a 3 HP exhaust fan located on the roof. The make-up air unit for the cafeteria provides conditioned air to replace all the air exhausted through the exhaust hood with an estimated 5 HP partial supply fan power. This system operates based on manual switches located in the kitchen. The installation of kitchen exhaust controls would significantly reduce the total kitchen exhaust and make-up air quantity. The conditioned make up air and exhausted air savings are achieved by monitoring the exhaust hoods and exhaust based on the actual use of the kitchen equipment. Temperature sensors and optical lasers monitor the heat and smoke production at each exhaust hood to reduce the exhaust and make-up airflow based on the need of the kitchen equipment.

This ECM includes installation of kitchen exhaust controls for the kitchen exhaust hood and VFD's for the constant volume exhaust fan. The hood will be retrofitted with temperature and laser sensors to monitor the activity of each of all equipment installed below the hoods. The work involves installing a Melink Kitchen Hood Variable Air Volume Controller; variable frequency drive on the kitchen hood exhaust fan; and turn off all the kitchen hood exhaust systems when the kitchen is closed. When the cooking appliances are turned on, the hood exhaust fan speed will increase based on the hood exhaust temperature. During heavy cooking, the kitchen hood exhaust fan increases to 100% speed until the smoke/vapor is removed. Energy savings are also realized when the kitchen equipment is operating at less than full load due to minimal cooking operations. During these times the fan speed decreases, removing only the necessary amount of air, saving exhaust fan energy and make up air conditioning energy.

Energy Calculations Summary:

Detailed calculations for the proposed kitchen hood control system can be found in the **Kitchen Exhaust Calculations Appendix**. It is pertinent to note that the calculation assumes the exhaust fans and make-up air unit are manually turned off for approximately 16 hours per day.

Installed cost of the kitchen hood control system is \$22,873. The calculated energy savings equals approximately \$1,400 per year.

From the Smart Start Incentive appendix, the retrofit of fan motors with VFDs warrants the following incentive:

5 to <10HP = \$155 per HP

10 to <20HP = \$120 per HP

SmartStart® Incentive = (Total HP × \$155/HP) + (Total HP × \$120/HP) + (Total HP × \$65/HP)

SmartStart® Incentive = (1 × 5HP × \$155/HP)

SmartStart® Incentive= \$775

A summary of energy savings can be seen in the table below:

KITCHEN EXHAUST CONTROLS CALCULATION			
ECM INPUTS	EXISTING	PROPOSED	SAVINGS
ECM INPUTS	Manually Controlled Kitchen Exhaust	MELINK Kitchen Exhaust Controls	
Fan Power Usage (kWh)	7,520	2,542	4,978
Gas Usage (Therms)	575	374	201
Cooling Energy (kWh)	6,480	4,212	2,268
Average Gas Cost (\$/Therm)	1.23	1.23	
Electric Cost (\$/KWH)	0.159	0.159	
SAVINGS CALCULATIONS			
ECM RESULTS	EXISTING	PROPOSED	SAVINGS
Gas Energy Cost (\$)	\$707	\$459	\$247
Electric Energy Cost (\$)	\$2,226	\$1,074	\$1,152
Total Energy Cost (\$)	\$2,933	\$1,533	\$1,400
COMMENTS:	*ECM is based on calculations using spreadsheets provided by MELINK Intelli-hood controls manufacturer.		

Energy Savings Summary:

ECM #6 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$22,900
NJ Smart Start Equipment Incentive (\$):	\$775
Net Installation Cost (\$):	\$22,125
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$1,400
Total Yearly Savings (\$/Yr):	\$1,400
Estimated ECM Lifetime (Yr):	15
Simple Payback	15.8
Simple Lifetime ROI	-5.1%
Simple Lifetime Maintenance Savings	0
Simple Lifetime Savings	\$20,993
Internal Rate of Return (IRR)	-1%
Net Present Value (NPV)	(\$5,417.47)

ECM #7: Solar Domestic Hot Water System

Description:

Fountain Wood Elementary School operates with a nearly year round demand for hot water production. The hot water is supplied by two gas fired domestic hot water heaters. The efficiency of the existing hot water heating system is based on the efficiency of the existing hot water heaters.

This ECM includes the installation of a solar thermal system to produce domestic hot water. The system includes thermal panels mounted over the roof of the existing boiler plant, piping distribution to the domestic hot water tanks, a pre-heat hot water heat exchanger, solar PV panels and pumps for glycol distribution, and controls. The system features a pre-heat tank with the existing tanks still in place as a back-up means for hot water production to ensure no loss of hot water production. The calculations are based on Viessmann Flat Plat collectors model VITOSOL 200F or equivalent.

Energy Savings Calculations:

$$\text{DHW Load} = \left(\text{Summer Energy Usage} \left(\frac{\text{Therms}}{\text{Month}} \right) \times 12(\text{Months}) \times \text{Eff}(\%) \times \text{Heating Value} \left(\frac{\text{Btu}}{\text{Therms}} \right) \right)$$

$$\text{Solar Sys Heat \%} = \frac{\text{Solar Heat(kBtu)}}{\text{DHW Load(kBtu)}}$$

$$\text{Gas Usage Reduction} = \text{Summer Gas Usage} \left(\frac{\text{Therms}}{\text{Month}} \right) \times 12(\text{Months}) \times \text{Domestic HW Heater Efficiency, \%}$$

$$\text{Savings} = \text{Gas Usage Reduction} \times \text{Ave Cost} \left(\frac{\$}{\text{Therms}} \right)$$

Below is the average domestic hot water usage calculation table with the solar domestic hot water heating calculation tables.

Existing Domestic Hot Water Parameters:

Ave Gas Cost = \$1.23/Therm
 Estimated Domestic Water Heating Efficiency = 85%
 Estimated monthly non-space heating gas usage (Dom HW) = 666 Therms*
 (*Averaged from May - September gas usage)

Solar Thermal System Parameters:

ANNUAL GAS USAGE		
MONTH	TOTAL USAGE	DOMESTIC HW USAGE
Mar-09	4,909	808
Apr-09	2,754	808
May-09	1,376	808
Jun-09	952	808
Jul-09	989	808
Aug-09	215	808
Sep-09	509	808
Oct-09	2,428	808
Nov-09	2,866	808
Dec-09	4,318	808
Jan-10	5,437	808
Feb-10	6,237	808
TOTAL	32,990	9,697

See the **Solar Domestic Hot Water Heater Appendix** for detailed calculations.

Solar Thermal System Production: 1,066,400 kBtu/Yr

Summary of solar thermal system calculations are in the table below.

SOLAR THERMAL CALCULATIONS			
ECM INPUTS	EXISTING	PROPOSED	SAVINGS
ECM INPUTS	HW Heaters	Solar Thermal Sys w/ HW Heaters	-
Ave Monthly Gas Usage for DHW (Therms)	808	-	-
Hot Water Heater Efficiency (%)	90%	90%	-
Gas Heat Value (BTU/Therm)	100,000	100,000	-
DHW Load (MMBTUs)	873	873	-
Solar Thermal Sys. Production (MMBTUs)	0.0	741	741
Solar Thermal Sys. Heat % of Baseline (MMBTUs)	0.0	85%	85%
Gas Cost (\$/Therm)	1.23	1.23	-
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	EXISTING	PROPOSED	SAVINGS
Natural Gas Usage (Therms)	9,697	1,468	8,228
Energy Cost (\$)	\$11,927	\$1,806	\$10,121
COMMENTS:	This ECM is based on solar thermal hot water production from the solar thermal hot water calculation appendix.		

Installed cost of the solar thermal system including panels, piping, equipment, heat exchanger, pumps, and controls is estimated to be \$175,000.

Energy Savings Summary:

ECM #7 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$175,000
NJ Smart Start Equipment Incentive (\$):	\$0
Net Installation Cost (\$):	\$175,000
Maintenance Savings (\$/Yr):	\$0
Energy Savings (\$/Yr):	\$10,121
Total Yearly Savings (\$/Yr):	\$10,121
Estimated ECM Lifetime (Yr):	15
Simple Payback	17.3
Simple Lifetime ROI	-13.2%
Simple Lifetime Maintenance Savings	\$0
Simple Lifetime Savings	\$151,815
Internal Rate of Return (IRR)	-2%
Net Present Value (NPV)	(\$54,176.26)

ECM #8: Water Cooled Chiller Installation

Description:

The major source of cooling for the Fountain Wood Elementary School is a 100 Ton water cooled chiller with reciprocating compressors made by McQuay. The chiller is approximately 12 years old and in reasonably good condition. However the unit is a less efficient model compared to current water cooled chiller technologies.

The part load (IPLV) efficiency of the existing water cooled chillers with reciprocating compressors is 0.63 kW/Ton. The part load efficiency of a new water cooled chiller with scroll or screw compressors is as low as 0.5 kW/Ton. The ancillary pumping energy and cooling tower fan energy is approximately 0.14 KW/Ton.

This ECM includes the replacement of the water cooled chiller with a newer chiller with high efficiency scroll compressors and R410a refrigerant. The installation also includes all associated piping, labor, and controls. The ECM is based on 100 Ton Carrier model number 30HX C106 Water-Cooled Chiller or equivalent. Sizing indicated within the calculation of this ECM is based on a one for one replacement of the existing equipment capacity. The owner should have a Professional Engineer verify heating and cooling loads to verify actual building cooling requirements.

Parameters:

Seasonal Cooling Hrs.	= 1200 hrs/yr.
Average Cost of Electricity	= \$0.151/kWh
Total Cooling Capacity	= 100 Tons
Existing Unit Full Load Eff.	= 0.85 KW/Ton
New Unit Full Load Eff.	= 0.71 KW/Ton
Existing Unit IPLV Eff.	= 0.63 KW/Ton
New Unit IPLV Eff.*	= 0.52 KW/Ton

*Eff excludes ancillary equipment energy

Energy Savings Calculations:Cooling Energy:

$$\text{Cooling Energy} = \text{Cooling(Tons)} \times \text{Efficiency} \left(\frac{\text{kW}}{\text{Ton}} \right) \times \text{Full Load Hours}$$

$$\text{Demand Savings} = \frac{\text{Energy Savings, kWh}}{\text{Full Load Hours}}$$

$$\text{Water Usage} = \text{Makeup Water} \left(\frac{\text{Gal}}{\text{TonHr}} \right) \times \text{Cooling Capacity(Tons)} \times \text{Full Load Hours}$$

$$\text{Water Cost} = \text{Water Consumption (Gal)} \times \text{Ave Water Cost} \left(\frac{\$}{\text{Gal}} \right)$$

$$\text{Electric Savings} = \text{Electric Energy Savings (kWh)} \times \text{Average Electric Cost} \left(\frac{\$}{\text{kWh}} \right)$$

$$\text{Cooling Tower Make up, } \frac{\text{Gallons}}{\text{TonHr}} = \frac{\text{Chiller Capacity(Ton)} \times 12,000 \frac{\text{BTU}}{\text{Hr}} \times \left(1 + \frac{1}{\text{COP}} \right)}{950 \frac{\text{BTU}}{\text{Lb}} \times 8.34 \frac{\text{Lb}}{\text{Gal}}}$$

$$\text{COP} = \frac{12,000 \frac{\text{Btu}}{\text{Ton Hr}}}{\text{Chiler Efficiency} \left(\frac{\text{kW}}{\text{Ton}} \right) \times 3412 \frac{\text{Btu}}{\text{kWh}}}$$

Energy savings calculations are summarized in the table below.

WATER COOLED CHILLER CALCULATIONS			
ECM INPUTS	EXISTING	PROPOSED	SAVINGS
ECM INPUTS	Existing Water Cooled Chiller	Water Cooled Chiller & Cooling Tower	-
Operating Capacity (Tons)	100	100	-
Efficiency IPLV (KW/Ton) including ancillary eqpt.	0.77	0.66	-
Seasonal Cooling Hrs (Est.)	1,200	1,200	-
Make-Up Water Use (Gal/Ton Hr)	1.85	1.80	-
Cooling Energy (kWh)	92,990	79,409	-
Water Cost (\$/Gallon)	0.0025	0.0025	-
Elec Cost (\$/kWh)	0.151	0.151	-
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	EXISTING	PROPOSED	SAVINGS
Water Usage (Gallons)	221,795	215,946	5,849
Electric Energy (kWh)	92,990	79,409	13,582
Electric Demand (KW)	77.5	66	11
Water Cost (\$)	\$554	\$540	\$15
Electric Energy Cost (\$)	\$14,042	\$11,991	\$2,051
Total Cost (\$)	\$14,596	\$12,531	\$2,065
COMMENTS:			

Installation cost and Equipment Incentives

Installation cost for the packaged water cooled chiller is estimated to be \$100,000.

From the NJ Smart Start® Program appendix, the unit falls under the category “Electric Chiller” and warrants an incentive based on the full load efficiency (kW/Ton) of the unit. The program incentives are calculated as follows:

$$\text{Smart Start } \textcircled{R} \text{ Incentive} = \text{Total Capacity (Tons)} \times \frac{\$}{\text{Ton}} \text{ Incentive}$$

The full load efficiency of the proposed unit is 0.713 kW/Ton. This warrants a \$30/Ton incentive.

$$\text{Smart Start } \textcircled{R} \text{ Incentive} = 100 \text{ (Tons)} \times \frac{\$30}{\text{Ton}} = \$3,000$$

Energy Savings Summary:

ECM #8 - ENERGY SAVINGS SUMMARY	
Installation Cost (\$):	\$100,000
NJ Smart Start Equipment Incentive (\$):	\$3,000
Net Installation Cost (\$):	\$97,000
Maintenance Savings (\$/Yr):	\$15
Energy Savings (\$/Yr):	\$2,051
Total Yearly Savings (\$/Yr):	\$2,065
Estimated ECM Lifetime (Yr):	15
Simple Payback	47.0
Simple Lifetime ROI	-68.1%
Simple Lifetime Maintenance Savings	\$219
Simple Lifetime Savings	\$30,982
Internal Rate of Return (IRR)	-12%
Net Present Value (NPV)	(\$72,342.54)

VIII. RENEWABLE/DISTRIBUTED ENERGY MEASURES

Globally, renewable energy has become a priority affecting international and domestic energy policy. The State of New Jersey has taken a proactive approach, and has recently adopted in its Energy Master Plan a goal of 30% renewable energy by 2020. To help reach this goal New Jersey created the Office of Clean Energy under the direction of the Board of Public Utilities and instituted a Renewable Energy Incentive Program to provide additional funding to private and public entities for installing qualified renewable technologies. A renewable energy source can greatly reduce a building's operating expenses while producing clean environmentally friendly energy. CEG has assessed the feasibility of installing renewable energy measures (REM) for Fountain Woods Elementary School utilizing renewable technologies and concluded that there is potential for solar energy generation. The solar photovoltaic system calculation summary will be concluded as **REM#1** within this report.

Solar Generation

Solar energy produces clean energy and reduces a building's carbon footprint. This is accomplished via photovoltaic panels which parking lots can also be utilized for the installation of a solar array. A truss system can be installed that is high enough to park vehicles under the array and no parking lot area is lost.

The state of NJ has instituted a program in which one Solar Renewable Energy Certificate (SREC) is given to the Owner for every 1000 kWh of generation. SREC's can be sold anytime on the market at their current market value. The value of the credit varies upon the current need of the power companies. The average value per credit is around \$350, this value was used in our financial calculations. This equates to \$0.35 per kWh generated.

