LOCAL GOVERNMENT ENERGY AUDIT PROGRAM: ENERGY AUDIT REPORT

PREPARED FOR:

BURLINGTON TOWNSHIP BOARD OF EDUCATION

BURLINGTON TOWNSHIP MIDDLE SCHOOL AT SPRINGSIDE

1600 Burlington Bypass
Burlington, NJ 08016

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REPORT ISSUANCE: **FINAL, JANUARY 27, 2011**
PROJECT NO: **9C10054**

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I. EXECUTIVE SUMMARY

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

Burlington Township Board of Education
Burlington Township Middle School at Springside
1600 Burlington Bypass
Burlington, NJ 08016

Municipal Contact Person: Mrs. Mary Ann Bell, Business Administrator/ Board Secretary
Facility Contact Person: Mr. John Mangino, Director of Facilities

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	$ 286,542
Natural Gas	$ 60,794
Total	$ 347,337

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 ± 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	Premium Efficiency Pump Motor Upgrade	$1,190	$178	6.7	169.2%
ECM #2	CRT Computer Monitor Upgrade	$900	$139	6.5	131.7%
ECM #3	Lighting Upgrade - Metal Halide	$27,680	$38,976	0.71	2012.1%
ECM #4	Lighting Upgrade - Delamping	$7,006	$5,659	1.2	1111.6%
ECM #5	Lighting Controls	$1,440	$1,173	1.2	1121.9%
ECM #6	Melink System	$13,000	$935	13.9	7.9%
RENEWABLE ENERGY MEASURES (REM's)					
ECM NO.	**DESCRIPTION**	**NET INSTALLATION COST**	**ANNUAL SAVINGS**	**SIMPLE PAYBACK (Yrs)**	**SIMPLE LIFETIME ROI**
REM #1	Parking Canopy PV 321.54 KW System	$2,893,860	$201,370	14.4	74.0%

Notes: A. Cost takes into consideration applicable NJ Smart StartTM 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**	**NET INSTALLATION COST[A]**	**ANNUAL SAVINGS[B]**	**SIMPLE PAYBACK (Yrs)**	**SIMPLE LIFETIME ROI**
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Notes: A. Cost takes into consideration applicable NJ Smart StartTM incentives.
B. Savings takes into consideration applicable maintenance savings.

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:** Premium Pump Motor Upgrade
- **ECM #2:** CRT Computer Monitor Upgrade
- **ECM #3:** Lighting Upgrade – Metal Halide
- **ECM #4:** Lighting Upgrade – Delamping
- **ECM #5:** Lighting Controls

ECM #1 Premium Efficiency Pump Motor

The existing electric motor driving the domestic water circulator pump is a good candidate for replacing with the premium efficiency motor. This standard efficiency motor operates a considerable amount of time over a year. NEMA Premium® is the most efficient motor designation in the marketplace today. This ECM has a simple payback in 6.7 years and it is recommended for the building.

ECM #2 Computer Monitor Upgrade

Some of the computers in the building utilize CRT (cathode ray tube) computer monitors. This type of computer monitor is outdated and has several disadvantages such as; significantly increased energy consumption, large amount of desk space usage, poor picture quality, distortions and flickering image, secular glare problems, 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 in 6.5 years and it is recommended for the building.

ECM #3 Lighting Upgrade – Metal Halide

The Cafeterias A & B utilize 400W metal halide 2x2 fixtures for lighting. The Gym and Auxiliary Gym utilize 1000W metal halide up light fixtures for lighting. The gym and auxiliary gym do not have reflective ceiling paint making the up lighting very inefficient. Replacement of the metal halide up lights with lower wattage down lights will significantly reduce the consumed power and reduce maintenance costs. This ECM will have a simple payback of 0.7 years and is highly recommended for this facility.

ECM #4 Lighting Upgrade – Delamping
There are several locations in the Burlington Township Middle School at Springside that have efficient T8 fluorescent lighting with electronic ballasts. The lighting provided for these areas are in excess of normal lighting levels. There is no ballast change required and the removal of only 1 lamp per fixture in the over lit areas will save a substantial amount of energy. This ECM is recommended for this facility and has a simple payback of 1.2 years.

ECM #5 Lighting Controls
Lighting controls provide a simple and effective solution to the problem of lights being unnecessarily left on. Daylight Sensors were included in this ECM to show the relative effect of daylight harvesting. The simple payback is approximately 1.2 years and is recommended for this facility.

Although ECM's #6 does not provide a payback of less than 10 years, it is recommended to proceed with the installation of the Melink kitchen ventilation controls as suggested in ECM #6 (or equal) for the Burlington Township Middle School at Springside, since this equipment will provide a substantial energy savings. This ECM has a greater capital investment for the facility, however when rolled together with the other lower cost ECMs they can provide favorable payback. If Burlington Township Board of Education were to implement all ECMs (ECM 1 thru ECM 6) identified (except for REM#1), the overall annual savings is estimated to be $47,060 with a simple payback of 1.1 years.

The ECMs identified in the energy audit have the potential for funding through programs offered by NJ Clean Energy. The one for one style ECMs such as the premium efficiency motors, CRT Computer Monitor Upgrade, lighting and lighting controls (ECMs 1, 2, 3, 4 &5), are potentially applicable for the Direct Install program which can fund up to 60% of the installed cost. This facility, like others with demand higher than 200KW are excluded; however, these facilities can still participate in the Direct Install program when funding through the Energy Efficiency Conservation Block Grant (EECBG) is included in the project.

When ECMs are packaged into one large project, the ECMs with faster paybacks have the ability to help finance the higher cost ECMs. The package of all ECMs shown above (ECMs 1-6) has the potential to qualify for implementation through the Energy Savings Improvement Program (ESIP). This program provides a method for public facilities to finance large projects with energy savings achieve through implementation. The ESIP program allows implementation of projects without the entity acquiring "new debt". In addition the ESIP program will utilize funding from the other NJ Clean Energy Programs as well. Please see the Installation and funding options section of this report for more details on the Direct Install and ESIP programs.

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.
5. 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.

Renewable Energy Measures (REMs) were also reviewed for implementation at the Burlington Township Middle School at Springside. CEG utilized a ground mounted parking lot canopy solar array to house a substantial PV system. The recommended 321.54 kW PV system will produce approximately 399,544 kWh of electricity annually and will reduce the schools electrical consumption from the grid by 21.48%. The system's calculated simple payback of 14.37 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.

Overall, the Burlington Township Middle School at Springside appears to be operating at a low efficiency level compared to other schools in the region. With the implementation of the above recommended measures the Burlington Township BOE will realize further energy savings at the Burlington Township Middle School at Springside.

II. INTRODUCTION

The comprehensive energy audit covers the 182,000 square foot Burling Township Middle School at Springside, which includes the following spaces: classrooms, offices, corridors, cafeteria, computer room, gymnasium, locker rooms, fitness center, kitchen, industrial tech lab, storage, restrooms and mechanical room.