CEG has reviewed the existing site area of the Hopkins Building at the Burlington Township High School for the purposes of determining a potential for a photovoltaic system. CEG believes a ground mounted parking lot canopy system is best suited for this site. An area of 16,800 S.F. can be utilized for a PV system as depicted in the **Renewable / Distributed Energy Measures Calculation Appendix**. Using this square footage it was determined that a system size of 262.89 kilowatts could be installed. A system of this size has an estimated kilowatt hour production of 326,666 KWh annually, reducing the overall utility bill by approximately 21.6% percent. A detailed financial analysis can be found in the **Renewable / Distributed Energy Measures Calculation Appendix**. This analysis illustrates the payback of the system over a 25 year period. The eventual degradation of the solar panels and the price of accumulated SREC's are factored into the payback.

The proposed photovoltaic array layout is designed based on the specifications for the Sun Power SPR-230 panel. This panel has a "DC" rated full load output of 230 watts, and has a total panel conversion efficiency of 18%. Although panels rated at higher wattages are available through Sun Power and other various manufacturers, in general most manufacturers who produce commercially available solar panels produce a similar panel in the 200 to 250 watt range. This provides more manufacturer options to the public entity if they wish to pursue the proposed solar recommendation without losing significant system capacity.

The array system capacity was sized on available parking lot space at the existing facility. Estimated solar array generation was then calculated based on the National Renewable Energy Laboratory PVWatts Version 1.0 Calculator. In order to calculate the array generation an appropriate location with solar data on file must be selected. In addition the system DC rated kilowatt (kW) capacity must be inputted, a DC to AC de-rate factor, panel tilt angle, and array azimuth angle. The DC to AC de-rate factor is based on the panel nameplate DC rating, inverter and transformer efficiencies (95%), mismatch factor (98%), diodes and connections (100%), dc and ac wiring(98%, 99%), soiling, (95%), system availability (95%), shading (if applicable), and age(new/100%). The overall DC to AC de-rate factor has been calculated at an overall rating of 81%. The PVWatts Calculator program then calculates estimated system generation based on average monthly solar irradiance and user provided inputs. The monthly energy generation and offset electric costs from the PVWatts calculator is shown in the **Renewable/Distributed Energy Measures Calculation Appendix**.

The proposed solar array is qualified by the New Jersey Board of Public Utilities Net Metering Guidelines as a Class I Renewable Energy Source. These guidelines allow onsite customer generation using renewable energy sources such as solar and wind with a capacity of 2 megawatts (MW) or less. This limits a customer system design capacity to being a net user and not a net generator of electricity on an annual basis. Although these guidelines state that if a customer does net generate (produce more electricity than they use), the customer will be credited those kilowatt-hours generated to be carried over for future usage on a month to month basis. Then, on an annual basis if the customer is a net generator the customer will then be compensated by the utility the average annual PJM Grid LMP price per kilowatt-hour for the over generation. Due to the aforementioned legislation, the customer is at limited risk if they generate more than they use at times throughout the year. With the inefficiency of today's energy storage systems, such as batteries, the added cost of storage systems is not warranted and was not considered in the proposed design.

Direct purchase involves the school paying for 100% of the total project cost upfront via one of the methods noted in the Installation Funding Options section below. Calculations include a utility inflation rate as well as the degradation of the solar panels over time. Based on our calculations the following is the payback period:

Table 7
Financial Summary – Photovoltaic System

FINANCIAL SUMMARY - PHOTOVOLTAIC SYSTEM			
PAYMENT TYPE	SIMPLE PAYBACK	SIMPLE ROI	INTERNAL RATE OF RETURN
Direct Purchase	14.46 Years	6.9%	5.3%

*The solar energy measure is shown for reference in the executive summary Renewable Energy Measure (REM) table

Given the large amount of capital required by the owner to invest in a solar system through a Direct Purchase CEG does not recommend the owner pursue this route. It would be more advantageous for the owner to solicit Power Purchase Agreement (PPA) Providers who will own, operate, and maintain the system for a period of 15 years. During this time the PPA Provider would sell all of the electric generated by Solar Arrays to the owner at a reduced rate compared to their existing electric rate.

In addition to the Solar Analysis, CEG also conducted a review of the applicability of wind energy for the facility. Wind energy production is another option available through the Renewable Energy Incentive Program. Wind turbines of various types can be utilized to produce clean energy on a per building basis. Cash incentives are available per kWh of electric usage. Based on CEG's review of the applicability of wind energy for the facility, it was determined that the average wind speed is not adequate. Therefore, wind energy is not a viable option to implement.

IX. ENERGY PURCHASING AND PROCUREMENT STRATEGY

Load Profile:

Load Profile analysis was performed to determine the seasonal energy usage of the facility. Irregularities in the load profile will indicate potential problems within the facility. Consequently based on the profile a recommendation will be made to remedy the irregularity in energy usage. For this report, the facility's energy consumption data was gathered in table format and plotted in graph form to create the load profile. Refer to The Electric and Natural Gas Usage Profiles included within this report to reference the respective electricity and natural gas usage load profiles.

Electricity:

The electricity usage profile demonstrates a both a summer cooling and winter heating load profile. Historical usage is relatively steady throughout the year with an average monthly usage of 125,857kWh and an average monthly demand of 429kW. Largest consumption months were December, January – March, May and September.

The historical usage profile is beneficial and will allow for more competitive energy prices when shopping for alternative suppliers mainly due to the relatively steady year-long load profile. Third Party Supplier (TPS) electric commodity contracts that offer's a firm, fixed price for 100% of the facilities electric requirements and are lower than the PSE&G's BGS-FP default rate are recommended.

Natural Gas:

The Natural Gas Usage Profile demonstrates a very typical natural gas (heat load) profile. The summer months have little consumption. The average winter (Nov-Mar) consumption is 3,048 therms and the average summer (Apr-Oct) consumption is 396 therms. The largest consumption month is December at 4,204 therms.

This load profile will yield less favorable natural gas pricing when shopping for alternative suppliers. This is because the higher winter month consumption will yield higher pricing which will not be offset by similar summer month consumption. Nymex commodity pricing is generally higher in the winter months of November – March and lower in the summer months of April – October. Obtaining a flat load profile, (usage is similar each month), will yield optimum natural gas pricing when shopping for alternative suppliers. Third Party Supplier (TPS) natural gas commodity contracts that offer product structures that include either a firm, fixed price or market based rate with basis lock in for 100% of the facilities natural gas requirements are recommended due to current low market pricing.

Tariff Analysis:Electricity:

The facilities receive electric distribution service through Public Service Electric & Gas Company (PSE&G) on rate schedule LPLS (Large Power and Light Secondary). The facility is currently contracted with a Third Party Supplier (TPS) to provide electric commodity service. For electric supply (generation) service, the client has a choice to either use PSE&G's default service rate BGS-FP or contract with a Third Party Supplier (TPS) to supply electric.

Each year since 2002, the four New Jersey Electric Distribution Companies (EDCs) - Public Service Gas & Electric Company (PSE&G), Atlantic City Electric Company (ACE), Jersey Central Power & Light Company (JCP&L), and Rockland Electric Company (RECO) - have procured several billion dollars of electric supply to serve their Basic Generation Service (BGS) customers through a statewide auction process held in February.

BGS refers to the service of customers who are not served by a third party supplier or competitive retailer. This service is sometimes known as Standard Offer Service, Default Service, or Provider of Last Resort Service.

The Auction Process has consisted of two auctions that are held concurrently, one for larger customers on an hourly price plan (BGS-CIEP) and one for smaller commercial and residential customers on a fixed-price plan (BGS-FP). This facility's rate structure is based on the fixed-price plan (BGS-FP).

The utility, PSE&G will continue to be responsible for maintaining the existing network of wires, pipes and poles that make up the delivery system, which will serve all consumers, regardless of whom they choose to purchase their electricity or natural gas from. PSE&G's delivery service rate includes the following charges: Customer Service Charge, Distribution Charge (kWh and Demand), Societal Benefits Charge (SBC), and Securitization Transition Charge.

Natural Gas:

This facility currently receives natural gas distribution service through PSE&G on rate schedule LVG (Large Volume General Service) and has contracted a Third Party Supplier (TPS) to provide firm natural gas commodity service.

PSE&G provides basic gas supply service (BGSS) to customers who choose not to shop from a Third Party Supplier (TPS) for natural gas commodity. The option is essential to protect the reliability of service to consumers as well as protecting consumers if a third party supplier defaults or fails to provide commodity service. Please refer to the link below for a recap of natural gas BGSS charges from PSE&G for rate schedule LVG.

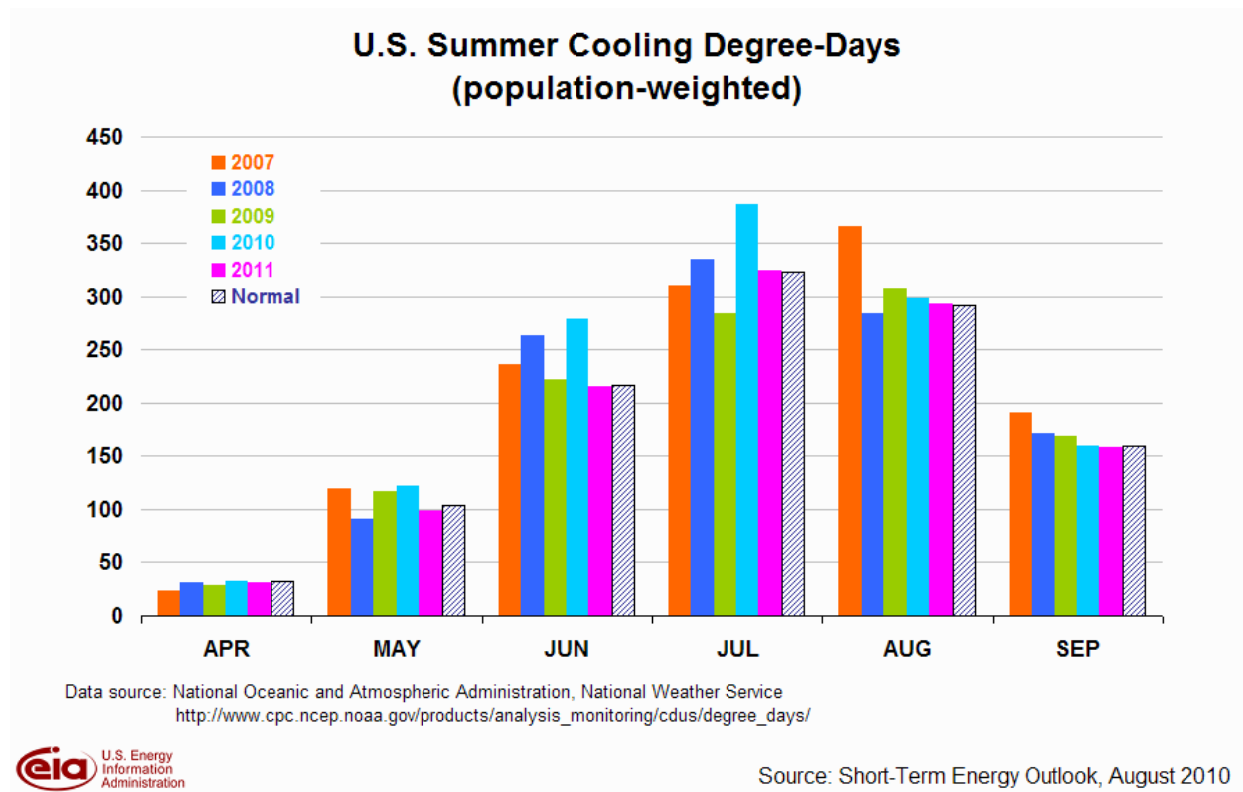
<http://www.pseg.com/companies/pseandg/schedules/pdf/commodity.pdf>

The utility, PSE&G is responsible for maintaining the existing network of wires, pipes and poles that make up the delivery system, which will serve all consumers, regardless of whom they choose to purchase their electricity or natural gas from. PSE&G's delivery service rate includes the following charges: Customer Service Charge, Distribution Charge, & Societal Benefits Charge (SBC).

Electric and Natural Gas Commodities Market Overview:

Current electricity and natural gas market pricing has remained relatively stable over the last year. Commodity pricing in 2008 marked historical highs in both natural gas and electricity commodity. Commodity pricing commencing spring of 2009 continuing through 2010, has decreased dramatically over 2008 historic highs and continues to be favorable for locking in long term (2-5 year) contracts with 3rd Party Supplier's for both natural gas and electricity supply requirements.

It is important to note that both natural gas and electric commodity market prices are moved by supply and demand, political conditions, market technicals and trader sentiment. This market is continuously changing. Energy commodity pricing is also correlated to weather forecasts. Because weather forecasts are dependable only in the short-term, prolonged temperature extremes can really cause extreme price swings.



Short Term Energy Outlook - US Energy Information Administration (10/13/2010):

U.S. Natural Gas Prices. The Henry Hub spot price averaged \$3.89 per MMBtu in September, \$0.43 per MMBtu lower than the average spot price in August. Prices are expected to remain below \$4 per MMBtu in October but rise to \$4.68 per MMBtu by January as space-heating demand increases this winter. EIA has revised its projections for natural gas prices downward through 2011. Expectations are now for a price of \$4.16 per MMBtu for the last quarter of 2010, \$0.27 per MMBtu (6 percent) lower than last month's Outlook, based on several weeks of strong inventory builds. Price expectations for 2011 are \$4.58 per MMBtu, which is \$0.18 per MMBtu (4 percent) lower than last month's forecast, primarily due to a stronger domestic production forecast.

Uncertainty over future natural gas prices is lower this year compared with last year at this time. Natural gas futures for December 2010 delivery for the 5-day period ending October 7 averaged \$4.07 per MMBtu, and the average implied volatility over the same period was 39 percent. This produced lower and upper bounds for the 95-percent confidence interval of \$3.09 per MMBtu and \$5.37 per MMBtu, respectively. At this time last year, the natural gas December 2009 futures contract averaged \$5.59 per MMBtu and implied volatility averaged 56 percent. The corresponding lower and upper limits of the 95-percent confidence interval were \$3.70 per MMBtu and \$8.50 per MMBtu.

U.S. Electricity Consumption. The summer months of 2010 were warmer than normal, especially in the regions east of the Mississippi. Cooling degree-days in the east during June, July, and August ranged from 26 percent (in the South Atlantic region) to 46 percent (in New England) higher than normal. In contrast, cooling degree-days in the East as a whole were 7 percent lower than normal during 2009. The large year-over-year increase in cooling degree-days should help push up total 2010 consumption of electricity by 5 percent over last year's level. Total consumption is expected to fall slightly in 2011 as forecast temperatures return to near-normal levels

U.S. Electricity Retail Prices. Although the average U.S. residential retail price of electricity fell by nearly 1 percent during the first half of 2010 compared with the same period last year, prices are expected to increase by 1.5 percent year-over-year during the second half of 2010. Higher generation fuel costs this year are expected to be passed through to retail consumers during 2011, pushing up residential prices by 1.4 percent next year.

Recommendations:

1. CEG recommends a continued aggregated approach for 3rd party commodity supply procurement strategies for both electric and natural gas supply service. Currently most Burlington Twp BOE facilities are procuring electric & natural gas supply from a TPS. By continuing to aggregate all sites in the BOE for electricity and natural gas procurement, the BOE could continue to realize a significant reduction in energy supply costs. Energy commodities are among the most volatile of all commodities, however at this point and time, energy is extremely competitive.

The below recommendations presented by CEG are based on current information provided by the BOE for its utility usage, any savings presented with these recommendations are estimates only based on that information. It is recommended that further analysis and review of more recent utility data and any current 3rd party supply contracts be performed prior to performing any of the presented recommendations.

Overall, after review of the utility consumption, billing, and current commodity pricing outlook, CEG recommends that the Burlington Twp BOE Facilities utilize the advisement of 3rd party unbiased Energy Consulting Firm experienced in the aggregation of facilities and procurement of retail natural gas and electricity commodity. The Energy Consulting Firm should incorporate a rational, defensible strategy for purchasing commodity in volatile markets based upon the following:

- Budgets that reflect sound market intelligence
 - An understanding of historical prices and trends
 - Awareness of seasonal opportunities (e.g. shoulder months)
 - Negotiation of fair contractual terms
 - An aggressive, market based price
2. CEG recommends that the Burlington Twp BOE consider utilizing a third party utility billing-auditing service to further analyze historical utility invoices such as water, sewer, electric and natural gas for incorrect billings and rate tariff optimization services. This service could provide refunds on potential over billings experienced by the BOE.
 3. CEG recommends that the Burlington Twp BOE explore Demand Response Programs that may be available in aggregate for its facilities. Demand response is the action of end users lowering their demand for electric (reducing consumption) in order to help balance supply and demand on the electric grid and ensure stability. The greatest need for demand response typically occurs during times of peak electricity demand, between the hours of 11 am and 6 pm, when extra strain is placed on the grid from situations such as increased air conditioning use on hot days or downed power lines resulting from a storm. Significant incentives are available for clients enrolled in demand response programs. It is strongly recommended that the BOE utilize an experienced 3rd party unbiased energy consulting firm prior to initiating any demand response programs. This is recommended due to the potential conflicts with existing and/or future electric supply service agreements and transparency created by the evaluation of current programs and incentives available.

X. INSTALLATION FUNDING OPTIONS

CEG has reviewed various funding options for the facility owner to utilize in subsidizing the costs for installing the energy conservation measures noted within this report. Below are a few alternative funding methods:

- i. *Energy Savings Improvement Program (ESIP)* – Public Law 2009, Chapter 4 authorizes government entities to make energy related improvements to their facilities and pay for the costs using the value of energy savings that result from the improvements. The “Energy Savings Improvement Program (ESIP)” law provides a flexible approach that can allow all government agencies in New Jersey to improve and reduce energy usage with minimal expenditure of new financial resources.
- ii. *Municipal Bonds* – Municipal bonds are a bond issued by a city or other local government, or their agencies. Potential issuers of municipal bonds include cities, counties, redevelopment agencies, school districts, publicly owned airports and seaports, and any other governmental entity (or group of governments) below the state level. Municipal bonds may be general obligations of the issuer or secured by specified revenues. Interest income received by holders of municipal bonds is often exempt from the federal income tax and from the income tax of the state in which they are issued, although municipal bonds issued for certain purposes may not be tax exempt.
- iii. *Power Purchase Agreement* – Public Law 2008, Chapter 3 authorizes contractor of up to fifteen (15) years for contracts commonly known as “power purchase agreements.” These are programs where the contracting unit (Owner) procures a contract for, in most cases, a third party to install, maintain, and own a renewable energy system. These renewable energy systems are typically solar panels, windmills or other systems that create renewable energy. In exchange for the third party’s work of installing, maintaining and owning the renewable energy system, the contracting unit (Owner) agrees to purchase the power generated by the renewable energy system from the third party at agreed upon energy rates.
- iv. *Pay For Performance* – The New Jersey Smart Start Pay for Performance program includes incentives based on savings resulted from implemented ECMs. The program is available for all buildings that were audited as part of the NJ Clean Energy’s Local Government Energy Audit Program. The facility’s participation in the program is assisted by an approved program partner. An “Energy Reduction Plan” is created with the facility and approved partner to show at least 15% reduction in the building’s current energy use. Multiple energy conservation measures implemented together are applicable toward the total savings of at least 15%. No more than 50% of the total energy savings can result from lighting upgrades / changes.

Total incentive is capped at 50% of the project cost. The program savings is broken down into three benchmarks; Energy Reduction Plan, Project Implementation, and Measurement and Verification. Each step provides additional incentives as the energy reduction project continues. The benchmark incentives are as follows:

1. Energy Reduction Plan – Upon completion of an energy reduction plan by an approved program partner, the incentive will grant \$0.10 per square foot between \$5,000 and \$50,000, and not to exceed 50% of the facility's annual energy expense. (Benchmark #1 is not provided in addition to the local government energy audit program incentive.)
 2. Project Implementation – Upon installation of the recommended measures along with the "Substantial Completion Construction Report," the incentive will grant savings per KWH or Therm based on the program's rates. Minimum saving must be 15%. (Example \$0.11 / kWh for 15% savings, \$0.12/ kWh for 17% savings, ... and \$1.10 / Therm for 15% savings, \$1.20 / Therm for 17% saving, ...) Increased incentives result from projected savings above 15%.
 3. Measurement and Verification – Upon verification 12 months after implementation of all recommended measures, that actual savings have been achieved, based on a completed verification report, the incentive will grant additional savings per kWh or Therm based on the program's rates. Minimum savings must be 15%. (Example \$0.07 / kWh for 15% savings, \$0.08/ kWh for 17% savings, ... and \$0.70 / Therm for 15% savings, \$0.80 / Therm for 17% saving, ...) Increased incentives result from verified savings above 15%.
- v. *Direct Install Program* – The New Jersey Clean Energy's Direct Install Program is a state funded program that targets small commercial and industrial facilities with peak demand of less than 200 kW. This turnkey program is aimed at providing owners a seamless, comprehensive process for analysis, equipment replacement and financial incentives to reduce consumption, lower utility costs and improve profitability. The program covers up to 60% of the cost for eligible upgrades including lighting, lighting controls, refrigeration, HVAC, motors, variable speed drives, natural gas and food service. Participating contractors (refer to www.njcleanenergy.com) conduct energy assessments in addition to your standard local government energy audit and install the cost-effective measures.
- vi. *Energy Efficiency and Conservation Block Grants* – The EECGB rebate provides supplemental funding up to \$20,000 for counties and local government entities to implement energy conservation measures. The EECGB funding is provided through the American Recovery and Reinvestment Act (ARRA). The local

government must be among the eligible local government entities listed on the NJ Clean Energy website as follows - <http://njcleanenergy.com/commercial-industrial/programs/eecbg-eligible-entities>. This program is limited to municipalities and counties that have not already received grants directly through the US department of Energy.

This incentive is provided in addition to the other NJ Clean Energy program funding. This program's incentive is considered the entity's capital and therefore can be applied to the LGEA program's requirements to implement the recommended energy conservation measures totaling at least 25% of the energy audit cost. Additional requirements of this program are as follows:

1. The entity must utilize additional funding through one or more of the NJ Clean Energy programs such as Smart Start, Direct Install, and Pay for Performance.
2. The EECBG funding in combination with other NJ Clean Energy programs may not exceed the total cost of the energy conservation measures being implemented.
3. Envelope measures are applicable only if recommended by the LGEA energy audit and if the energy audit was completed within the past 12 months.
4. New construction and previously installed measures are not eligible for the EECBG rebate.
5. Energy conservation measures eligible for the EECBG must fall within the list of approved energy conservation measures. The complete list of eligible measures and other program requirements are included in the "EECBG Complete Application Package." The application package is available on the NJ Clean Energy website - <http://njcleanenergy.com/commercial-industrial/programs/energy-efficiency-and-conservation-block-grants>.

CEG recommends the Owner review the use of the above-listed funding options in addition to utilizing their standard method of financing for facilities upgrades in order to fund the proposed energy conservation measures.

XI. ADDITIONAL RECOMMENDATIONS

The following recommendations include no cost/low cost measures, Operation & Maintenance (O&M) items, and water conservation measures with attractive paybacks. These measures are not eligible for the Smart Start Buildings incentives from the office of Clean Energy but save energy none the less.

- A. Chemically clean the condenser and evaporator coils periodically to optimize efficiency. Poorly maintained heat transfer surfaces can reduce efficiency 5-10%.
- B. Maintain all weather stripping on windows and doors.
- C. Clean all light fixtures to maximize light output.
- D. Provide more frequent air filter changes to decrease overall system power usage and maintain better IAQ.
- E. Confirm that outside air economizers on the rooftop units are functioning properly to take advantage of free cooling and avoid excess outside air during occupied periods.

In addition to the recommendations above, implementing Retro-Commissioning would be beneficial for this facility. Retro-Commissioning is a means to verify your current equipment is operating at its designed efficiency, capacity, airflow, and overall performance. Retro-Commissioning provides valuable insight into systems or components not performing correctly or efficiently. The commissioning process defines the original system design parameters and recommends revisions to the current system operating characteristics.

XII. ENERGY AUDIT ASSUMPTIONS

The assumptions utilized in this energy audit include but are not limited to following:

- A. Cost Estimates noted within this report are based on industry accepted costing data such as RS MeansTM Cost Data, contractor pricing and engineering estimates. All cost estimates for this level of auditing are +/- 20%. Prevailing wage rates for the specified region has been utilized to calculate installation costs. The cost estimates indicated within this audit should be utilized by the owner for prioritizing further project development post the energy audit. Project development would include investment grade auditing and detailed engineering.
- B. Energy savings noted within this audit are calculated utilizing industry standard procedures and accepted engineering assumptions. For this level of auditing, energy savings are not guaranteed.
- C. Information gathering for each facility is strongly based on interviews with operations personnel. Information dependent on verbal feedback is used for calculation assumptions including but not limited to the following:
 - a. operating hours
 - b. equipment type
 - c. control strategies
 - d. scheduling
- D. Information contained within the major equipment list is based on the existing owner documentation where available (drawings, O&M manuals, etc.). If existing owner documentation is not available, catalog information is utilized to populate the required information.
- E. Equipment incentives and energy credits are based on current pricing and status of rebate programs. Rebate availability is dependent on the individual program funding and applicability.
- F. Equipment (HVAC, Plumbing, Electrical, & Lighting) noted within an ECM recommendation is strictly noted as a **basis for calculation** of energy savings. The owner should use this equipment information as a benchmark when pursuing further investment grade project development and detailed engineering for specific energy conservation measures.

Utility bill annual averages are utilized for calculation of all energy costs unless otherwise noted. Accuracy of the utility energy usage and costs are based on the information provided. Utility information including usage and costs is estimated where incomplete data is provided.

ECM COST & SAVINGS BREAKDOWN

CONCORD ENGINEERING GROUP

Burlington Township BOE - Fountain Woods Elementary School

ECM ENERGY AND FINANCIAL COSTS AND SAVINGS SUMMARY															
ECM NO.	DESCRIPTION	INSTALLATION COST				YEARLY SAVINGS			ECM LIFETIME	LIFETIME ENERGY SAVINGS	LIFETIME MAINTENANCE SAVINGS	LIFETIME ROI	SIMPLE PAYBACK	INTERNAL RATE OF RETURN	NET PRESENT VALUE (NPV)
		MATERIAL	LABOR	REBATES, INCENTIVES	NET INSTALLATION COST	ENERGY	MAINT. / SREC	TOTAL		(Yearly Saving * ECM Lifetime)	(Yearly Maint Saving * ECM Lifetime)	(Lifetime Savings - Net Cost) / (Net Cost)	(Net cost / Yearly Savings)	$\sum_{n=0}^N \frac{C_n}{(1 + IRR)^n}$	$\sum_{n=0}^N \frac{C_n}{(1 + IRR)^n}$
		(\$)	(\$)	(\$)	(\$)	(\$/Yr)	(\$/Yr)	(\$/Yr)		(\$)	(\$)	(%)	(Yr)	(\$)	(\$)
ECM #1	Lighting Upgrade - Gymnasium and Interior Spaces	\$5,328	\$0	\$2,000	\$3,328	\$2,521	\$0	\$2,521	15	\$37,818	\$0	1036.4%	1.3	75.74%	\$26,770.12
ECM #2	Lighting Occupancy and Daylight Sensors	\$16,215	\$0	\$3,380	\$12,835	\$4,455	\$0	\$4,455	15	\$66,818	\$0	420.6%	2.9	34.29%	\$40,343.33
ECM #3	CRT Monitor Replacement	\$2,100	\$0	\$0	\$2,100	\$360	\$0	\$360	15	\$5,394	\$0	156.9%	5.8	15.03%	\$2,192.78
ECM #4	NEMA Premium Efficiency Motors	\$31,220	\$0	\$1,140	\$30,080	\$2,068	\$0	\$2,068	15	\$31,017	\$0	3.1%	14.5	0.39%	(\$5,394.61)
ECM #5	VFDs on Cooling Tower Fans	\$23,500	\$0	\$0	\$23,500	\$1,684	\$0	\$1,684	15	\$25,262	\$0	7.5%	14.0	0.92%	(\$3,395.29)
ECM #6	Kitchen Hood Controls	\$22,900	\$0	\$775	\$22,125	\$1,400	\$0	\$1,400	15	\$20,993	\$0	-5.1%	15.8	-0.65%	(\$5,417.47)
ECM #7	Solar Domestic Hot Water Heating System	\$175,000	\$0	\$0	\$175,000	\$10,121	\$0	\$10,121	15	\$151,815	\$0	-13.2%	17.3	-1.73%	(\$54,176.26)
ECM #8	Replace Water Cooled Chiller	\$100,000	\$0	\$3,000	\$97,000	\$2,051	\$15	\$2,065	15	\$30,982	\$219	-68.1%	47.0	-11.75%	(\$72,342.54)
REM RENEWABLE ENERGY AND FINANCIAL COSTS AND SAVINGS SUMMARY															
REM #1	263 kW Solar PV System	\$2,366,010	\$0	\$0	\$2,366,010	\$49,327	\$114,333	\$163,660	15	\$2,454,895	\$1,714,997	3.8%	14.5	0.46%	(\$412,251.53)

Notes: 1) The variable Cn in the formulas for Internal Rate of Return and Net Present Value stands for the cash flow during each period.
2) The variable DR in the NPV equation stands for Discount Rate
3) For NPV and IRR calculations: From n=0 to N periods where N is the lifetime of ECM and Cn is the cash flow during each period.



Concord Engineering Group, Inc.