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/ft^2/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:

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

$$Simple\ Lifetime\ Savings = \left(Yearly\ Savings \times ECM\ Lifetime \right)$$

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

$$Lifetime\ Ma\,\mathrm{int}\,enance\ Savings = \left(Yearly\ Ma\,\mathrm{int}\,enance\ Savings \times ECM\ Lifetime \right)$$

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

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

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 Basic Gas Supply Service (BGSS) - Firm Transportation (LVG) rate structure. A Third Part Supplier (TPS) has not been contracted. 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:

Description	Average
Electricity	15.4¢ / kWh
Natural Gas	$1.08 / Therm

Table 3
Electricity Billing Data

ELECTRIC USAGE SUMMARY

Utility Provider: PSE&G
Rate: LPLS
Meter No: 778010576
Account No. 42 002 272 07
Third Party Utility Provider: South Jersey Energy
TPS Meter / Acct No:

MONTH OF USE	CONSUMPTION	DEMAND	TOTAL BILL
Mar-09	173,400	474.0	$25,573
Apr-09	137,400	633.0	$21,699
May-09	159,600	597.0	$25,793
Jun-09	142,800	624.0	$25,506
Jul-09	135,600	609.0	$24,470
Aug-09	110,700	570.0	$20,913
Sep-09	172,500	651.0	$24,745
Oct-09	156,000	564.0	$22,311
Nov-09	145,800	504.0	$20,804
Dec-09	181,800	513.0	$25,543
Jan-10	174,900	504.0	$24,915
Feb-10	169,800	510.0	$24,269
Totals	**1,860,300**	**651.0 Max**	**$286,542**

AVERAGE DEMAND **562.8 KW average**
AVERAGE RATE **$0.154** **$/kWh**

Figure 1
Electricity Usage Profile

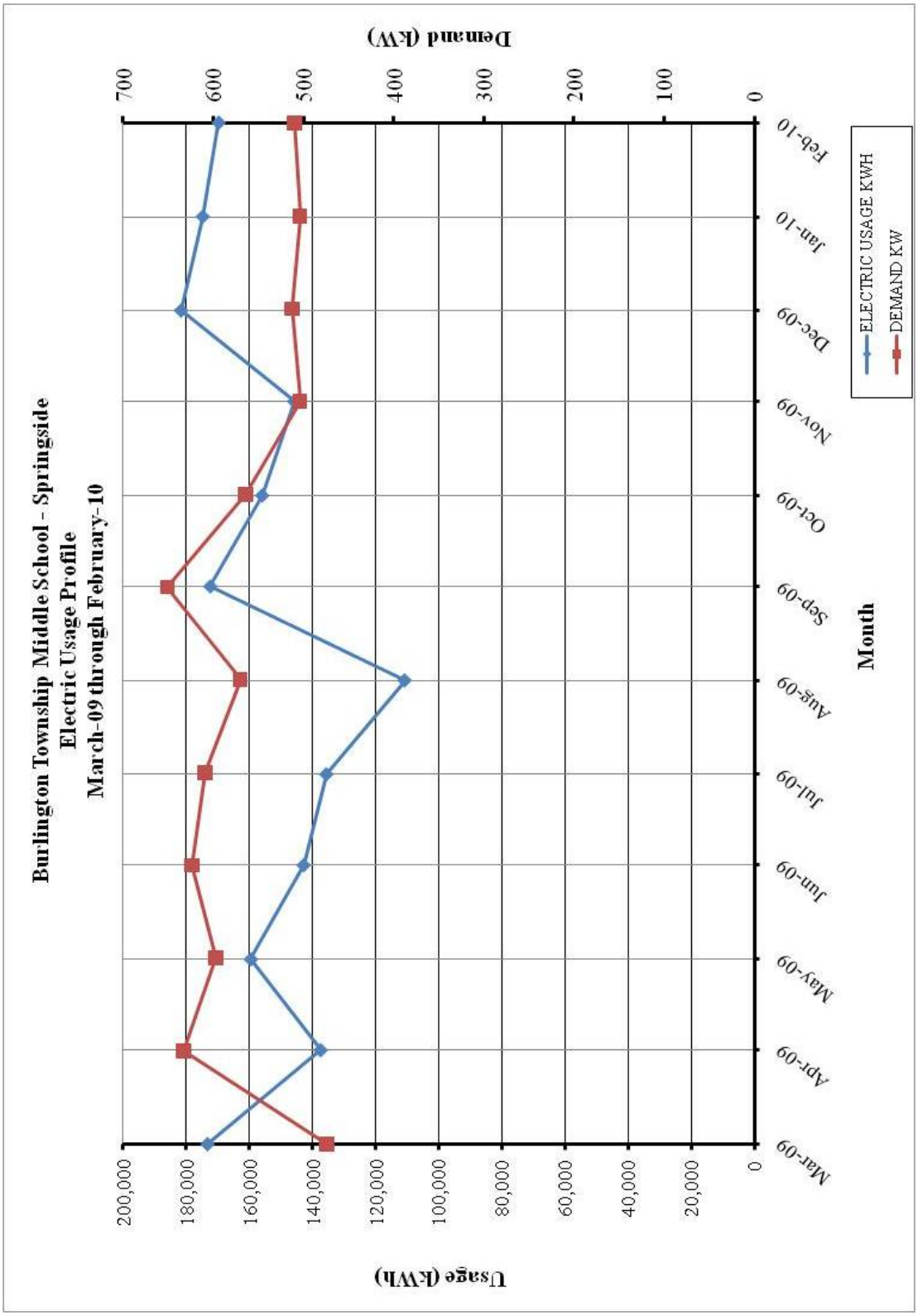
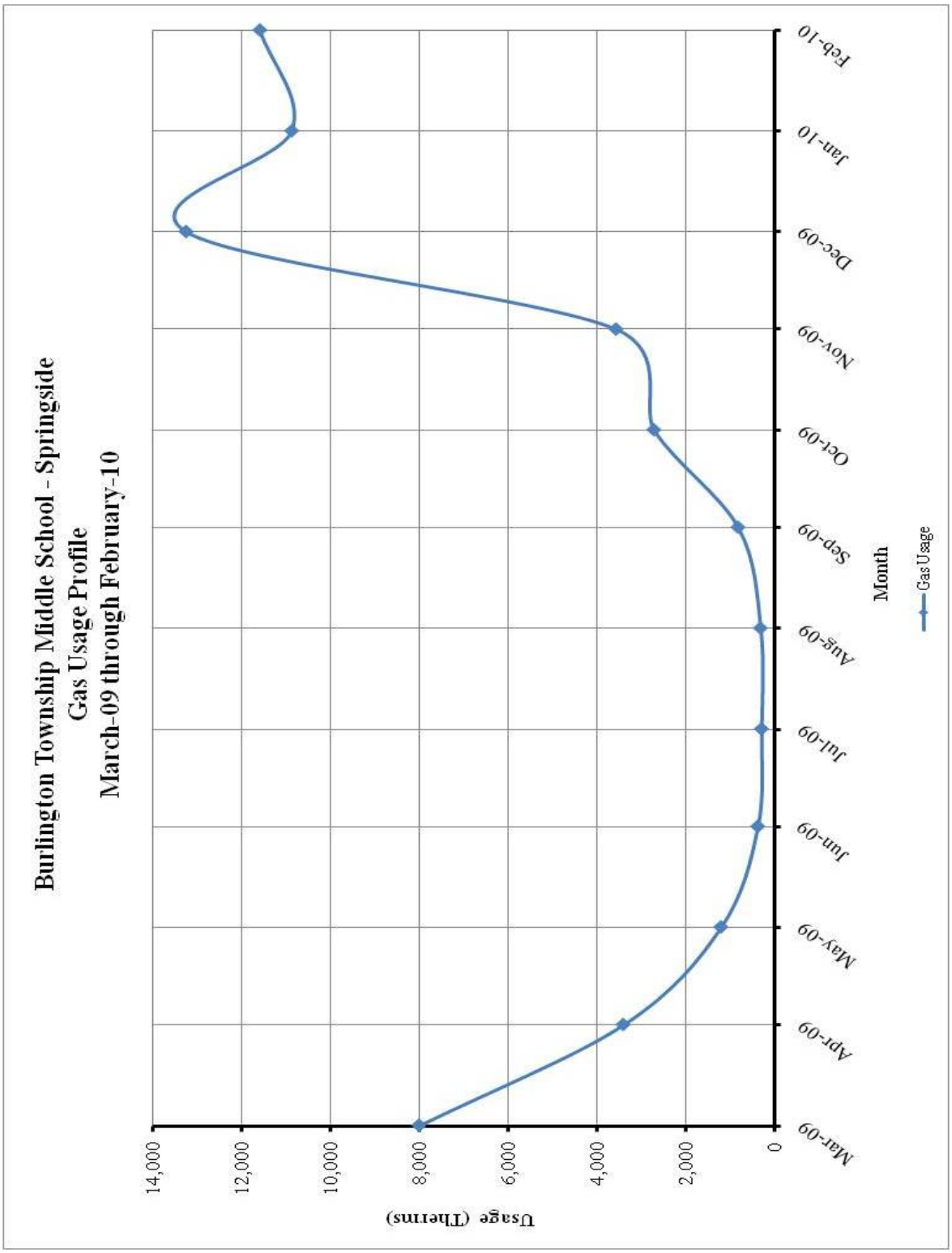