520 BURNT MILL ROAD
VOORHEES, NEW JERSEY 08043
PHONE: (856) 427-0200
FAX: (856) 427-6508

SmartStart Building Incentives

The NJ SmartStart Buildings Program offers financial incentives on a wide variety of building system equipment. The incentives were developed to help offset the initial cost of energy-efficient equipment. The following tables show the current available incentives as of February, 2010:

Electric Chillers

Water-Cooled Chillers	\$12 - \$170 per ton
Air-Cooled Chillers	\$8 - \$52 per ton

Energy Efficiency must comply with ASHRAE 90.1-2004

Gas Cooling

Gas Absorption Chillers	\$185 - \$400 per ton
Gas Engine-Driven Chillers	Calculated through custom measure path)

Desiccant Systems

\$1.00 per cfm – gas or electric

Electric Unitary HVAC

Unitary AC and Split Systems	\$73 - \$93 per ton
Air-to-Air Heat Pumps	\$73 - \$92 per ton
Water-Source Heat Pumps	\$81 per ton
Packaged Terminal AC & HP	\$65 per ton
Central DX AC Systems	\$40- \$72 per ton
Dual Enthalpy Economizer Controls	\$250
Occupancy Controlled Thermostat (Hospitality & Institutional Facility)	\$75 per thermostat

Energy Efficiency must comply with ASHRAE 90.1-2004

Ground Source Heat Pumps

Closed Loop & Open Loop	\$450 per ton, EER \geq 16 \$600 per ton, EER \geq 18 \$750 per ton, EER \geq 20
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Energy Efficiency must comply with ASHRAE 90.1-2004

Gas Heating

Gas Fired Boilers < 300 MBH	\$300 per unit
Gas Fired Boilers \geq 300 - 1500 MBH	\$1.75 per MBH
Gas Fired Boilers \geq 1500 - \leq 4000 MBH	\$1.00 per MBH
Gas Fired Boilers > 4000 MBH	(Calculated through Custom Measure Path)
Gas Furnaces	\$300 - \$400 per unit, AFUE \geq 92%

Variable Frequency Drives

Variable Air Volume	\$65 - \$155 per hp
Chilled-Water Pumps	\$60 per hp
Compressors	\$5,250 to \$12,500 per drive

Natural Gas Water Heating

Gas Water Heaters \leq 50 gallons	\$50 per unit
Gas-Fired Water Heaters > 50 gallons	\$1.00 - \$2.00 per MBH
Gas-Fired Booster Water Heaters	\$17 - \$35 per MBH
Gas Fired Tankless Water Heaters	\$300 per unit

Prescriptive Lighting

Retro fit of T12 to T-5 or T-8 Lamps w/Electronic Ballast in Existing Facilities	\$10 per fixture (1-4 lamps)
Replacement of T12 with new T-5 or T-8 Lamps w/Electronic Ballast in Existing Facilities	\$25 per fixture (1-2 lamps) \$30 per fixture (3-4 lamps)
Replacement of incandescent with screw-in PAR 38 or PAR 30 (CFL) bulb	\$7 per bulb
T-8 reduced Wattage (28w/25w 4', 1-4 lamps) Lamp & ballast replacement	\$10 per fixture
Hard-Wired Compact Fluorescent	\$25 - \$30 per fixture
Metal Halide w/Pulse Start	\$25 per fixture
LED Exit Signs	\$10 - \$20 per fixture
T-5 and T-8 High Bay Fixtures	\$16 - \$284 per fixture
HID \geq 100w Retrofit with induction lamp, power coupler and generator (must be 30% less watts/fixture than HID system)	\$50 per fixture
HID \geq 100w Replacement with new HID \geq 100w	\$70 per fixture
LED Refrigerator/Freezer case lighting replacement of fluorescent in medium and low temperature display case	\$42 per 5 foot \$65 per 6 foot

Lighting Controls – Occupancy Sensors

Wall Mounted	\$20 per control
Remote Mounted	\$35 per control
Daylight Dimmers	\$25 per fixture
Occupancy Controlled hi-low Fluorescent Controls	\$25 per fixture controlled

Lighting Controls – HID or Fluorescent Hi-Bay Controls

Occupancy hi-low	\$75 per fixture controlled
Daylight Dimming	\$75 per fixture controlled
Daylight Dimming - office	\$50 per fixture controlled

Premium Motors

Three-Phase Motors	\$45 - \$700 per motor
Fractional HP Motors Electronic Communicated Motors (replacing shaded pole motors in refrigerator/freezer cases)	\$40 per electronic communicated motor

Other Equipment Incentives

Performance Lighting	\$1.00 per watt per SF below program incentive threshold, currently 5% more energy efficient than ASHRAE 90.1- 2004 for New Construction and Complete Renovation
Custom Electric and Gas Equipment Incentives	not prescriptive
Custom Measures	\$0.16 KWh and \$1.60/Therm of 1st year savings, or a buy down to a 1 year payback on estimated savings. Minimum required savings of 75,000 KWh or 1,500 Therms and a IRR of at least 10%.
Multi Measures Bonus	15%



STATEMENT OF ENERGY PERFORMANCE

Fountain Woods Elementary School

Building ID: 2475035
For 12-month Period Ending: February 28, 2010¹
Date SEP becomes ineligible: N/A

Date SEP Generated: November 05, 2010

Facility

Fountain Woods Elementary School
601 Fountain Avenue
Burlington, NJ 08016

Facility Owner

Burlington Board of Education
700 Jacksonville Road Hopkins Building
Burlington, NJ 08016

Primary Contact for this Facility

Mary Ann Bell
700 Jacksonville Road Hopkins Building
Burlington, NJ 08016

Year Built: 1999

Gross Floor Area (ft²): 131,000

Energy Performance Rating² (1-100) 35

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	5,153,099
Natural Gas (kBtu) ⁴	1,801,457
Total Energy (kBtu)	6,954,556

Energy Intensity⁵

Site (kBtu/ft ² /yr)	53
Source (kBtu/ft ² /yr)	146

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	881
---	-----

Electric Distribution Utility

Public Service Elec & Gas Co

National Average Comparison

National Average Site EUI	47
National Average Source EUI	128
% Difference from National Average Source EUI	14%
Building Type	K-12 School

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Meets Industry Standards⁶ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional

Michael Fischette
520 South Burnt Mill Road
Voorhees, NJ 08043

Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Natural Gas values in units of volume (e.g. cubic feet) are converted to kBtu with adjustments made for elevation based on Facility zip code.
5. Values represent energy intensity, annualized to a 12-month period.
6. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.


ENERGY STAR® Data Checklist for Commercial Buildings

In order for a building to qualify for the ENERGY STAR, a Professional Engineer (PE) or a Registered Architect (RA) must validate the accuracy of the data underlying the building's energy performance rating. This checklist is designed to provide an at-a-glance summary of a property's physical and operating characteristics, as well as its total energy consumption, to assist the PE or RA in double-checking the information that the building owner or operator has entered into Portfolio Manager.

Please complete and sign this checklist and include it with the stamped, signed Statement of Energy Performance.

NOTE: You must check each box to indicate that each value is correct, OR include a note.

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	<input checked="" type="checkbox"/>
Building Name	Fountain Woods Elementary School	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		<input type="checkbox"/>
Type	K-12 School	Is this an accurate description of the space in question?		<input type="checkbox"/>
Location	601 Fountain Avenue, Burlington, NJ 08016	Is this address accurate and complete? Correct weather normalization requires an accurate zip code.		<input type="checkbox"/>
Single Structure	Single Facility	Does this SEP represent a single structure? SEPs cannot be submitted for multiple-building campuses (with the exception of acute care or children's hospitals) nor can they be submitted as representing only a portion of a building		<input type="checkbox"/>
Fountain Woods (K-12 School)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	<input checked="" type="checkbox"/>
Gross Floor Area	131,000 Sq. Ft.	Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.		<input type="checkbox"/>
Open Weekends?	No	Is this building normally open at all on the weekends? This includes activities beyond the work conducted by maintenance, cleaning, and security personnel. Weekend activity could include any time when the space is used for classes, performances or other school or community activities. If the building is open on the weekend as part of the standard schedule during one or more seasons, the building should select ?yes? for open weekends. The ?yes? response should apply whether the building is open for one or both of the weekend days.		<input type="checkbox"/>
Number of PCs	229 (Default)	Is this the number of personal computers in the K12 School?		<input type="checkbox"/>
Number of walk-in refrigeration/freezer units	1 (Default)	Is this the total number of commercial walk-in type freezers and coolers? These units are typically found in storage and receiving areas.		<input type="checkbox"/>
Presence of cooking facilities	Yes	Does this school have a dedicated space in which food is prepared and served to students? If the school has space in which food for students is only kept warm and/or served to students, or has only a galley that is used by teachers and staff then the answer is "no".		<input type="checkbox"/>
Percent Cooled	90 %	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		<input type="checkbox"/>
Percent Heated	90 %	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		<input type="checkbox"/>
Months	10(Optional)	Is this school in operation for at least 8 months of the year?		<input type="checkbox"/>

High School?	No	Is this building a high school (teaching grades 10, 11, and/or 12)? If the building teaches to high school students at all, the user should check 'yes' to 'high school'. For example, if the school teaches to grades K-12 (elementary/middle and high school), the user should check 'yes' to 'high school'.	<div>APPENDIX C</div> <div>Page 3 of 7</div> <div></div>
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ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Public Service Elec & Gas Co

Fuel Type: Electricity		
Meter: Electric (kWh (thousand Watt-hours)) Space(s): Entire Facility Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
02/01/2010	02/28/2010	139,027.00
01/01/2010	01/31/2010	135,383.00
12/01/2009	12/31/2009	141,665.00
11/01/2009	11/30/2009	119,264.00
10/01/2009	10/31/2009	119,083.00
09/01/2009	09/30/2009	147,970.00
08/01/2009	08/31/2009	96,733.00
07/01/2009	07/31/2009	81,745.00
06/01/2009	06/30/2009	121,330.00
05/01/2009	05/31/2009	144,562.00
04/01/2009	04/30/2009	114,226.00
03/01/2009	03/31/2009	149,299.00
Electric Consumption (kWh (thousand Watt-hours))		1,510,287.00
Electric Consumption (kBtu (thousand Btu))		5,153,099.24
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		5,153,099.24
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		<input type="checkbox"/>
Fuel Type: Natural Gas		
Meter: Gas (therms) Space(s): Entire Facility		
Start Date	End Date	Energy Use (therms)
02/01/2010	02/28/2010	4,052.47
01/01/2010	01/31/2010	3,565.28
12/01/2009	12/31/2009	4,204.14
11/01/2009	11/30/2009	886.87
10/01/2009	10/31/2009	417.69
09/01/2009	09/30/2009	264.83
08/01/2009	08/31/2009	99.02
07/01/2009	07/31/2009	133.13
06/01/2009	06/30/2009	253.06
05/01/2009	05/31/2009	595.75

04/01/2009	04/30/2009	1,009.91	APPENDIX C
03/01/2009	03/31/2009	2,532.42	Page 5 of 7
Gas Consumption (therms)		18,014.57	
Gas Consumption (kBtu (thousand Btu))		1,801,457.00	
Total Natural Gas Consumption (kBtu (thousand Btu))		1,801,457.00	
Is this the total Natural Gas consumption at this building including all Natural Gas meters?		<input type="checkbox"/>	

Additional Fuels	
Do the fuel consumption totals shown above represent the total energy use of this building? Please confirm there are no additional fuels (district energy, generator fuel oil) used in this facility.	<input type="checkbox"/>

On-Site Solar and Wind Energy	
Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.	<input type="checkbox"/>

Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA that signed and stamped the SEP.)

Name: _____ Date: _____

Signature: _____

Signature is required when applying for the ENERGY STAR.

FOR YOUR RECORDS ONLY. DO NOT SUBMIT TO EPA.

Page 6 of 7

Please keep this Facility Summary for your own records; do not submit it to EPA. Only the Statement of Energy Performance (SEP), Data Checklist and Letter of Agreement need to be submitted to EPA when applying for the ENERGY STAR.

Facility

Fountain Woods Elementary School
601 Fountain Avenue
Burlington, NJ 08016

Facility Owner

Burlington Board of Education
700 Jacksonville Road Hopkins Building
Burlington, NJ 08016

Primary Contact for this Facility

Mary Ann Bell
700 Jacksonville Road Hopkins Building
Burlington, NJ 08016

General Information

Fountain Woods Elementary School	
Gross Floor Area Excluding Parking: (ft ²)	131,000
Year Built	1999
For 12-month Evaluation Period Ending Date:	February 28, 2010

Facility Space Use Summary

Fountain Woods	
Space Type	K-12 School
Gross Floor Area(ft ²)	131,000
Open Weekends?	No
Number of PCs ^d	229
Number of walk-in refrigeration/freezer units ^d	1
Presence of cooking facilities	Yes
Percent Cooled	90
Percent Heated	90
Months ^o	10
High School?	No
School District ^o	Burlington

Energy Performance Comparison

Performance Metrics	Evaluation Periods		Comparisons		
	Current (Ending Date 02/28/2010)	Baseline (Ending Date 02/28/2010)	Rating of 75	Target	National Average
Energy Performance Rating	35	35	75	N/A	50
Energy Intensity					
Site (kBtu/ft ²)	53	53	37	N/A	47
Source (kBtu/ft ²)	146	146	100	N/A	128
Energy Cost					
\$/year	\$ 250,458.50	\$ 250,458.50	\$ 172,523.40	N/A	\$ 220,595.96
\$/ft ² /year	\$ 1.91	\$ 1.91	\$ 1.32	N/A	\$ 1.68
Greenhouse Gas Emissions					
MtCO ₂ e/year	881	881	607	N/A	776
kgCO ₂ e/ft ² /year	7	7	5	N/A	6

More than 50% of your building is defined as K-12 School. Please note that your rating accounts for all of the spaces listed. The National Average column presents energy performance data your building would have if your building had an average rating of 50.

Notes:

o - This attribute is optional.

d - A default value has been supplied by Portfolio Manager.

2010

Portfolio Manager Building ID: 2475035

**This building's
score**

35

1

50

100

Most Efficient

Buildings with a score of 75 or higher may qualify for EPA's ENERGY STAR.

Date of certification



MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington Township Board of Education - Fountain Elementary

Rooftop / AC Units

Tag	RHP-1	AHU-B1	HRV-B1
Unit Type	Rooftop Unit Heat Pump	Outdoor Air Handler	Energy Recovery Ventilator
Qty	1	1	1
Location	Rooftop	Rooftop	Roof
Area Served	Media Center	HRV-B1	AHU-B1 / Cafeteria
Manufacturer	McQuay	McQuay	Greenheck
Model #	RWD 0950-B-E-T	RDS708BY	ERV-521S-D-ES
Serial #	980905501001	FB0U011200899 03	01L10098
Cooling Type	DX	-	Intake 1.5 HP/ Exhaust .75 HP
Cooling Capacity (Tons)	8 Tons	3 HP Motor	-
Cooling Efficiency (SEER/EER)	12.5 EER	-	-
Heating Type	Hot Water	-	-
Heating Input (MBH)	173 MBH	-	-
Efficiency	4.2 COP	-	-
Fuel	R-22	-	-
Approx Age	12	12	12
ASHRAE Service Life	15	15	15
Remaining Life	3	3	3
Comments	460/3/60	460/3/60	

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington Township Board of Education - Fountain Elementary

Rooftop / AC Units

Tag	HRV-8	HRV-9	HRV-A2
Unit Type	Energy Recovery Ventilator	Energy Recovery Ventilator	Energy Recovery Ventilator
Qty	1	1	1
Location	Roof Above Area C	Roof Above Area C	Roof above Corridor C133
Area Served	Art/Music Area	Art/Music Area	Area A Classrooms
Manufacturer	Greenheck	Greenheck	Greenheck
Model #	ERV-521S-B	ERV-361S-R	ERV-361S-B-ES
Serial #	96J03913	98J04659	01L12738
Cooling Type	Intake 2.5 HP	Intake 1/3 HP Exhaust 1/4 HP	Intake 1 HP Exhaust 3/4 HP
Cooling Capacity (Tons)	-	-	-
Cooling Efficiency (SEER/EER)	-	-	-
Heating Type	-	-	-
Heating Input (MBH)	-	-	-
Efficiency	-	-	-
Fuel	-	-	-
Approx Age	12	12	12
ASHRAE Service Life	15	15	15
Remaining Life	3	3	3
Comments			

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington Township Board of Education - Fountain Elementary

Rooftop / AC Units

Tag	HRV-A1	AHU-2	AHU-1
Unit Type	Energy Recovery Ventilator	Indoor Air Handling Unit	Indoor Air Handling Unit
Qty	1	1	1
Location	Roof Above Area A	Mechanical Room	Mechanical Room
Area Served	Music/Art	Multi-Purpose Room	Cafeteria
Manufacturer	Greenheck	HAAKON Industries	HAAKON Industries
Model #	ERV-251S-B-ES	AIRPAK	AIRPAK
Serial #	01L12756	98-7156-02	98-7156-01
Cooling Type	Intake 1/3 HP Exhaust 1/3 HP	Intake 15 HP Return 10 HP	Intake 15 HP Return 10 HP
Cooling Capacity (Tons)	-	-	-
Cooling Efficiency (SEER/EER)	-	-	-
Heating Type	-	-	-
Heating Input (MBH)	-	-	-
Efficiency	-	-	-
Fuel	-	-	-
Approx Age	12	12	12
ASHRAE Service Life	15	15	15
Remaining Life	3	3	3
Comments			

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington Township Board of Education - Fountain Elementary

Boilers

Tag	Boiler-1,2 & 3	-	-
Unit Type	Condensing Boiler	-	-
Qty	3	-	-
Location	Mechanical Room	-	-
Area Served	Fountain Woods	-	-
Manufacturer	Aerco	-	-
Model #	KC Series	-	-
Serial #	G-98-786	-	-
Input Capacity (MBH)	1,000 MBH	-	-
Rated Output Capacity (MBH)	860-930 MBH	-	-
Approx. Efficiency %	86%-93%	-	-
Fuel	Gas	-	-
Approx Age	12	-	-
ASHRAE Service Life	30	-	-
Remaining Life	18	-	-
Comments	Modulating	-	-

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington Township Board of Education - Fountain Elementary

Chiller

Tag	CH-1	-	-
Unit Type	Chiller	-	-
Qty	1	-	-
Location	Mechanical Room	-	-
Area Served	AHUs and Unit Ventilators	-	-
Manufacturer	McQuay	-	-
Model #	WHR-090EW	-	-
Serial #	58L0020300	-	-
Refrigerant	R-22	-	-
Cooling Capacity (Tons)	100 Tons	-	-
Cooling Efficiency (KW/Ton)	0.63 KW/Ton IPLV	-	-
Volts / Phase / Hz	460/3/60	-	-
Fuel	-	-	-
Chilled Water GPM / ΔT	180 GPM / 10°F	-	-
Condenser Water GPM / ΔT	270 GPM / 10°F	-	-
Approx Age	12	-	-
ASHRAE Service Life	23	-	-
Remaining Life	11	-	-
Comments	-	-	-

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington Township Board of Education - Fountain Elementary

Cooling Tower

Tag	CT-1	CT-2	-
Unit Type	Cooling Tower	Cooling Tower	-
Qty	1	1	-
Location	Outside	Outside	-
Area Served	Chilled Water loop	Chilled Water loop	-
Manufacturer	BAC	BAC	-
Model #	VTL-227-OCR	VTL-116-LJR	-
Serial #	R97121111	U013504301	-
Rated Flow GPM	761 GPM	310 GPM	-
EWI / LWT	95.13 / 85	93 / 83	-
Motor HP	30 / 7.5	15 / 5	-
Electrical	460/3/60	460/3/60	-
Chilled Water GPM / ΔT	761 GPM / 10°F	310 GPM / 10°F	-
Condenser Water GPM / ΔT	-	-	-
Approx Age	12	8	-
ASHRAE Service Life	22	22	-
Remaining Life	10	10	-
Comments	-	-	-

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington Township Board of Education - Fountain Elementary

Domestic Water Heaters

Tag	DHWG-1	DHWG-2	-
Unit Type	Condensing Domestic Hot Water	Hot Water Heater	-
Qty	1	1	-
Location	Mechanical Room	Mechanical Room	-
Area Served	Fountain Woods	Fountain Woods	-
Manufacturer	Aerco	State	-
Model #	KC Series	SBF75 120 NE2	-
Serial #	G-98-786	B99106860	-
Size (Gallons)	23 Gallons	75 Gallons	-
Input Capacity (MBH/KW)	1,000 MBH	120 MBH	-
Recovery (Gal/Hr)	-	109.1 Gal/Hr	-
Efficiency %	93%	80%	-
Fuel	Gas	Gas	-
Approx Age	12	14	-
ASHRAE Service Life	12	12	-
Remaining Life	0	(2)	-
Comments	Modulating	-	-

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington Township Board of Education - Fountain Elementary

Pumps

Tag	HWP-1,2	LWP-1,2	CWP-1,2
Unit Type	End Suction Pump	Split-Coupled Vertical In-Line Centrifugal	End Suction Pump
Qty	2	2	2
Location	Mechanical Room	Mechanical Room	Mechanical Room
Area Served	Hot Water Loop	Loop Water	Chilled Water
Manufacturer	Aurora	Aurora	Aurora
Model #	98-14809-2	98-14810-1	98-14808-1
Serial # / Type	344A BF	342A BF	344A BF
Horse Power	7.5 HP	15 HP	15 HP
Flow	269 GPM @ 60 FT HD	491 GPM @ 80 FT HD	788 GPM @ 55 FT HD
Motor Info	US Electric Motors	US Electric Motors	Toshiba International
Electrical Power	460/3/60	460/3/60	460/3/60
RPM	1750 RPM	1750 RPM	1750 RPM
Motor Efficiency %	88.5%	87.5%	93%
Approx Age	12	12	12
ASHRAE Service Life	20	20	20
Remaining Life	8	8	8
Comments	Constant Volume, 200 GPM Existing		761 GPM Existing

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington Township Board of Education - Fountain Elementary

Pumps

Tag	CWP-3,4	LWP-3,4	CHWP-1,2
Unit Type	End Suction Pump	Split-Coupled Vertical In-Line Centrifugal	DBL Suction
Qty	2	2	2
Location	Mechanical Room	Mechanical Room	Mechanical Room
Area Served	Chilled Water Loop	Loop Water	Chilled Water Loop
Manufacturer	Aurora	Aurora	Aurora
Model #	01-380601-1	01-380584-1	-
Serial #	344A BF	344A BF	342A BF
Horse Power	7.5 HP	10 HP	5 HP
Flow	270 GPM @ 50 FT HD	297 GPM @ 80 FT HD	190 GPM @ 50 FT HD
Motor Info	US Electric Motors	US Electric Motors	US Electric Motors
Electrical Power	460/3/60	460/3/60	460/3/60
RPM	1750 RPM	1750 RPM	1750 RPM
Motor Efficiency %	88.5%	89.5%	85.5%
Approx Age	8	8	12
ASHRAE Service Life	20	20	20
Remaining Life	12	12	8
Comments			180 GPM Existing

Investment Grade Lighting Audit

APPENDIX E-1
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CEG Job #: 9C10054

Project: Burlington Township Schools

Address: 601 Fountain Avenue, Burlington, NJ 08016

Bldg. Sq. Ft. 131,000 SF

Fountain Woods Elementary School

KWH COST: **\$0.151**

ECM #1: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING										SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback	
232.21	C131 Work Room	2600	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.34	894.4	\$135.05	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
232.21	C130 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
232.21	C128 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
232.21	C129 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
232.21	C127 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
232.21	C125 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1,118.0	\$168.82	5	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
232.21	C126 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
232.21	C124 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
232.21	Boys' Restroom	3200	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	275.2	\$41.56	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
227.21		3200	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	
221.41		3200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic Lens	58	0.06	185.6	\$28.03	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00	

Investment Grade Lighting Audit

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221.34	C121 Elevator Equipment	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.06	69.6	\$10.51	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Girls' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	58	0.23	742.4	\$112.10	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	Electric Closet	1200	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No	58	0.17	208.8	\$31.53	3	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C118 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C116 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C115 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C117 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C114 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C113 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

Investment Grade Lighting Audit

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232.21	C112 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1,118.0	\$168.82	5	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Girls' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	742.4	\$112.10	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.14	C110 Custodian Closet	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.06	69.6	\$10.51	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Boys' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	742.4	\$112.10	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C108 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C106 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C105 Classroom	2600	19	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	4,248.4	\$641.51	19	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C103 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C104 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

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13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C102 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	C101 Work Room	2600	2	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	301.6	\$45.54	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	A104 Music Room	2600	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.03	2,683.2	\$405.16	12	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	A106 & 107 Practice Room	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1,118.0	\$168.82	5	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	A100 Choral Room	2600	13	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	86	1.12	2,906.8	\$438.93	13	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C322 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C320 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Boys' Restroom	3200	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	275.2	\$41.56	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		3200	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.06	185.6	\$28.03	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.14	C323 Elevator Equipment	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No	58	0.06	69.6	\$10.51	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Girls' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	742.4	\$112.10	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	Electric Closet	1200	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.17	208.8	\$31.53	3	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21		2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

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227.21	C314 Classroom	2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C319 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C312 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C317 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C310 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1,118.0	\$168.82	5	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Girls' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	742.4	\$112.10	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Boys' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	742.4	\$112.10	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C308 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

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232.21	C306 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C304 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C302 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C305 Classroom	2600	19	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	4,248.4	\$641.51	19	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C303 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	A127 Classroom	2600	18	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	86	1.55	4,024.8	\$607.74	18	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	A124 Classroom	2600	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.03	2,683.2	\$405.16	12	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	A123 Classroom	2600	15	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.29	3,354.0	\$506.45	15	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	A122 Classroom	2600	15	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.29	3,354.0	\$506.45	15	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Faculty Room	2600	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.03	2,683.2	\$405.16	12	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	6	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.35	904.8	\$136.62	6	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

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232.21	Office	2600	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.69	1,788.8	\$270.11	8	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Office	2600	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	603.2	\$91.08	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	A118 Conference Room	2600	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	603.2	\$91.08	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	A115 Mechanical room	1200	10	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.58	696.0	\$105.10	10	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	Electric Room	4400	11	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.64	2,807.2	\$423.89	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.44	Electric Room Stairway	4400	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.17	765.6	\$115.61	3	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.44	Stair A	4400	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.17	765.6	\$115.61	3	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	A109 Storage	1200	8	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.46	556.8	\$84.08	8	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
766	Gym	3000	20	1	400w MH Down Light, Prismatic Lens, Quartz Restrike	465	9.30	27,900.0	\$4,212.90	20	4	2x4 54w T5HO 4 Lamp w/Reflective Lens, Wire Cage	236	4.72	14160	\$2,138.16	\$240.00	\$4,800.00	4.58	13740	\$2,074.74	2.31
232.21	A111 Office	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$67.53	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.44	B100 Stage	2600	5	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.29	754.0	\$113.85	5	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	B103 Tables	2600	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.12	301.6	\$45.54	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Cafeteria	2600	42	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	4.37	11,356.8	\$1,714.88	42	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.33	B132 Cafeteria	2600	32	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	58	1.86	4,825.6	\$728.67	32	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Kitchen	2600	10	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.86	2,236.0	\$337.64	10	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	B130	2600	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.17	452.4	\$68.31	3	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Receiving	2600	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.26	670.8	\$101.29	3	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Kitchen Office	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$67.53	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.21	Wash Area	2600	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Acrylic Lens	58	0.23	603.2	\$91.08	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Kitchen Restroom	1200	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	139.2	\$21.02	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21		3200	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	332.8	\$50.25	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

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227.21	Boys' Restroom	3200	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.06	185.6	\$28.03	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Girls' Restroom	3200	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	332.8	\$50.25	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		3200	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.06	185.6	\$28.03	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.14	Custodian Closet	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.06	69.6	\$10.51	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
231.33	Media Center	2600	36	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	3.10	8,049.6	\$1,215.49	36	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
211.47		2600	4	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Indirect	30	0.12	312.0	\$47.11	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C140 Office	2600	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.34	894.4	\$135.05	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Book Room	2600	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.34	894.4	\$135.05	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	A/V Room	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$67.53	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C138 Commercial Equipment	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	86	0.17	447.2	\$67.53	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.22	C134 Computer Lab.	2600	14	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.20	3,130.4	\$472.69	14	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Staff Restroom	1200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	278.4	\$42.04	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	B109 Faculty	2600	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	86	0.69	1,788.8	\$270.11	8	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	B110 Meeting Room	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$67.53	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	B111 Storage	1200	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	86	0.17	206.4	\$31.17	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	Upper Mechanical Room	4400	14	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.81	3,572.8	\$539.49	14	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Guidance	2600	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.52	1,341.6	\$202.58	6	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	B126 Office	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	86	0.17	447.2	\$67.53	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	B121 Office	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$67.53	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	B120 Testing	2600	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	223.6	\$33.76	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

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232.21	Conference Room	2600	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.03	2,683.2	\$405.16	12	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Main Office Hall	2600	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	301.6	\$45.54	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	B118 Principal's Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	\$81.66	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	B116 Vice Principal's Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	\$81.66	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Reception Area	2600	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.62	1,622.4	\$244.98	6	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	B115 Work room	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.42	1,081.6	\$163.32	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	B113 Nurse	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.42	1,081.6	\$163.32	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	6	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.35	904.8	\$136.62	6	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Stair No. 3	4400	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	255.2	\$38.54	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
17		4400	3	2	Wall Sconce, (2) 26w PL Quad Lamp	54	0.16	712.8	\$107.63	3	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	D233 Work Room	2600	2	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	301.6	\$45.54	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.14	D233A Equipment Room	2600	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.12	301.6	\$45.54	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D230 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D228 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D231 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

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232.21	D229 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D227 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1,118.0	\$168.82	5	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D226 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D224 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Boys' Restroom	3200	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	275.2	\$41.56	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		3200	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.06	185.6	\$28.03	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Girls' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	742.4	\$112.10	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.44	Roof Access	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.06	69.6	\$10.51	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	Electric Closet	1200	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.17	208.8	\$31.53	3	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D219 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

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13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D218 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D217 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D216 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D214 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D215 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D212 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1,118.0	\$168.82	5	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Girls' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	742.4	\$112.10	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic Lens	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Boys' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	742.4	\$112.10	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

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221.41	Boys Restroom	3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	Custodian Closet	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.06	69.6	\$10.51	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	D210 Speech	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	\$81.66	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D208 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D206 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D207 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1,118.0	\$168.82	5	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D204 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D205 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D202 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21		2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

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227.21	D203 Classroom	2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Stair No. 1	4400	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	255.2	\$38.54	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
17		4400	4	2	Wall Sconce, (2) 26w PL Quad Lamp	54	0.22	950.4	\$143.51	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
18	Corridor D 200	4400	12	2	Recessed Down Light, (2) 26w PL Lamp	54	0.65	2,851.2	\$430.53	12	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21		4400	22	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.89	8,324.8	\$1,257.04	22	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
211.33		4400	24	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/Indirect	30	0.72	3,168.0	\$478.37	24	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Stair No. 2	4400	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	255.2	\$38.54	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
17		4400	4	2	Wall Sconce, (2) 26w PL Quad Lamp	54	0.22	950.4	\$143.51	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	C137 Equipment Room	2600	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.12	301.6	\$45.54	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Stair C324	4400	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	510.4	\$77.07	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
17		4400	5	2	Wall Sconce, (2) 26w PL Quad Lamp	54	0.27	1,188.0	\$179.39	5	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Boys' Restroom	3200	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21		3200	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	275.2	\$41.56	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.06	185.6	\$28.03	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Girls' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	742.4	\$112.10	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21		3200	0	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.00	0.0	\$0.00	0	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D422 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

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232.21	D420 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Stair D 418	4400	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	510.4	\$77.07	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
17		4400	6	2	Wall Sconce, (2) 26w PL Quad Lamp	54	0.32	1,425.6	\$215.27	6	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41	D423 Custodian Closet	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.06	69.6	\$10.51	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41	Attic	600	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.17	104.4	\$15.76	3	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41	Electric Closet	1200	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.17	208.8	\$31.53	3	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D414 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D419 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D412 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D417 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D410 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1,118.0	\$168.82	5	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

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13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Girls' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	742.4	\$112.10	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Boys' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	742.4	\$112.10	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.12	371.2	\$56.05	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	Custodian Closet	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.06	69.6	\$10.51	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D409 Office	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	447.2	\$67.53	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D408 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D406 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D407 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1,118.0	\$168.82	5	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D404 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D402 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