Table 4
Natural Gas Billing Data

NATURAL GAS USAGE SUMMARY		
Utility Provider:	PSE&G	
Rate:	LVG	
Meter No:	2600259	
Account No.	42 002 272 07	
Third Party Utility Provider:	n/a	
TPS Meter No:	n/a	
MONTH OF USE	**CONSUMPTION (THERMS)**	**TOTAL BILL**
Mar-09	8,013.34	$6,206.00
Apr-09	3,412.11	$2,463.32
May-09	1,212.83	$912.02
Jun-09	382.31	$361.35
Jul-09	298.18	$311.37
Aug-09	321.61	$310.45
Sep-09	825.58	$621.67
Oct-09	2,721.96	$4,430.32
Nov-09	3,575.59	$5,337.96
Dec-09	13,260.91	$14,374.15
Jan-10	10,880.19	$12,748.64
Feb-10	11,597.15	$12,717.23
TOTALS	**56,501.73**	**$60,794.48**
AVERAGE RATE:	**$1.08**	**$/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:

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

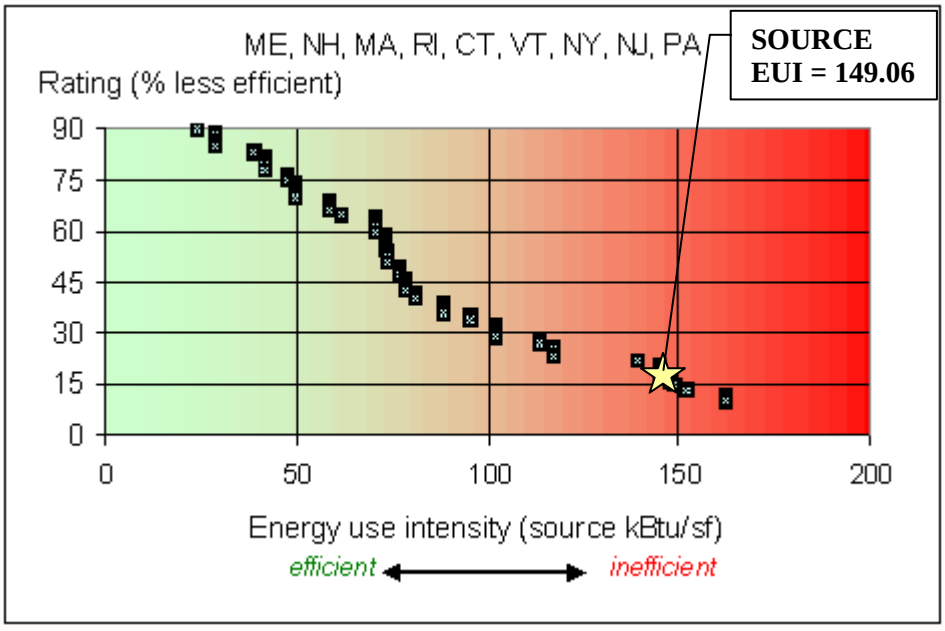
$$Building\ Source\ EUI = \frac{(Electric\ Usage\ in\ kBtu\ X\ SS\ Ratio + Gas\ Usage\ in\ kBtu\ X\ SS\ Ratio)}{Building\ Square\ Footage}$$

Table 5
Facility Energy Use Index (EUI) Calculation

ENERGY USE INTENSITY CALCULATION						
ENERGY TYPE	**BUILDING USE**			**SITE ENERGY**	**SITE-SOURCE RATIO**	**SOURCE ENERGY**
	kWh	**Therms**	**Gallons**	**kBtu**		**kBtu**
ELECTRIC	1,860,300			6,351,064	3.340	21,212,554
NATURAL GAS		56,502		5,650,173	1.047	5,915,732
TOTAL				12,001,238		27,128,286
*Site - Source Ratio data is provided by the Energy Star Performance Rating Methodology for Incorporating Source Energy Use document issued Dec 2007.						
BUILDING AREA		182,000	SQUARE FEET			
BUILDING SITE EUI		*65.9*	kBtu/SF/YR			
BUILDING SOURCE EUI		*149.1*	kBtu/SF/YR			

Figure 3 below depicts a national EUI grading for the source use of *Elementary School Buildings*.

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 Springside Middle	28	50

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

V. FACILITY DESCRIPTION

The 182,000 square foot Burling Township Middle School at Springside is a two story facility comprised of the following spaces: classrooms, offices, corridors, cafeteria, computer room, gymnasium, locker rooms, fitness center, kitchen, industrial tech lab, storage, restrooms and mechanical room.

The total number of occupancy at the Burlington Township Middle School is approximately 1,154 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 middle school; between 7:00AM and 3:30 PM. The facility is closed on weekends. The school is used minimally in the summer. However, the owner keeps buildings at occupied conditions to control temperature and humidity for staff and programs that may be occurring at the facility.

Exterior walls are block construction with minimum 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, ¼" clear glass with low-e and aluminum frames. The lower portion of the window is operable. Roll down shades are utilized through the facility per occupant comfort. The shades are valuable because they help to reduce heat loss in the winter and reduce solar heat in the summer. The majority of the roof is a pitched shingle roof system. A small flat portion of the roof is constructed of an EPDM roof system, where all rooftop HVAC equipment is located. The amount of insulation below the pitched roofing is unknown. The amount of insulation above the metal deck on the EPDM roofing is unknown. The building was built in 2006 with no additions since the original construction. Ponding water (water not draining) was noted on the EPDM roof.

HVAC Systems

The building is heated by three (3) Aerco Benchmark model BMK2.0 boilers in a primary/secondary/spare configuration. The boilers each have 2,000 MBH natural gas input and are 87% efficient. They are four (4) years old and are in good condition. The heating hot water is circulated throughout the building by two (2) Bell & Gossett model 1510 BF 11 5E pumps in a lead/lag configuration. The 40 hp pumps are rated at 780 GPM at 115 feet of head and are controlled by a variable frequency drive (VFD). The pumps are four (4) years old and are in good condition. The VFDs are four (4) years old and are in good condition.

The building is cooled by a Trane air cooled liquid chiller model RTAC having 500 nominal tons cooling. It is four (4) years old and is in good condition. The chilled water is circulated throughout the building by two (2) Bell & Gossett model 1510 BF 11.625 6G constant volume pumps in a primary/spare configuration. The 75 hp pumps are rated at 1450 GPM at 125 psig and are controlled by a variable frequency drive (VFD). The pumps are four (4) years old and are in good condition. The VFDs are four (4) years old and are in good condition.

There are six (6) Trane T-series roof-top central station air handling units with variable frequency drives (VFDs) nested on the flat roof near the media center. These units have chilled water and hot water pre-heat coils each with 3-way valves, on the four pipe system. The units

range from size 10 to size 25 with capacity ranging from 12.5 Tons to 31 Tons cooling and 128 MBH to 350 MBH heating capacity respectively. The roof top units are four (4) years old and are in good condition.

There are two (2) Trane M-series, indoor central station air handling units with variable frequency drives (VFDs). These units have chilled water and hot water pre-heat coils each with 3-way valves, on the four pipe system. The units are size 10 with a capacity of 15 Tons cooling and 110 MBH heating respectively. The indoor units are four (4) years old, are in good condition and have eleven (11) years of ASHRAE expected useful service life remaining.