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232.21	D405 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D403 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.95	2,459.6	\$371.40	11	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.06	150.8	\$22.77	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.03	67.6	\$10.21	1	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Stair D 400	4400	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.12	510.4	\$77.07	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
17		4400	6	2	Wall Sconce, (2) 26w PL Quad Lamp	54	0.32	1,425.6	\$215.27	6	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	D401 Work Room	2600	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.23	603.2	\$91.08	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Corridor D 400	4400	19	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	7,189.6	\$1,085.63	19	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
18		4400	13	2	Recessed Down Light, (2) 26w PL Lamp	54	0.70	3,088.8	\$466.41	13	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
211.33		4400	24	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/Indirect	30	0.72	3,168.0	\$478.37	24	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Corridor C 300	4400	20	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.72	7,568.0	\$1,142.77	20	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
18		4400	26	2	Recessed Down Light, (2) 26w PL Lamp	54	1.40	6,177.6	\$932.82	26	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
211.33		4400	31	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/Indirect	30	0.93	4,092.0	\$617.89	31	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		4400	10	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.58	2,552.0	\$385.35	10	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Corridor A 100	4400	22	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.89	8,324.8	\$1,257.04	22	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
18		4400	27	2	Recessed Down Light, (2) 26w PL Lamp	54	1.46	6,415.2	\$968.70	27	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
211.33		4400	4	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/Indirect	30	0.12	528.0	\$79.73	4	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Corridor C 100	4400	22	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.89	8,324.8	\$1,257.04	22	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
18		4400	18	2	Recessed Down Light, (2) 26w PL Lamp	54	0.97	4,276.8	\$645.80	18	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
211.33		4400	31	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/Indirect	30	0.93	4,092.0	\$617.89	31	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00

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227.21		4400	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	58	0.12	510.4	\$77.07	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Lobby	4400	6	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.35	1,531.2	\$231.21	6	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
18		4400	6	2	Recessed Down Light, (2) 26w PL Lamp	54	0.32	1,425.6	\$215.27	6	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
211.33		4400	7	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/Indirect	30	0.21	924.0	\$139.52	7	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.211		Center Corridor	4400	24	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	86	2.06	9,081.6	\$1,371.32	24	2	Remove 1 Lamp - No Ballast Change Required	58	1.39	6124.8	\$924.84	\$22.00	\$528.00	0.67	2956.8	\$446.48
760	Exterior	4400	37	1	400w HPS "Shoebox"	465	17.21	75,702.0	\$11,431.00	37	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
713		4400	6	1	100w HPS 1x1 w/Prismatic Lens	125	0.75	3,300.0	\$498.30	6	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
710		4400	26	1	100w HPS Wallpack	125	3.25	14,300.0	\$2,159.30	26	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
655		4400	31	2	30" Round, Surface Mnt., White Diffuser, (2) 13w PL Lamp	26	0.81	3,546.4	\$535.51	31	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
750		4400	2	1	250w HPS, Wallpack	275	0.55	2,420.0	\$365.42	2	0	No Change	0	0.00	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
		Totals		1,928	757			141.17	415,253	\$62,703	1,816	6			6.1	20,285	\$3,063		\$5,328	5.3	16,697	\$2,521

NOTES: 1. Simple Payback noted in this spreadsheet does not include Maintenance Savings and NJ Smart Start Incentives.

2. Lamp totals only include T-12 tube replacement calculations

CEG Job #: 9C10054
Project: Burlington Township Schools
Address: 601 Fountain Avenue, Burlington, NJ 08016
Building SF: 131,000 SF

Fountain Woods Elementary School

KWH COST: **\$0.151**

ECM #2: Lighting Controls

EXISTING LIGHTING					PROPOSED LIGHTING CONTROLS										SAVINGS								
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly \$ Cost	No. Fixts	No. Cont.	Controls Description	Watts Used	Total kW	Reduction (%)	kWh/Yr Fixtures	Yearly \$ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly \$ Savings	Yearly Simple Payback
232.21	C131 Work Room	2600	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.344	894.4	\$135.05	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.31	10%	804.96	\$121.55	\$75.00	\$75.00	0.03	89.44	\$13.51	5.55
232.21	C130 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C128 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C129 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C127 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C125 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1118	\$168.82	5	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.39	10%	1006.2	\$151.94	\$160.00	\$160.00	0.04	111.8	\$16.88	9.48
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C126 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C124 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Boys' Restroom	3200	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.086	275.2	\$41.56	1	0	No Change	86	0.09	0%	275.2	\$41.56	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		3200	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.058	185.6	\$28.03	1	0	No Change	58	0.06	0%	185.6	\$28.03	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	C121 Elevator Equipment	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt. No Lens	58	0.058	69.6	\$10.51	1	0	No Change	58	0.06	0%	69.6	\$10.51	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	742.4	\$112.10	4	0	No Change	58	0.23	0%	742.4	\$112.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00

221.41	Girls' Restroom	3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	Electric Closet	1200	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.174	208.8	\$31.53	3	0	No Change	58	0.17	0%	208.8	\$31.53	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C118 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C116 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C115 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C117 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C114 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C113 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C112 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1118	\$168.82	5	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.39	10%	1006.2	\$151.94	\$160.00	\$160.00	0.04	111.8	\$16.88	9.48
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Girls' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	742.4	\$112.10	4	0	No Change	58	0.23	0%	742.4	\$112.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.14	C110 Custodian Closet	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.058	69.6	\$10.51	1	0	No Change	58	0.06	0%	69.6	\$10.51	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Boys' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	742.4	\$112.10	4	0	No Change	58	0.23	0%	742.4	\$112.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00

221.41	Boys' Restroom	3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C108 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	1	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.08	10%	201.24	\$30.39	\$160.00	\$160.00	0.87	2258.36	\$341.01	0.47
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C106 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C105 Classroom	2600	19	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.634	4248.4	\$641.51	19	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.47	10%	3823.56	\$577.36	\$160.00	\$160.00	0.16	424.84	\$64.15	2.49
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C103 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C104 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C102 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	C101 Work Room	2600	2	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	301.6	\$45.54	2	0	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.10	10%	271.44	\$40.99	\$75.00	\$0.00	0.01	30.16	\$4.55	0.00
232.21	A104 Music Room	2600	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.032	2683.2	\$405.16	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.93	10%	2414.88	\$364.65	\$160.00	\$160.00	0.10	268.32	\$40.52	3.95
232.21	A106 & 107 Practice Room	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1118	\$168.82	5	0	No Change	86	0.43	0%	1118	\$168.82	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	A100 Choral Room	2600	13	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.118	2906.8	\$438.93	13	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.01	10%	2616.12	\$395.03	\$160.00	\$160.00	0.11	290.68	\$43.89	3.65
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C522 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00

232.21	C320 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Boys' Restroom	3200	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.086	275.2	\$41.56	1	0	No Change	86	0.09	0%	275.2	\$41.56	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		3200	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.058	185.6	\$28.03	1	0	No Change	58	0.06	0%	185.6	\$28.03	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.14	C323 Elevator Equipment	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.058	69.6	\$10.51	1	0	No Change	58	0.06	0%	69.6	\$10.51	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Girls' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	742.4	\$112.10	4	0	No Change	58	0.23	0%	742.4	\$112.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	Electric Closet	1200	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.174	208.8	\$31.53	3	0	No Change	58	0.17	0%	208.8	\$31.53	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C314 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C319 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C312 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C317 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C310 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1118	\$168.82	5	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.39	10%	1006.2	\$151.94	\$160.00	\$160.00	0.04	111.8	\$16.88	9.48
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Girls' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	742.4	\$112.10	4	0	No Change	58	0.23	0%	742.4	\$112.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00

227.21	Boys' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	742.4	\$112.10	4	0	No Change	58	0.23	0%	742.4	\$112.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C308 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C306 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C304 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C302 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C305 Classroom	2600	19	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.634	4248.4	\$641.51	19	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.47	10%	3823.56	\$577.36	\$160.00	\$160.00	0.16	424.84	\$64.15	2.49
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C303 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	A127 Classroom	2600	18	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.548	4024.8	\$607.74	18	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.39	10%	3622.32	\$546.97	\$160.00	\$160.00	0.15	402.48	\$60.77	2.63
232.21	A124 Classroom	2600	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.032	2683.2	\$405.16	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.93	10%	2414.88	\$364.65	\$160.00	\$160.00	0.10	268.32	\$40.52	3.95
232.22	A123 Classroom	2600	15	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.29	3354	\$506.45	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.16	10%	3018.6	\$455.81	\$160.00	\$160.00	0.13	335.4	\$50.65	3.16
232.22	A122 Classroom	2600	15	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.29	3354	\$506.45	15	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.16	10%	3018.6	\$455.81	\$160.00	\$160.00	0.13	335.4	\$50.65	3.16
232.21	Faculty Room	2600	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.032	2683.2	\$405.16	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.93	10%	2414.88	\$364.65	\$160.00	\$160.00	0.10	268.32	\$40.52	3.95
227.21		2600	6	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.348	904.8	\$136.62	6	1	Dual Technology Occupancy Sensor - Remote Mnt.	58	0.31	10%	814.32	\$122.96	\$160.00	\$160.00	0.03	90.48	\$13.66	11.71
232.21	Office	2600	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.688	1788.8	\$270.11	8	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.62	10%	1609.92	\$243.10	\$160.00	\$160.00	0.07	178.88	\$27.01	5.92

227.21	Office	2600	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	603.2	\$91.08	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.21	10%	542.88	\$81.97	\$75.00	\$75.00	0.02	60.32	\$9.11	8.23
227.21	A118 Conference Room	2600	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	603.2	\$91.08	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.21	10%	542.88	\$81.97	\$75.00	\$75.00	0.02	60.32	\$9.11	8.23
221.34	A115 Mechanical room	1200	10	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.58	696	\$105.10	10	0	No Change	58	0.58	0%	696	\$105.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	Electric Room	4400	11	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.638	2807.2	\$423.89	11	0	No Change	58	0.64	0%	2807.2	\$423.89	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.44	Electric Room Stairway	4400	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.174	765.6	\$115.61	3	0	No Change	58	0.17	0%	765.6	\$115.61	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.44	Stair A	4400	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.174	765.6	\$115.61	3	0	No Change	58	0.17	0%	765.6	\$115.61	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	A109 Storage	1200	8	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.464	556.8	\$84.08	8	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.42	10%	501.12	\$75.67	\$75.00	\$75.00	0.05	55.68	\$8.41	8.92
766	Gym	3000	20	1	400w MH Down Light, Prismatic Lens, Quartz Restrike	465	9.3	27900	\$4,212.90	20	2	2 Pole Power Pack w/Dual Tech. Occupancy Sensor (Sensorswitch or equal)	465	8.37	10%	25110	\$3,791.61	\$225.00	\$450.00	0.93	2790	\$421.29	1.07
232.21	A111 Office	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.172	447.2	\$67.53	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.15	10%	402.48	\$60.77	\$75.00	\$75.00	0.02	44.72	\$6.75	11.11
221.44	B100 Stage	2600	5	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.29	754	\$113.85	5	0	No Change	58	0.29	0%	754	\$113.85	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	B103 Tables	2600	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.116	301.6	\$45.54	2	0	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.10	10%	271.44	\$40.99	\$75.00	\$0.00	0.01	30.16	\$4.55	0.00
242.21	Cafeteria	2600	42	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	4.368	11356.8	\$1,714.88	42	2	2 Pole Power Pack w/Dual Tech. Occupancy Sensor (Sensorswitch or equal)	104	3.93	10%	10221.12	\$1,543.39	\$225.00	\$450.00	0.44	1135.68	\$171.49	2.62
221.33	B132 Cafeteria	2600	32	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	58	1.856	4825.6	\$728.67	32	2	2 Pole Power Pack w/Dual Tech. Occupancy Sensor (Sensorswitch or equal)	58	1.67	10%	4343.04	\$655.80	\$225.00	\$450.00	0.19	482.56	\$72.87	6.18
232.21	Kitchen	2600	10	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.86	2236	\$337.64	10	0	No Change	86	0.86	0%	2236	\$337.64	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	B130	2600	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.174	452.4	\$68.31	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.16	10%	407.16	\$61.48	\$75.00	\$75.00	0.02	45.24	\$6.83	10.98
232.21	Receiving	2600	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.258	670.8	\$101.29	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.23	10%	603.72	\$91.16	\$75.00	\$75.00	0.03	67.08	\$10.13	7.40
232.21	Kitchen Office	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.172	447.2	\$67.53	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.15	10%	402.48	\$60.77	\$75.00	\$75.00	0.02	44.72	\$6.75	11.11
221.21	Wash Area	2600	4	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Acrylic Lens	58	0.232	603.2	\$91.08	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.21	10%	542.88	\$81.97	\$75.00	\$75.00	0.02	60.32	\$9.11	8.23
227.21	Kitchen Restroom	1200	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	139.2	\$21.02	2	0	No Change	58	0.12	0%	139.2	\$21.02	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	Boys' Restroom	3200	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	332.8	\$50.25	1	0	No Change	104	0.10	0%	332.8	\$50.25	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		3200	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.058	185.6	\$28.03	1	0	No Change	58	0.06	0%	185.6	\$28.03	\$0.00	\$0.00	0.00	0	\$0.00	0.00

242.21	Girls' Restroom	3200	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	332.8	\$50.25	1	0	No Change	104	0.10	0%	332.8	\$50.25	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		3200	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.058	185.6	\$28.03	1	0	No Change	58	0.06	0%	185.6	\$28.03	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.14	Custodian Closet	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.058	69.6	\$10.51	1	0	No Change	58	0.06	0%	69.6	\$10.51	\$0.00	\$0.00	0.00	0	\$0.00	0.00
231.33	Media Center	2600	36	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	3.096	8049.6	\$1,215.49	36	2	2 Pole Power Pack w/Dual Tech. Occupancy Sensor (Sensorswitch or equal)	86	2.79	10%	7244.64	\$1,093.94	\$225.00	\$450.00	0.31	804.96	\$121.55	3.70
211.47		2600	4	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Indirect	30	0.12	312	\$47.11	4	0	No Change	30	0.12	0%	312	\$47.11	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	C140 Office	2600	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.344	894.4	\$135.05	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.31	10%	804.96	\$121.55	\$75.00	\$75.00	0.03	89.44	\$13.51	5.55
232.21	Book Room	2600	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.344	894.4	\$135.05	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.31	10%	804.96	\$121.55	\$75.00	\$75.00	0.03	89.44	\$13.51	5.55
232.21	A/V Room	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.172	447.2	\$67.53	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.15	10%	402.48	\$60.77	\$75.00	\$75.00	0.02	44.72	\$6.75	11.11
232.21	C138 Commercial Equipment	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.172	447.2	\$67.53	2	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.15	10%	402.48	\$60.77	\$75.00	\$75.00	0.02	44.72	\$6.75	11.11
232.22	C134 Computer Lab.	2600	14	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.204	3130.4	\$472.69	14	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.08	10%	2817.36	\$425.42	\$160.00	\$160.00	0.12	313.04	\$47.27	3.38
227.21	Staff Restroom	1200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	278.4	\$42.04	4	0	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.21	10%	250.56	\$37.83	\$75.00	\$0.00	0.02	27.84	\$4.20	0.00
232.21	B109 Faculty	2600	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.688	1788.8	\$270.11	8	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.62	10%	1609.92	\$243.10	\$160.00	\$160.00	0.07	178.88	\$27.01	5.92
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	B110 Meeting Room	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.172	447.2	\$67.53	2	0	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.15	10%	402.48	\$60.77	\$75.00	\$0.00	0.02	44.72	\$6.75	0.00
232.21	B111 Storage	1200	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.172	206.4	\$31.17	2	0	No Change	86	0.17	0%	206.4	\$31.17	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	Upper Mechanical Room	4400	14	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.812	3572.8	\$539.49	14	0	No Change	58	0.81	0%	3572.8	\$539.49	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Guidance	2600	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.516	1341.6	\$202.58	6	0	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.46	10%	1207.44	\$182.32	\$75.00	\$0.00	0.05	134.16	\$20.26	0.00
232.21	B126 Office	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.172	447.2	\$67.53	2	0	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.15	10%	402.48	\$60.77	\$75.00	\$0.00	0.02	44.72	\$6.75	0.00
232.21	B121 Office	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.172	447.2	\$67.53	2	0	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.15	10%	402.48	\$60.77	\$75.00	\$0.00	0.02	44.72	\$6.75	0.00
232.21	B120 Testing	2600	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.086	223.6	\$33.76	1	0	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.08	10%	201.24	\$30.39	\$75.00	\$0.00	0.01	22.36	\$3.38	0.00
232.21	Conference Room	2600	12	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.032	2683.2	\$405.16	12	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.93	10%	2414.88	\$364.65	\$160.00	\$160.00	0.10	268.32	\$40.52	3.95
227.21	Main Office Hall	2600	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	301.6	\$45.54	2	0	No Change	58	0.12	0%	301.6	\$45.54	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	B118 Principal's Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	\$81.66	2	0	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	\$73.49	\$75.00	\$0.00	0.02	54.08	\$8.17	0.00