There are eleven (11) Trane blower coil unit model series BCHC with chilled water and hot water heating coils on the four pipe system. The units have a capacity ranging from 1.5 Tons to 7.5 Tons cooling and 25 MBH to 150 MBH heating respectively. The blower coil units are four (4) years old and are in good condition.

There are twenty-two (22) Trane horizontal fan coil unit model series FCCB with chilled water and hot water heating coils on the four pipe system. The units have a capacity ranging from 8 MBH to 30 MBH cooling and 8 MBH to 70 MBH heating respectively. The blower coil units are four (4) years old and are in good condition.

There are seventy-nine (79) Trane unit ventilator models 750, 1000, 1250 and 1500 with chilled water and hot water heating coils on the four pipe system. The fan motors are fractional horsepower. The units have a capacity ranging from 30 MBH to 60 MBH cooling and 30 MBH to 70 MBH heating respectively. The unit ventilators are four (4) years old and are in good condition.

The system includes terminal single duct variable air volume (VAV) boxes with hot water re-heat for office zoning. Local thermostats control each VAV box's airflow to regulate space temperature. VAV box re-heat is activated in the heating season where additional heating is required and ranges from 14 MBH to 40 MBH.

Entrance doorways are heated via hot water cabinet heaters that range from 18 MBH to 32 MBH. The fan motors are fractional horsepower. The unit heaters are four (4) years old and are in good condition.

Exhaust System

There are 24 exhaust fans and one (1) supply fan. Eight (8) fans are fractional horsepower and the remaining fifteen (15) exhaust fans are 1 horsepower. All fans are controlled via interlock with mechanical equipment.

The kitchen hood is exhausted by EF-12, a Greenheck tube axial up-blast fan model TAUD-20-430-A10 with a 1 horsepower fan motor. The hood is supplied by SF-1, a Greenheck model BSQ-18CHP 2 horsepower fan. These fans are four (4) years old and in good condition.

HVAC System Controls

The HVAC systems within the facility are controlled via Honeywell Excel 5000 DDC system. The system indexes to occupied mode from 6:30am to 3:00 pm, Monday through Friday year round. The system is indexed to unoccupied during the remaining time during the year. The system set points are as follows:

Cooling Occupied:	72°F
Cooling Unoccupied:	80°F
Heating Occupied:	71°F
Heating Unoccupied:	65°F

During the building survey, a CO_2 sensor was located in classroom B109. This indicates the use of demand control ventilation, for the classroom unit ventilators, which is considered a state of the art technology. This is ideal for spaces with large occupancies that are unoccupied during occupied hours or used intermittently.

The large roof top units have an air side economizer that operates on dry bulb set point of 60°F. It was noted on the building survey that some of the economizers were enabled and some were disabled.

Domestic Hot Water

Domestic hot water for the building is provided by two (2) 23 gallon Aerco KC Series water boilers. They have a natural gas input of 1,000 MBH and a recovery rate of 1,116 gph at 100°F rise. 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. The domestic water boilers are four (4) years old and in good condition.

The kitchen booster water heater is a Hatco model C-54, 54 KW, 480 volt/ 3phase/ 60 Hertz input. The heater is rated at 542 gph at 40°F rise or 310 gph at 70°F rise. The domestic booster water heater is four (4) years old and in good condition.

The domestic water is circulated throughout the building by one (1) in-line pump with a Baldor model VL1319, 1.5 horsepower and 1725 rpm motor. The motor is rated at a nominal 68% efficient. The pump is four (4) years old and is in good condition.

Lighting

The lighting in the facility is primarily made up of fluorescent fixtures with T-8 lamps and electronic ballasts, some Metal Halide lamps and compact fluorescent lamps. The Cafeteria A & B utilize 400W metal halide 2x2 fixtures for lighting. The Gym and Auxiliary Gym utilizes 1000W metal halide up light fixtures for lighting.

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: Install NEMA Premium Efficient Pump Motor

Description:

Replacing the domestic hot water circulator pump motor with a new premium efficient motor is a simple change that can provide substantial savings.

Existing electric motors equal to or greater than one horsepower ranged from 78% to 93% efficient. 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 40-80 hours per week, even small increases in efficiency can yield substantial energy and dollar savings.

This energy conservation measure would replace all motors equal to or greater than 1 HP with NEMA Premium® Efficient Motors. NEMA Premium® is the most efficient motor designation in the marketplace today. Using MotorMaster+, Version 4, the energy & cost savings were calculated for the fan/pump motors in this facility that are greater than or equal to 1 HP.

Energy Savings Calculations:

Existing: A 1.5 HP system circulation pump Motor with the following characteristics:
Existing Motor Efficiency = 68%
Annual Hours of Operations = 4380 (Average)
1 HP = 0.746 Watt
Load Factor = 75%
Cost of electricity = $0.154 / kWh

Existing 1.5HP Motor Operating Cost =
[0.746 Watt/HP x Motor HP x Load Factor x Hours of Operation x Cost of Electricity] ÷ Motor Efficiency
= [0.746 x 1.5 x 0.75 x 4,380 x 0.154] ÷ 0.68 = $832 / Year

New NEMA Premium Motor Efficiency = 86.5%

New NEMA Premium Efficiency Motor Operating Cost =
= [0.746 x 1.5 x 0.75 x 4,380 x 0.154] ÷ 0.865 = $654 / Year

Savings = $832 - $654 = $178 / Year

Installed Cost of a 1.5 HP NEMA Premium® Efficiency Motor = $1,240 minus the SmartStart Building® incentive of 1.5hp x $50/motor is $1,190.

Simple Payback = $1,190 / $178 = 6.7 Years

kWh saved = $178 / $0.154/kWh = 1,155.8kWh
kW saved = 1,155.8 kWh / 4,380 hrs./yr. = 0.26 kW

A summary of calculation results is in the table below.

NEMA Premium Efficient Pump Motor Replacement						
Equipment Tag	**Motor HP**	**Existing Efficiency**	**NEMA Premium Efficiency**	**kW Savings**	**kWh Savings**	**Cost Savings**
DW Circ.	1.5	68.0%	86.5%	0.26	1,156	$178
Total Savings				**0.3**	**1,156**	**$178**

The following table outlines the motor replacement plan for this facility:

MOTOR REPLACEMENT PLAN							
Motor HP	**QTY**	**ENCL. TYPE**	**No. of POLEs**	**INSTALLED Cost ****	**TOTAL COST**	**TOTAL SAVINGS**	**Simple Payback**
1.5	1	TEFC	4-Pole	$1,240	$1,240	$178.05	7.0
				Totals:	*$1,240*	*$178*	*7.0*

**** Net Cost after the SmartStart Buildings® incentive is applied.**

Energy Savings Summary:

ECM #1 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$1,240
NJ Smart Start Equipment Incentive ($):	$50
Net Installation Cost ($):	$1,190
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$178
Total Yearly Savings ($/Yr):	$178
Estimated ECM Lifetime (Yr):	18
Simple Payback	6.7
Simple Lifetime ROI	169.2%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$3,204
Internal Rate of Return (IRR)	13%
Net Present Value (NPV)	$1,258.13

ECM #2: Computer Monitor Replacement

Description:

The computers throughout the facility utilize a mixture of CRT computer monitors and LCD computer monitors. Computers are located in the offices, computer labs, lounges, and classrooms. The CRT computer monitors are outdated and have several disadvantages such as; significantly increased energy consumption, uses large amount of desk space, poor picture quality, distortions and flickering image, secular glare problems, high weight, and electromagnetic emissions. Many of these 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.

Based on the site survey it was noted that in some conditions the computers were left on and allowed to run 24 / 7, while in other rooms the computers were shut down. Some 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 is based on manufacture's specifications.