242.21	B116 Vice Principal's Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	\$81.66	2	0	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.19	10%	486.72	\$73.49	\$75.00	\$0.00	0.02	54.08	\$8.17	0.00
242.21	Reception Area	2600	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.624	1622.4	\$244.98	6	0	No Change	104	0.62	0%	1622.4	\$244.98	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	B115 Work room	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.416	1081.6	\$163.32	4	0	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.37	10%	973.44	\$146.99	\$75.00	\$0.00	0.04	108.16	\$16.33	0.00
242.21	B113 Nurse	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.416	1081.6	\$163.32	4	0	Dual Technology Occupancy Sensor - Switch Mnt.	104	0.37	10%	973.44	\$146.99	\$75.00	\$0.00	0.04	108.16	\$16.33	0.00
227.21		2600	6	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.348	904.8	\$136.62	6	0	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.31	10%	814.32	\$122.96	\$75.00	\$0.00	0.03	90.48	\$13.66	0.00
227.21	Stair No. 3	4400	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	255.2	\$38.54	1	0	No Change	58	0.06	0%	255.2	\$38.54	\$0.00	\$0.00	0.00	0	\$0.00	0.00
17		4400	3	2	Wall Sconce, (2) 26w PL Quad Lamp	54	0.162	712.8	\$107.63	3	0	No Change	54	0.16	0%	712.8	\$107.63	\$0.00	\$0.00	0.00	0	\$0.00	0.00
222.21	D233 Work Room	2600	2	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	301.6	\$45.54	2	0	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.10	10%	271.44	\$40.99	\$75.00	\$0.00	0.01	30.16	\$4.55	0.00
221.14	D233A Equipment Room	2600	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.116	301.6	\$45.54	2	0	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.10	10%	271.44	\$40.99	\$75.00	\$0.00	0.01	30.16	\$4.55	0.00
232.21	D230 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D228 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D231 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D229 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D227 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1118	\$168.82	5	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.39	10%	1006.2	\$151.94	\$160.00	\$160.00	0.04	111.8	\$16.88	9.48
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D226 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00

232.21	D224 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Boys' Restroom	3200	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.086	275.2	\$41.56	1	0	No Change	86	0.09	0%	275.2	\$41.56	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		3200	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.058	185.6	\$28.03	1	0	No Change	58	0.06	0%	185.6	\$28.03	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Girls' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	742.4	\$112.10	4	0	No Change	58	0.23	0%	742.4	\$112.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.44	Roof Access	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.058	69.6	\$10.51	1	0	No Change	58	0.06	0%	69.6	\$10.51	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	Electric Closet	1200	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.174	208.8	\$31.53	3	0	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.16	10%	187.92	\$28.38	\$75.00	\$0.00	0.02	20.88	\$3.15	0.00
232.21	D219 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D218 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D217 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D216 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D214 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D215 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00

13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D212 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1118	\$168.82	5	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.39	10%	1006.2	\$151.94	\$160.00	\$160.00	0.04	111.8	\$16.88	9.48
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Girls' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	742.4	\$112.10	4	0	No Change	58	0.23	0%	742.4	\$112.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Boys' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	742.4	\$112.10	4	0	No Change	58	0.23	0%	742.4	\$112.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	Custodian Closet	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.058	69.6	\$10.51	1	0	No Change	58	0.06	0%	69.6	\$10.51	\$0.00	\$0.00	0.00	0	\$0.00	0.00
242.21	D210 Speech	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	\$81.66	2	1	Daylight Sensor (Sensorswitch PP-20 & CM-PC or equal)	104	0.16	25%	405.6	\$61.25	\$160.00	\$160.00	0.05	135.2	\$20.42	7.84
232.21	D208 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D206 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D207 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1118	\$168.82	5	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.39	10%	1006.2	\$151.94	\$160.00	\$160.00	0.04	111.8	\$16.88	9.48
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D204 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D205 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D202 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00

13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D203 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Stair No. 1	4400	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	255.2	\$38.54	1	0	No Change	58	0.06	0%	255.2	\$38.54	\$0.00	\$0.00	0.00	0	\$0.00	0.00
17		4400	4	2	Wall Sconce, (2) 26w PL Quad Lamp	54	0.216	950.4	\$143.51	4	0	No Change	54	0.22	0%	950.4	\$143.51	\$0.00	\$0.00	0.00	0	\$0.00	0.00
18	Corridor D 200	4400	12	2	Recessed Down Light, (2) 26w PL Lamp	54	0.648	2851.2	\$430.53	12	0	No Change	54	0.65	0%	2851.2	\$430.53	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21		4400	22	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.892	8324.8	\$1,257.04	22	0	No Change	86	1.89	0%	8324.8	\$1,257.04	\$0.00	\$0.00	0.00	0	\$0.00	0.00
211.33		4400	24	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/Indirect	30	0.72	3168	\$478.37	24	0	No Change	30	0.72	0%	3168	\$478.37	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Stair No. 2	4400	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	255.2	\$38.54	1	0	No Change	58	0.06	0%	255.2	\$38.54	\$0.00	\$0.00	0.00	0	\$0.00	0.00
17		4400	4	2	Wall Sconce, (2) 26w PL Quad Lamp	54	0.216	950.4	\$143.51	4	0	No Change	54	0.22	0%	950.4	\$143.51	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	C137 Equipment Room	2600	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.116	301.6	\$45.54	2	0	No Change	58	0.12	0%	301.6	\$45.54	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Stair C324	4400	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	510.4	\$77.07	2	0	No Change	58	0.12	0%	510.4	\$77.07	\$0.00	\$0.00	0.00	0	\$0.00	0.00
17		4400	5	2	Wall Sconce, (2) 26w PL Quad Lamp	54	0.27	1188	\$179.39	5	0	No Change	54	0.27	0%	1188	\$179.39	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Boys' Restroom	3200	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21		3200	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.086	275.2	\$41.56	1	0	No Change	86	0.09	0%	275.2	\$41.56	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.058	185.6	\$28.03	1	0	No Change	58	0.06	0%	185.6	\$28.03	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Girls' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	742.4	\$112.10	4	0	No Change	58	0.23	0%	742.4	\$112.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21		3200	0	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0	0	\$0.00	0	0	No Change	86	0.00	0%	0	\$0.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D422 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D420 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Stair D 418	4400	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	510.4	\$77.07	2	0	No Change	58	0.12	0%	510.4	\$77.07	\$0.00	\$0.00	0.00	0	\$0.00	0.00
17		4400	6	2	Wall Sconce, (2) 26w PL Quad Lamp	54	0.324	1425.6	\$215.27	6	0	No Change	54	0.32	0%	1425.6	\$215.27	\$0.00	\$0.00	0.00	0	\$0.00	0.00

221.41	D423 Custodian Closet	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.058	69.6	\$10.51	1	0	No Change	58	0.06	0%	69.6	\$10.51	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41	Attic	600	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.174	104.4	\$15.76	3	0	No Change	58	0.17	0%	104.4	\$15.76	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41	Electric Closet	1200	3	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.174	208.8	\$31.53	3	0	No Change	58	0.17	0%	208.8	\$31.53	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D414 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D419 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D412 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D417 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D410 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1118	\$168.82	5	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.39	10%	1006.2	\$151.94	\$160.00	\$160.00	0.04	111.8	\$16.88	9.48
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Girls' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	742.4	\$112.10	4	0	No Change	58	0.23	0%	742.4	\$112.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Boys' Restroom	3200	4	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	742.4	\$112.10	4	0	No Change	58	0.23	0%	742.4	\$112.10	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.41		3200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.116	371.2	\$56.05	2	0	No Change	58	0.12	0%	371.2	\$56.05	\$0.00	\$0.00	0.00	0	\$0.00	0.00
221.34	Custodian Closet	1200	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.058	69.6	\$10.51	1	0	No Change	58	0.06	0%	69.6	\$10.51	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D409 Office	2600	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.172	447.2	\$67.53	2	1	Daylight Sensor (Sensorswitch PP-20 & CM-PC or equal)	86	0.13	25%	335.4	\$50.65	\$160.00	\$160.00	0.04	111.8	\$16.88	9.48
232.21	D408 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00

232.21	D406 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D407 SGI	2600	5	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.43	1118	\$168.82	5	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.39	10%	1006.2	\$151.94	\$160.00	\$160.00	0.04	111.8	\$16.88	9.48
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D404 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D402 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D405 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	D403 Classroom	2600	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.946	2459.6	\$371.40	11	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.85	10%	2213.64	\$334.26	\$160.00	\$160.00	0.09	245.96	\$37.14	4.31
227.21		2600	1	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.058	150.8	\$22.77	1	0	No Change	58	0.06	0%	150.8	\$22.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
13		2600	1	1	Recessed Down Light, 26w PL Lamp	26	0.026	67.6	\$10.21	1	0	No Change	26	0.03	0%	67.6	\$10.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Stair D 400	4400	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	510.4	\$77.07	2	0	No Change	58	0.12	0%	510.4	\$77.07	\$0.00	\$0.00	0.00	0	\$0.00	0.00
17		4400	6	2	Wall Sconce, (2) 26w PL Quad Lamp	54	0.324	1425.6	\$215.27	6	1	Daylight Sensor (Sensorswitch PP-20 & CM-PC or equal)	54	0.24	25%	1069.2	\$161.45	\$160.00	\$160.00	0.08	356.4	\$53.82	2.97
222.21	D401 Work Room	2600	4	2	2x4, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.232	603.2	\$91.08	4	0	No Change	58	0.23	0%	603.2	\$91.08	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Corridor D 400	4400	19	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.634	7189.6	\$1,085.63	19	0	No Change	86	1.63	0%	7189.6	\$1,085.63	\$0.00	\$0.00	0.00	0	\$0.00	0.00
18		4400	13	2	Recessed Down Light, (2) 26w PL Lamp	54	0.702	3088.8	\$466.41	13	0	No Change	54	0.70	0%	3088.8	\$466.41	\$0.00	\$0.00	0.00	0	\$0.00	0.00
211.33		4400	24	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/Indirect	30	0.72	3168	\$478.37	24	1	Daylight Sensor (Sensorswitch PP-20 & CM-PC or equal)	30	0.54	25%	2376	\$358.78	\$160.00	\$160.00	0.18	792	\$119.59	1.34
232.21	Corridor C 300	4400	20	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.72	7568	\$1,142.77	20	0	No Change	86	1.72	0%	7568	\$1,142.77	\$0.00	\$0.00	0.00	0	\$0.00	0.00
18		4400	26	2	Recessed Down Light, (2) 26w PL Lamp	54	1.404	6177.6	\$932.82	26	0	No Change	54	1.40	0%	6177.6	\$932.82	\$0.00	\$0.00	0.00	0	\$0.00	0.00
211.33		4400	31	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/Indirect	30	0.93	4092	\$617.89	31	0	No Change	30	0.93	0%	4092	\$617.89	\$0.00	\$0.00	0.00	0	\$0.00	0.00

227.21		4400	10	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.58	2552	\$385.35	10	0	No Change	58	0.58	0%	2552	\$385.35	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Corridor A 100	4400	22	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.892	8324.8	\$1,257.04	22	0	No Change	86	1.89	0%	8324.8	\$1,257.04	\$0.00	\$0.00	0.00	0	\$0.00	0.00
18		4400	27	2	Recessed Down Light, (2) 26w PL Lamp	54	1.458	6415.2	\$968.70	27	0	No Change	54	1.46	0%	6415.2	\$968.70	\$0.00	\$0.00	0.00	0	\$0.00	0.00
211.33		4400	4	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt. Direct/Indirect	30	0.12	528	\$79.73	4	0	No Change	30	0.12	0%	528	\$79.73	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.21	Corridor C 100	4400	22	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.892	8324.8	\$1,257.04	22	0	No Change	86	1.89	0%	8324.8	\$1,257.04	\$0.00	\$0.00	0.00	0	\$0.00	0.00
18		4400	18	2	Recessed Down Light, (2) 26w PL Lamp	54	0.972	4276.8	\$645.80	18	0	No Change	54	0.97	0%	4276.8	\$645.80	\$0.00	\$0.00	0.00	0	\$0.00	0.00
211.33		4400	31	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt. Direct/Indirect	30	0.93	4092	\$617.89	31	0	No Change	30	0.93	0%	4092	\$617.89	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21	Lobby	4400	2	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.116	510.4	\$77.07	2	0	No Change	58	0.12	0%	510.4	\$77.07	\$0.00	\$0.00	0.00	0	\$0.00	0.00
227.21		4400	6	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.348	1531.2	\$231.21	6	0	No Change	58	0.35	0%	1531.2	\$231.21	\$0.00	\$0.00	0.00	0	\$0.00	0.00
18		4400	6	2	Recessed Down Light, (2) 26w PL Lamp	54	0.324	1425.6	\$215.27	6	0	No Change	54	0.32	0%	1425.6	\$215.27	\$0.00	\$0.00	0.00	0	\$0.00	0.00
211.33	Center Corridor	4400	7	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt. Direct/Indirect	30	0.21	924	\$139.52	7	0	No Change	30	0.21	0%	924	\$139.52	\$0.00	\$0.00	0.00	0	\$0.00	0.00
232.211		4400	24	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	2.064	9081.6	\$1,371.32	24	0	No Change	86	2.06	0%	9081.6	\$1,371.32	\$0.00	\$0.00	0.00	0	\$0.00	0.00
760		4400	37	1	400w HPS "Shoebox"	465	17.205	75702	\$11,431.00	37	0	No Change	465	17.21	0%	75702	\$11,431.00	\$0.00	\$0.00	0.00	0	\$0.00	0.00
713	Exterior	4400	6	1	100w HPS 1x1 w/Prismatic Lens	125	0.75	3300	\$498.30	6	0	No Change	125	0.75	0%	3300	\$498.30	\$0.00	\$0.00	0.00	0	\$0.00	0.00
710		4400	26	1	100w HPS Wallpack	125	3.25	14300	\$2,159.30	26	0	No Change	125	3.25	0%	14300	\$2,159.30	\$0.00	\$0.00	0.00	0	\$0.00	0.00
655		4400	31	2	30" Round, Surface Mnt., White Diffuser, (2) 13w PL Lamp	26	0.806	3546.4	\$535.51	31	0	No Change	26	0.81	0%	3546.4	\$535.51	\$0.00	\$0.00	0.00	0	\$0.00	0.00
750		4400	2	1	250w HPS, Wallpack	275	0.55	2420	\$365.42	2	0	No Change	275	0.55	0%	2420	\$365.42	\$0.00	\$0.00	0.00	0	\$0.00	0.00
	Totals		1,928	757			163.7	514,521.2	\$77,693	1,918	105			152.7		485,020.8	\$73,238.13		\$16,215	11.07	29,500	\$4,455	3.64