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

Energy Savings Calculations:

No. of CRT Monitors:	9
Weeks per Yr:	40
Hrs per Week:	50 (10 hrs per day cumulative average)

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

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

COMPUTER MONITOR CALCULATIONS			
ECM INPUTS	**EXISTING**	**PROPOSED**	**SAVINGS**
ECM INPUTS	CRT Monitors	LCD Monitor	
# of Computers	9	9	
Monitor Power Cons. (W)	75	25	
Operating Hrs per Week	50	50	
Operating Weeks per Yr	40	40	
Elec Cost ($/kWh)	0.154	0.154	
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	**EXISTING**	**PROPOSED**	**SAVINGS**
Electric Usage (kWh)	1,350	450	900
Energy Cost ($)	$208	$69	$139
COMMENTS:	CRT Monitor consumption based on Dell CRT monitor M/N: CRT-E771MM. Operating hours based on estimated average.		

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.

Installation Costs: # Monitors X Cost per Monitor
9 Monitors X $100 per Monitor
$900

Energy Savings Summary:

ECM #2 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$900
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$900
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$139
Total Yearly Savings ($/Yr):	$139
Estimated ECM Lifetime (Yr):	15
Simple Payback	6.5
Simple Lifetime ROI	131.7%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$2,085
Internal Rate of Return (IRR)	13%
Net Present Value (NPV)	$759.37

ECM #3: Lighting Upgrade – Metal Halide Upgrade

Description: General

Metal Halide (MH) to fluorescent lamp

The Cafeterias A & B utilize 400W metal halide 2x2 fixtures for lighting. The Gym and Auxiliary Gym utilize 1000W metal halide up-light fixtures for lighting. The gym and auxiliary gym do not have reflective ceiling paint making the up-lighting very inefficient. Metal halide bulbs provide a reasonably efficient option for bay lighting however a few draw-backs 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). Typical values 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 Cafeteria A & B metal halide lamps with TT5 FTDL HO fluorescent lamps and the Gym and Auxiliary Gym high bay metal halide light fixtures with T5HO down light fixtures with reflective lenses. The replacement for the metal halide lamps includes a four low wattage for one high wattage lamp replacement. The fluorescent fixtures selected will provide equivalent light compared to the average light output of the existing metal halide fixtures. This ECM will also provide maintenance savings through the reduced number of lamps replaced per year. The expected lamp life of a T5HO lamp is approximately 30,000 burn-hours, in comparison to the existing Metal Halide lamps which is approximately 20,000 burn-hours. The facility will need 33% less lamps replaced per year.

Energy Savings Calculations:

The **Investment Grade Lighting Audit Appendix – ECM#3** outlines the proposed retrofits, costs, savings, and payback periods.

NJ Smart Start® Program 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

$$\text{Smart Start®}\ Incentive = \left(\#\ of\ 400wMetalHalideFixture\ \text{Re}\ placed \times\ \$100\right) = \underline{\$4{,}400}$$

$$\text{Smart Start®}\ Incentive = \left(44 \times\ \$100\right) = \underline{\$4{,}400}$$

For replacement of HID (≥1000W) with new T-5 or T-8 fixtures = $284/Fixture

$$\text{Smart Start®}\ Incentive = \left(\#\ of\ 1000wMetalHalideFixture\ \text{Re}\ placed \times\ \$284\right) = \underline{\$4{,}400}$$

$$\text{Smart Start®}\ Incentive = \left(100 \times\ \$284\right) = \underline{\$28{,}400}$$

Replacement and Maintenance Savings are calculated as follows:

$$Savings = \left(reduction\ in\ lamps\ replaced\ \ per\ \ year\right) \times \left(repacment\ \$\ \ per\ lamp + Labor\ \$\ \ per\ lamp\right)$$

$$Savings = \left(6\ lamps\ \ per\ \ year\right) \times \left(\$40.00 + \$25.00\right) = \$390$$

Energy Savings Summary:

ECM #3 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$60,480
NJ Smart Start Equipment Incentive ($):	$32,800
Net Installation Cost ($):	$27,680
Maintenance Savings ($/Yr):	$390
Energy Savings ($/Yr):	$38,586
Total Yearly Savings ($/Yr):	$38,976
Estimated ECM Lifetime (Yr):	15
Simple Payback	0.7
Simple Lifetime ROI	2012.1%
Simple Lifetime Maintenance Savings	$5,850
Simple Lifetime Savings	$584,640
Internal Rate of Return (IRR)	141%
Net Present Value (NPV)	$437,612.96

ECM #4: LIGHTING UPGRADE – De-lamping

Description:

The lighting in the facility is primarily made up of fluorescent fixtures with T-8 lamps and electronic ballasts; and some remaining Metal Halide lamps. These metal halide lamps consume a large amount of power while on and can be replaced with a much more energy efficient fixture. Refer to ECM #3 for the metal halide upgrade.

There are several locations in the Burlington Township Middle School that have efficient T8 fluorescent lighting with electronic ballasts. The lighting provided for these areas are in excess of normal lighting levels. Therefore, this ECM will de-lamp the fixtures in the over lit areas. 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 Burlington Township Middle School building is provided with modern fixtures with T8 lamps and electronic ballasts. There are several spaces where lighting is excessive and should be de-lamped. The over lit spaces are the Copy Room A, Faculty Dining, Fitness Center and the following corridors: A 200, Guidance, Media Center, B 200, C 200, C 100, D 100, B 100, A 100 and Cafeteria corridors.

PROPOSED LIGHTING		SAVINGS			
Summary	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
ECM #4 De Lamp	$7,006	12.4	36,747.6	$5,659	1.2

Rebates and Incentives:

NJ Smart Start® Program Incentives are calculated as follows:

From the **Smart Start Incentive Appendix**, De-lamping without changing the ballast does not qualify for an incentive.

There is no significant replacement and Maintenance Savings generated by this replacement.

Energy Savings Summary:

ECM #4 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$7,006
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$7,006
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$5,659
Total Yearly Savings ($/Yr):	$5,659
Estimated ECM Lifetime (Yr):	15
Simple Payback	1.2
Simple Lifetime ROI	1111.6%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$84,885
Internal Rate of Return (IRR)	81%
Net Present Value (NPV)	$60,550.77

ECM #5: Lighting Controls Upgrade

Description:

Some of the lights in the Burlington Township Middle School building are left on unnecessarily. In many cases the lights are left on because of the inconvenience to manually switch lights off and on. 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.

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.

Savings resulting from the implementation of this ECM for energy management controls are estimated to be 25% of the total light energy controlled by occupancy sensors and 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:

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

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

Cost and Incentives:

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

Dual Technology Occupancy switch Mounted Sensor	$75 per installation
Dual Technology Occupancy Remote Mounted Sensor	$160 per installation
2 Pole Power Pack w/Dual Tech. Occupancy Sensor	$225 per installation
Daylight Sensor	$160 per installation

Cost includes material and labor.

From the **NJ Smart Start® Program Incentives Appendix**, the installation of a lighting control device warrants the following incentive:
Daylight sensor: Does not qualify for an incentive.

Energy Savings Summary:

ECM #5 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$1,440
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$1,440
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$1,173
Total Yearly Savings ($/Yr):	$1,173
Estimated ECM Lifetime (Yr):	15
Simple Payback	1.2
Simple Lifetime ROI	1121.9%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$17,595
Internal Rate of Return (IRR)	81%
Net Present Value (NPV)	$12,563.20

ECM #6: School Kitchen Exhaust Hood Controls

Description:

The Burlington Township Middle School at Springside kitchen is equipped with one exhaust hood for the cooking range. The size of each range hood is 5'x20'. The kitchen exhaust fan is controlled manually by a switch on the kitchen hoods.

Standard kitchen hood control consist of switches and relays that interlock the kitchen grease hood exhaust fan(s) with the 100% outside air unit that provides make-up air for this system. This school's system has both RTU-4 and RTU-5 providing make-up air to the cafeteria and SF-1 transferring air from the cafeteria into the hood. Normal occupation of kitchen hood system is limited to occupied hours. During the site inspection it was noted that the kitchen exhaust fan runs for approximately 8 hours a day. Based on the operation, there is great potential energy savings through better controls of the hood exhaust fan and make-up air unit.

This energy conservation measure 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 actual 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 about of air, saving energy.

Energy Calculations Summary:

Detailed calculations for the proposed kitchen hood control system can be found in **Appendix G – Melink Calculations**. 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 $13,000. The calculated energy savings equals approximately $935 per year.

Energy Savings Summary:

ECM #6 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$13,000
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$13,000
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$935
Total Yearly Savings ($/Yr):	$935
Estimated ECM Lifetime (Yr):	15
Simple Payback	13.9
Simple Lifetime ROI	7.9%
Simple Lifetime Maintenance Savings	0
Simple Lifetime Savings	$14,025
Internal Rate of Return (IRR)	1%
Net Present Value (NPV)	($1,838.03)

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 the Burlington Township Middle School at Springside 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 are mounted on all south and southwestern facades of the building. Flat roof, as well as sloped areas can be utilized; flat areas will have the panels turned to an optimum solar absorbing angle. (A structural survey of the roof would be necessary before the installation of PV panels is considered). 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 roof area and site of Burlington Township Middle School at Springside 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 20,550 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 321.54 kilowatts could be installed. A system of this size has an estimated kilowatt hour production of 399,544 KWh annually, reducing the overall utility bill by approximately 21.48% 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	14.37 Years	6.9%	5.4%

*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 school to invest in a solar system through a Direct Purchase CEG does not recommend the school pursue this route. It would be more advantageous for the school 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 school at a reduced rate compared to their existing electric rate.

Wind Generation

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 for purchase of a commercial wind turbine. 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 155,025kWh and an average monthly demand of 563kW. Largest consumption months were December, January – March 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 9,465 therms and the average summer (Apr-Oct) consumption is 1,310 therms. The largest consumption month is December at 13,261 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). This facility is currently receiving natural gas commodity supply from the utility, PSE&G on Basic Gas Supply Service (BGSS).

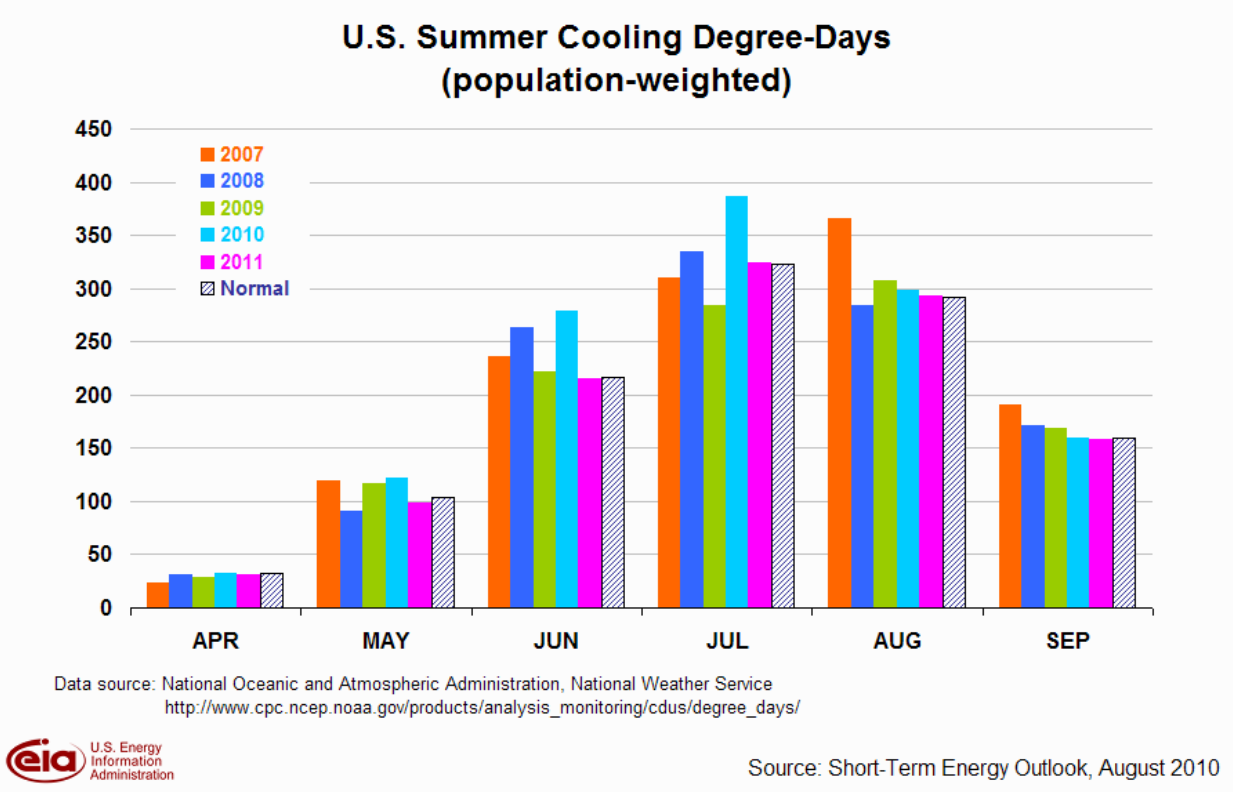
PSE&G provides basic gas supply service (BGSS) to customers who choose not to shop from a Third Party Supplier (TPS) for natural gas commodity. The option is essential to protect the reliability of service to consumers as well as protecting consumers if a third party supplier defaults or fails to provide 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. However this facility is currently not procuring natural gas through a TPS. By aggregating 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. This facility could realize up to a 20% reduction in energy supply costs for natural gas, if it were to aggregate usage with other schools and take advantage of these current market prices quickly, before energy increases.

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 par 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 shown 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.

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 Means™ 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 Middle School at Springside

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 (IRR)	NET PRESENT VALUE (NPV)
		MATERIAL	LABOR	REBATES, INCENTIVES	NET INSTALLATION COST	ENERGY	MAINT. / SREC	TOTAL		(Yearly Saving * ECM Lifetime)	(Yearly Maint Svaing * ECM Lifetime)	(Lifetime Savings - Net Cost) / (Net Cost)	(Net cost / Yearly Savings)	$\sum_{n=0}^{N} \frac{C_n}{(1+IRR)^n}$	$\sum_{n=0}^{N} \frac{C_n}{(1+DR)^n}$
		($)	($)	($)	($)	($/Yr)	($/Yr)	($/Yr)	(Yr)	($)	($)	(%)	(Yr)	($)	($)
ECM #1	Premium Efficiency Pump Motor Upgrade	$1,240	$0	$50	$1,190	$178	$0	$178	18	$3,204	$0	169.2%	6.7	13.40%	$1,258.13
ECM #2	CRT Computer Monitor Upgrade	$900	$0	$0	$900	$139	$0	$139	15	$2,085	$0	131.7%	6.5	12.96%	$759.37
ECM #3	Lighting Upgrade - Metal Halide	$60,480	$0	$32,800	$27,680	$38,586	$390	$38,976	15	$584,640	$5,850	2012.1%	0.71	140.81%	$437,612.96
ECM #4	Lighting Upgrade - Delamping	$7,006	$0	$0	$7,006	$5,659	$0	$5,659	15	$84,885	$0	1111.6%	1.2	80.76%	$60,550.77
ECM #5	Lighting Controls	$1,440	$0	$0	$1,440	$1,173	$0	$1,173	15	$17,595	$0	1121.9%	1.2	81.45%	$12,563.20
ECM #6	Melink System	$13,000	$0	$0	$13,000	$935	$0	$935	15	$14,025	$0	7.9%	13.9	0.96%	($1,838.03)
REM RENEWABLE ENERGY AND FINANCIAL COSTS AND SAVINGS SUMMARY															
REM #1	Parking Canopy PV 321.54 KW System	$2,893,860	$0	$0	$2,893,860	$61,530	$139,840	$201,370	25	$5,034,250	$3,496,000	74.0%	14.4	4.81%	$612,625.55

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.