Project Name: LGEA Solar PV Project - Fountain Elementary							
Location: Burlington Township, NJ							
Description: Photovoltaic System - Direct Purchase							
Simple Payback Analysis							
		Photovoltaic System - Direct Purchase					
Total Construction Cost		\$2,366,010					
Annual kWh Production		326,666					
Annual Energy Cost Reduction		\$49,327					
Annual SREC Revenue		\$114,333					
First Cost Premium		\$2,366,010					
Simple Payback:		14.46					Years
Life Cycle Cost Analysis							
Analysis Period (years):		25		Financing %:		0%	
Financing Term (mths):		0		Maintenance Escalation Rate:		3.0%	
Average Energy Cost (\$/kWh)		\$0.151		Energy Cost Escalation Rate:		3.0%	
Financing Rate:		0.00%		SREC Value (\$/kWh)		\$0.350	
Period	Additional Cash Outlay	Energy kWh Production	Energy Cost Savings	Additional Maint Costs	SREC Revenue	Net Cash Flow	Cumulative Cash Flow
0	\$2,366,010	0	0	0	\$0	(2,366,010)	0
1	\$0	326,666	\$49,327	\$0	\$114,333	\$163,660	(\$2,202,350)
2	\$0	325,033	\$50,806	\$0	\$113,761	\$164,568	(\$2,037,783)
3	\$0	323,408	\$52,331	\$0	\$113,193	\$165,523	(\$1,872,259)
4	\$0	321,790	\$53,900	\$0	\$112,627	\$166,527	(\$1,705,732)
5	\$0	320,182	\$55,517	\$3,298	\$112,064	\$164,283	(\$1,541,449)
6	\$0	318,581	\$57,183	\$3,281	\$111,503	\$165,405	(\$1,376,044)
7	\$0	316,988	\$58,898	\$3,265	\$110,946	\$166,579	(\$1,209,465)
8	\$0	315,403	\$60,665	\$3,249	\$110,391	\$167,808	(\$1,041,657)
9	\$0	313,826	\$62,485	\$3,232	\$109,839	\$169,092	(\$872,565)
10	\$0	312,257	\$64,360	\$3,216	\$109,290	\$170,434	(\$702,132)
11	\$0	310,695	\$66,291	\$3,200	\$108,743	\$171,834	(\$530,298)
12	\$0	309,142	\$68,280	\$3,184	\$108,200	\$173,295	(\$357,003)
13	\$0	307,596	\$70,328	\$3,168	\$107,659	\$174,818	(\$182,184)
14	\$0	306,058	\$72,438	\$3,152	\$107,120	\$176,406	(\$5,779)
15	\$0	304,528	\$74,611	\$3,137	\$106,585	\$178,059	\$172,280
16	\$0	303,005	\$76,849	\$3,121	\$106,052	\$179,780	\$352,060
17	\$0	301,490	\$79,155	\$3,105	\$105,522	\$181,571	\$533,631
18	\$0	299,983	\$81,529	\$3,090	\$104,994	\$183,433	\$717,065
19	\$0	298,483	\$83,975	\$3,074	\$104,469	\$185,370	\$902,434
20	\$0	296,990	\$86,494	\$3,059	\$103,947	\$187,382	\$1,089,817
21	\$1	295,505	\$89,089	\$3,044	\$103,427	\$189,472	\$1,279,289
22	\$2	294,028	\$91,762	\$3,028	\$102,910	\$191,643	\$1,470,932
23	\$3	292,558	\$94,515	\$3,013	\$102,395	\$193,897	\$1,664,829
24	\$4	291,095	\$97,350	\$2,998	\$101,883	\$196,235	\$1,861,064
25	\$5	289,640	\$100,271	\$2,983	\$101,374	\$198,661	\$2,059,726
Totals:		7,694,928	\$1,798,410	\$65,900	\$2,693,225	\$4,425,736	(\$3,533,572)
Net Present Value (NPV)						\$2,059,751	
Internal Rate of Return (IRR)						5.3%	

Building	Roof Area (sq ft)	Panel	Qty	Panel Sq Ft	Panel Total Sq Ft	Total KW _{DC}	Total Annual kWh	Panel Weight (33 lbs)	W/SQFT
Fountain Elementary	16800	Sunpower SPR230	1143	14.7	16,807	262.89	326,666	37,719	15.64




AC Energy
&
Cost Savings



(Type comments here to appear on printout; maximum 1 row of 80 characters.)

Station Identification	
City:	Atlantic_City
State:	New_Jersey
Latitude:	39.45° N
Longitude:	74.57° W
Elevation:	20 m
PV System Specifications	
DC Rating:	262.9 kW
DC to AC Derate Factor:	0.800
AC Rating:	210.3 kW
Array Type:	Fixed Tilt
Array Tilt:	15.0°
Array Azimuth:	180.0°
Energy Specifications	
Cost of Electricity:	0.2 ¢/kWh

Results			
Month	Solar Radiation (kWh/m ² /day)	AC Energy (kWh)	Energy Value (\$)
1	2.80	18540	28.00
2	3.53	21227	32.05
3	4.46	28743	43.40
4	5.28	32120	48.50
5	5.86	36199	54.66
6	6.10	35019	52.88
7	6.05	35514	53.63
8	5.60	32973	49.79
9	4.99	28907	43.65
10	3.97	24279	36.66
11	2.86	17547	26.50
12	2.43	15599	23.55
Year	4.50	326666	493.27

 = Proposed PV Layout

Notes:

1. Estimated kWh based on the National Renewable Energy Laboratory PVWatts Version 1 Calculator Program.

**MELINK
CORPORATION**

INTELLI-HOOD VARIABLE EXHAUST CONTROLLER

ENERGY SAVINGS REPORT

COMPANY: CEG

RETROFIT

ADDRESS: Burlington Township BOE
Fountain Woods Elementary School

Nov-02-10

APPLICATION: Main Kitchen

- MOTOR OPERATING SAVINGS:	\$792 /YEAR
- HEATING SAVINGS:	\$247 /YEAR
- COOLING SAVINGS:	\$361 /YEAR
- TOTAL SAVINGS:	\$1,400 /YEAR
- INSTALLED COST:	\$22,874
- PAYBACK PERIOD:	16.3 YEARS
- RATE OF RETURN - 5 YEARS:	-28.3 %
10 YEARS:	-5.8 %

The projected savings shown above are based on the above store's operating hours, HVAC system, cooking load, and geographic location.

I. MOTOR OPERATING SAVINGS

INPUT DATA:

A Operating Hours Per Day	6	HRS/DAY
B Operating Days Per Week	5	DAYS/WK
C Operating Weeks Per Year	42	WKS/YR
D Horsepower of Fan Motor(s)	8	HP
E Load Factor of Fan Motor(s)	0.9	
F Cost Per Kilowatt Hour	0.159	\$/KWH

CONSTANT EXHAUST VOLUME ANALYSIS:

G Total Time (A x B x C)	1260	HRS/YR
H Total KWHR/HP/YR (0.746/0.9 x G)	1044.4	KWHR/HP/YR

VARIABLE EXHAUST VOLUME ANALYSIS:

% Rated RPM H	% Run Time I	Time HRS/YR J=FxI	Output KW/HP K	System Effic. L	Input KW/HP M=K/L	KWHR/ HP/YR N=JxM
100	5	63	0.746	0.9	0.829	52.2
90	10	126	0.544	0.9	0.604	76.2
80	15	189	0.382	0.9	0.424	80.2
70	20	252	0.256	0.9	0.284	71.7
60	20	252	0.161	0.9	0.179	45.1
50	15	189	0.093	0.9	0.103	19.5
40	10	126	0.048	0.9	0.053	6.7
30	5	63	0.020	0.9	0.022	1.4
20	0	0	0.015	0.9	0.017	0.0
10	0	0	0.010	0.90	0.011	0.0

O Total KWH/HP/YR (Total of Column N)	353.0
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CALCULATION:

$$\text{SAVINGS} = (H - O) \times D \times E \times F = \text{\$792 /YEAR}$$

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II. CONDITIONED MAKE-UP AIR - HEATING

INPUT DATA:

A Previous Net Exhaust Volume	4500	CFM
B New Net Exhaust Volume (1)	2925	CFM
C Winter Building Temperature	70	F
D Previous Net Heat Load (2)	81419	kBTU
E New Net Heat Load (2)	52922	kBTU
F Operating Hours Per Day	6	HRS/DAY
G Operating Days Per Week	5	DAYS/WK
- Heating Fuel Type	Hot Water	
H Cost Per Fuel Unit (3)	1.23	\$/UNIT
J BTU Per Fuel Unit (4)	100	kBTU/UNIT
K System Efficiency (4)	0.85	

CALCULATION:

$$\text{SAVINGS} = (D - E) \times 0.6 \times H / (J \times K)$$
$$= \$247 \text{ /YEAR}$$

=====

NOTES:

(1) Determine the New Exhaust Volume by completing TABLE 1. The New Exhaust Volume equals the AVG % RPM x the Previous Exhaust Volume.

(2) Using design weather data via the Outdoor Airload Calculator and multiplied by days/year ratio.

(3) Using local energy costs.

(4) Using typical system efficiency.

TABLE 1

% Rated RPM (F)	% Run Time (I)	F x I
100	5	5
90	10	9
80	15	12
70	20	14
60	20	12
50	15	8
40	10	4
30	5	2
20	0	0
10	0	0

AVG % RPM = 65%

III. CONDITIONED MAKE-UP AIR SAVINGS - COOLING

INPUT DATA:

A Previous Net Exhaust Volume	4500 CFM
B New Net Exhaust Volume (1)	2925 CFM
C Previous Net Cooling Load (2)	108,000 kBTU
D New Net Cooling Load (2)	70200 kBTU
E AC Correction Factor (3)	1
F Cost Per Fuel Unit (5)	0.159 \$/kWH
G COP (6)	2.9299736

CALCULATION:

$$\text{SAVINGS} = (C - D) \times 0.6 \times E \times F / (3.413 \times G)$$

$$= \quad \$361 \text{ /YEAR}$$

=====

NOTES:

(1) Using New Exhaust Volume from CONDITIONED MAKE-UP AIR SAVINGS - HEATING on page 2. See Note 1.

(2) Obtained from Outdoor Airload Calculator

(3) Using design weather data.

(4) The multiplier corrects for actual % outside air.

(5) Using local energy costs.

(6) Using typical system efficiency.

AFTER-TAX CASH FLOW ANALYSIS

INPUT DATA:

FIRST YEAR SAVINGS	\$1,400 /YEAR
INITIAL COST PLUS INSTALLATION	\$22,874
MARGINAL TAX RATE	0%
ESTIMATED ANNUAL INCREASE IN ENERGY COSTS	3%

<u>YEAR</u>	<u>SAVINGS</u>	<u>COST</u>	<u>DEPREC. %</u>	<u>DEPREC. \$</u>	<u>NET AFTER-TAX CASH FLOW</u>
0		-22,874			-22,874
1	1400	-	29	6633	1400
2	1442	-	20	4575	1442
3	1485	-	13	2974	1485
4	1529	-	10	2287	1529
5	1575	-	9	2059	1575
6	1622	-	9	2059	1622
7	1671	-	9	2059	1671
8	1721	-			1721
9	1773	-			1773
10	1826	-			1826

CALCULATIONS:

NET PRESENT VALUE = -\$15,594 ; 5 YEARS @ 15%	INTERNAL RATE OF RETURN (IRR) =	-28.3 %
NET PRESENT VALUE = -\$13,117 ; 10 YEARS @ 15%	INTERNAL RATE OF RETURN (IRR) =	-5.8 %

NOTE:

Net After-tax Cash Flow is calculated as follows:

$$\text{NATCF} = \text{SAVINGS} - \text{COSTS} - \text{TAX RATE}(\text{SAVINGS} - \text{COSTS} - \text{DEPRECIATION})$$

Net Present Value is calculated as follows:

$$\text{NPV} = C(0) + C(1)/(1 + r) + C(2)/(1 + r)^2 + \dots + C(n)/(1 + r)^n$$

(where C(n) is the net cash flow for the nth year

and r is the opportunity cost of capital)

IRR is calculated by trial and error using the formula:

$$\text{NPV} = C(0) + C(1)/(1 + \text{IRR}) + C(2)/(1 + \text{IRR})^2 + \dots + C(n)/(1 + \text{IRR})^n$$

<u>Solar Thermal System Panel Layout</u>									
Building	Roof Area (sq ft)	Panel	Qty	Panel Sq Ft	Panel Total Sq Ft	Average kWh (heat)	Total Annual kWh (heat)	Average kBtu (heat)	Total Annual kBtu (heat)
Mt. Olive Middle School	2,500	Viesmann Flat Plate (VITOSOL 200F)	53	48.0	2,544	18,077	216,919	61,713	740,560



:= Proposed Solar Thermal Layout

Notes:

1. Estimated production based on the National Renewable Energy Laboratory PVWatts Version 1 Calculator Program.

Solar Thermal Calculations

Concord Engineering Group
Fountain Wood Elementary School

SOLAR THERMAL SYSTEM CALCULATIONS (FLAT PLATE COLLECTORS)								
Solar Thermal Panel SF:			2,500					
Solar Panel Qty:			53					
Panel Direction:			180° (South)					
Tilt Angle (degree from horizontal):			40.7°					
Ave Solar Thermal Operating Temperature:			90					
Panel Area (SF per panel):			48					
*Solar Panel Efficiencies are based on Viesmann Flat Plate collector model VITOSOL 200F								
Month	AMB T	AVE ΔT	SOLAR RADIATION			DHW PRODUCTION		
	(°F)	(°F)	KWH/M^2/Day	KWH/SF/Day	Panel Eff.	Net KWH/SF/Day	Net KWH	Net kBtu
1	30	60	3.36	0.312	41.0%	0.128	9,739	33,248
2	30	60	4.05	0.376	41.0%	0.154	11,739	40,076
3	40	50	4.58	0.425	46.7%	0.199	15,110	51,584
4	50	40	4.84	0.450	52.3%	0.235	17,906	61,132
5	60	30	5.3	0.492	58.0%	0.286	21,731	74,190
6	70	20	5.33	0.495	63.7%	0.315	23,989	81,900
7	80	10	5.27	0.490	69.3%	0.339	25,830	88,185
8	85	5	5.25	0.488	72.2%	0.352	26,784	91,440
9	75	15	5.06	0.470	66.5%	0.313	23,788	81,211
10	65	25	4.46	0.414	60.8%	0.252	19,180	65,482
11	50	40	3.15	0.293	52.3%	0.153	11,654	39,786
12	40	50	2.87	0.267	46.7%	0.124	9,468	32,325
TOTALS							216,919	740,560
AVERAGE			4.46	0.414		0.238	18,077	61,713

Notes: Solar radiation values obtained from National Renewable Energy Laboratory PVWatts Version 1 Calculator Program