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VOORHEES, NEW JERSEY 08043
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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 ≥ 16 $600 per ton, EER ≥ 18 $750 per ton, EER ≥ 20

Energy Efficiency must comply with ASHRAE 90.1-2004

Gas Heating

Gas Fired Boilers < 300 MBH	$300 per unit
Gas Fired Boilers ≥ 300 - 1500 MBH	$1.75 per MBH
Gas Fired Boilers ≥1500 - ≤ 4000 MBH	$1.00 per MBH
Gas Fired Boilers > 4000 MBH	(Calculated through Custom Measure Path)
Gas Furnaces	$300 - $400 per unit, AFUE ≥ 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 ≤ 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 ≥ 100w Retrofit with induction lamp, power coupler and generator (must be 30% less watts/fixture than HID system)	$50 per fixture
HID ≥ 100w Replacement with new HID ≥ 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
Burlington Twp Middle School at Springside

Building ID: 2475337
For 12-month Period Ending: February 28, 2010[1]
Date SEP becomes ineligible: N/A
Date SEP Generated: October 05, 2010

Facility
Burlington Twp Middle School at Springside
1600 Burlington Bypass
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: 2006
Gross Floor Area (ft²): 182,000

Energy Performance Rating[2] (1-100) 28

Site Energy Use Summary[3]

Electricity - Grid Purchase(kBtu)	6,347,344
Natural Gas (kBtu)[4]	5,650,176
Total Energy (kBtu)	11,997,520

Energy Intensity[5]

Site (kBtu/ft²/yr)	66
Source (kBtu/ft²/yr)	149

Emissions (based on site energy use)

Greenhouse Gas Emissions ($MtCO_2e$/year)	1,267

Electric Distribution Utility
Public Service Elec & Gas Co

National Average Comparison

National Average Site EUI	54
National Average Source EUI	122
% Difference from National Average Source EUI	22%
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 Standards[6] **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	☑
Building Name	Burlington Twp Middle School at Springside	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	K-12 School	Is this an accurate description of the space in question?		☐
Location	1600 Burlington Bypass, Burlington, NJ 08016	Is this address accurate and complete? Correct weather normalization requires an accurate zip code.		☐
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		☐
Middle School at Springside (K-12 School)				
CRITERION	**VALUE AS ENTERED IN PORTFOLIO MANAGER**	**VERIFICATION QUESTIONS**	**NOTES**	☑
Gross Floor Area	182,000 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.		☐
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.		☐
Number of PCs	319 (Default)	Is this the number of personal computers in the K12 School?		☐
Number of walk-in refrigeration/freezer units	2 (Default)	Is this the total number of commercial walk-in type freezers and coolers? These units are typically found in storage and receiving areas.		☐
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".		☐
Percent Cooled	90 %	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	90 %	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐
Months	10(Optional)	Is this school in operation for at least 8 months of the year?		☐

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'.		

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	169,800.00
01/01/2010	01/31/2010	174,900.00
12/01/2009	12/31/2009	181,800.00
11/01/2009	11/30/2009	145,800.00
10/01/2009	10/31/2009	156,000.00
09/01/2009	09/30/2009	172,500.00
08/01/2009	08/31/2009	110,700.00
07/01/2009	07/31/2009	135,600.00
06/01/2009	06/30/2009	142,800.00
05/01/2009	05/31/2009	159,600.00
04/01/2009	04/30/2009	137,400.00
03/01/2009	03/31/2009	173,400.00
Electric Consumption (kWh (thousand Watt-hours))		**1,860,300.00**
Electric Consumption (kBtu (thousand Btu))		**6,347,343.60**
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		**6,347,343.60**
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☐

Fuel Type: Natural Gas

Meter: Gas (therms)
Space(s): Entire Facility

Start Date	End Date	Energy Use (therms)
02/01/2010	02/28/2010	11,597.15
01/01/2010	01/31/2010	10,880.19
12/01/2009	12/31/2009	13,260.91
11/01/2009	11/30/2009	3,575.59
10/01/2009	10/31/2009	2,721.96
09/01/2009	09/30/2009	825.58
08/01/2009	08/31/2009	321.61
07/01/2009	07/31/2009	298.18
06/01/2009	06/30/2009	382.31
05/01/2009	05/31/2009	1,212.83

04/01/2009	04/30/2009	3,412.11
03/01/2009	03/31/2009	8,013.34
Gas Consumption (therms)		**56,501.76**
Gas Consumption (kBtu (thousand Btu))		**5,650,176.00**
Total Natural Gas Consumption (kBtu (thousand Btu))		**5,650,176.00**
Is this the total Natural Gas consumption at this building including all Natural Gas meters?		☐

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.	☐

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.	☐

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.

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
Burlington Twp Middle School at Springside
1600 Burlington Bypass
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

Burlington Twp Middle School at Springside	
Gross Floor Area Excluding Parking: (ft^2)	182,000
Year Built	2006
For 12-month Evaluation Period Ending Date:	February 28, 2010

Facility Space Use Summary

Middle School at Springside	
Space Type	K-12 School
Gross Floor Area(ft^2)	182,000
Open Weekends?	No
Number of PCs[d]	319
Number of walk-in refrigeration/freezer units[d]	2
Presence of cooking facilities	Yes
Percent Cooled	90
Percent Heated	90
Months[o]	10
High School?	No
School District[o]	Burlington

Energy Performance Comparison

	Evaluation Periods		Comparisons		
Performance Metrics	**Current** (Ending Date 02/28/2010)	**Baseline** (Ending Date 02/28/2010)	**Rating of 75**	**Target**	**National Average**
Energy Performance Rating	28	28	75	N/A	50
Energy Intensity					
Site (kBtu/ft^2)	66	66	42	N/A	54
Source (kBtu/ft^2)	149	149	96	N/A	122
Energy Cost					
$/year	$ 347,335.48	$ 347,335.48	$ 222,880.63	N/A	$ 285,002.67
$/$ft^2$/year	$ 1.91	$ 1.91	$ 1.23	N/A	$ 1.57
Greenhouse Gas Emissions					
$MtCO_2e$/year	1,267	1,267	813	N/A	1,040
$kgCO_2e/ft^2$/year	7	7	4	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.

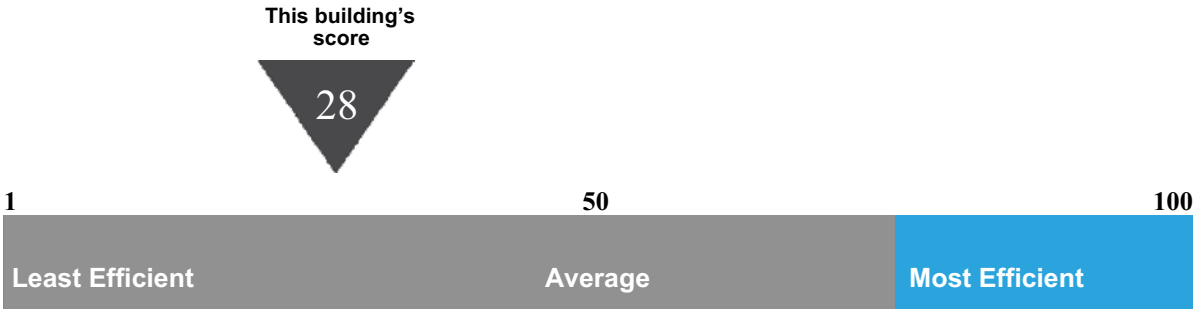
Statement of Energy Performance

2010

Burlington Twp Middle School at Springside
1600 Burlington Bypass
Burlington, NJ 08016

Portfolio Manager Building ID: 2475337

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit energystar.gov/benchmark.



This building uses 149 kBtu per square foot per year.*

*Based on source energy intensity for the 12 month period ending February 2010

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

I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at energystar.gov

Date of certification

EPA United States Environmental Protection Agency

Date Generated: 10/05/2010

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington Township Middle School at Spring Side

Rooftop / AC Units

Tag	BC-1 (AHU-1)	BC-2 (AHU-2)	BC-3 (AHU-3)
Unit Type	Blower Coil	Blower Coil	Blower Coil
Qty	1	1	1
Location	Indoor	Indoor	Indoor
Area Served	Main Office	Health Suite	D103 Music
Manufacturer	Trane	Trane	Trane
Model #	BCHC054E1**A1A	BCHC036E1**A1A	BCHC054E1**A1A
Serial #	-	-	-
Cooling Type	CHW	CHW	CHW
Cooling Capacity (Tons)	4.0	2	7.0
Cooling Efficiency (SEER/EER)	-	-	-
Heating Type	HW	HW	HW
Heating Input (MBH)	40	15.8	90
Efficiency	-	-	-
Fuel	208/3/60	208/3/60	208/3/60
Approx Age	4	4	4
ASHRAE Service Life	15	15	15
Remaining Life	11	11	11
Comments	available 1/3 - 3 hp	available 1/3 - 3 hp	available 1/3 - 3 hp

Rooftop / AC Units

Tag	BC-4 (AHU-4)	AHU-5	AHU-6
Unit Type	Blower Coil	Indoor Central Station	Indoor Central Station
Qty	1	1	1
Location	Indoor	-	-
Area Served	D105 Music	LMC	LMC
Manufacturer	Trane	TRANE	TRANE
Model #	BCHC036E1**A1A	MCCB010	MCCB010
Serial #	-	-	-
Cooling Type	CHW	CHW	CHW
Cooling Capacity (Tons)	5	15	15
Cooling Efficiency (SEER/EER)	-	-	-
Heating Type	HW	HW	HW
Heating Input (MBH)	60	110	110
Efficiency	-	-	-
Fuel	208/3/60	480/3/60	480/3/60
Approx Age	4	4	4
ASHRAE Service Life	15	15	15
Remaining Life	11	11	11
Comments	available 1/3 - 3 hp	-	-

Rooftop / AC Units

Tag	BC-7 (AHU-7)	BC-8 (AHU-8)	BC-9 (AHU-9)
Unit Type	Blower Coil	Blower Coil	Blower Coil
Qty	1	1	1
Location	Indoor	Indoor	Indoor
Area Served	Office 2nd Fl	Kitchen Area	Boys Locker Room
Manufacturer	Trane	Trane	Trane
Model #	BCHC090E1**A1A	BCHC090E1**A1A	BCHC090E1**A1A
Serial #	-	-	-
Cooling Type	CHW	CHW	CHW
Cooling Capacity (Tons)	7	7.5	6.5
Cooling Efficiency (SEER/EER)	-	-	-
Heating Type	HW	HW	HW
Heating Input (MBH)	75	150	110
Efficiency	-	-	-
Fuel	208/3/60	208/3/60	208/3/60
Approx Age	4	4	4
ASHRAE Service Life	15	15	15
Remaining Life	11	11	11
Comments	available 1/3 - 3 hp	available 1/3 - 3 hp	available 1/3 - 3 hp

Rooftop / AC Units

Tag	BC-10 (AHU-10)	BC-11 (AHU-11)	BC-12 (AHU-12)
Unit Type	Blower Coil	Blower Coil	Blower Coil
Qty	1	1	1
Location	Indoor	Indoor	Indoor
Area Served	Conf Rm 203	Conf Rm 203 A	Computer Rm 205
Manufacturer	Trane	Trane	Trane
Model #	BCHC024E1**A1A	BCHC024E1**A1A	BCHC054E1**A1A
Serial #	-	-	-
Cooling Type	CHW	CHW	CHW
Cooling Capacity (Tons)	1.5	1.5	4.0
Cooling Efficiency (SEER/EER)	-	-	-
Heating Type	HW	HW	HW
Heating Input (MBH)	25	25	60
Efficiency	-	-	-
Fuel	208/3/60	208/3/60	208/3/60
Approx Age	4	4	4
ASHRAE Service Life	15	15	15
Remaining Life	11	11	11
Comments	available 1/3 - 3 hp	available 1/3 - 3 hp	available 1/3 - 3 hp

Rooftop / AC Units

Tag	BC-13 (AHU-13)	Hood #1, 2	EF-12
Unit Type	Blower Coil	Kitchen MAU	Tube Axial Upblast
Qty	1	2	1
Location	Indoor	Roof	Roof
Area Served	Computer Rm 207	Kitchen Cooking hood	Kitchen Hood
Manufacturer	Trane	Captive-Aire Systems	Greenheck
Model #	BCHC024E1**A1A	5730 NFR	TAUD-20-430-A10
Serial #	-	-	-
Cooling Type	CHW	-	-
Cooling Capacity (Tons)	4	-	-
Cooling Efficiency (SEER/EER)	-	-	-
Heating Type	HW	-	-
Heating Input (MBH)	60	-	-
Efficiency	-	-	-
Fuel	208/3/60	-	460/3/60
Approx Age	4	4	4
ASHRAE Service Life	15	15	15
Remaining Life	11	11	11
Comments	available 1/3 - 3 hp	-	1HP Motor, 460/3/60 ODP

Rooftop / AC Units

Tag	RTU-1	RTU-2	RTU-3
Unit Type	Outdoor Central Station	Outdoor Central Station	Outdoor Central Station
Qty	1	1	1
Location	ROOF	ROOF	ROOF
Area Served	Gym	Gym	Fitness Area
Manufacturer	TRANE	TRANE	TRANE
Model #	TSCB021U0C00000000AAB0A276.5	TSCB021U0C00000000AAB0A276.5	TSCB010U0C00000000AAB0A247.5
Serial #	K06E67108	K06E67155	K06E67118
Cooling Type	CHW	CHW	CHW
Cooling Capacity (Tons)	32	32	8.3
Cooling Efficiency (SEER/EER)	-	-	-
Heating Type	HW	HW	HW
Heating Input (MBH)	350	350	128
Efficiency	-	-	-
Fuel	-	-	-
Approx Age	4	4	4
ASHRAE Service Life	15	15	15
Remaining Life	11	11	11
Comments	460/3/60, 15 HP supply, 5 HP return	460/3/60, 15 HP supply, 5 HP return	460/3/60, 2 HP supply

Rooftop / AC Units

Tag	RTU-4	RTU-5	RTU-6
Unit Type	Outdoor Central Station	Outdoor Central Station	Outdoor Central Station
Qty	1	1	1
Location	ROOF	ROOF	ROOF
Area Served	Cafeteria	Cafeteria	Aux. Gym
Manufacturer	TRANE	TRANE	TRANE
Model #	TSCB021U0C00000000AAB0A276.5	TSCB021U0C00000000AAB0A276.5	TSCB025U0C00000000AAB0A240.0
Serial #	K06E67128	K06E67135	K06E67146
Cooling Type	CHW	CHW	CHW
Cooling Capacity (Tons)	28.5	28.5	31
Cooling Efficiency (SEER/EER)	-	-	-
Heating Type	HW	HW	HW
Heating Input (MBH)	322	322	300
Efficiency	-	-	-
Fuel	-	-	-
Approx Age	4	4	4
ASHRAE Service Life	15	15	15
Remaining Life	11	11	11
Comments	460/3/60, 5 HP supply & return	460/3/60, 5 HP supply & return	460/3/60, 7.5 HP supply & return

Rooftop / AC Units

Tag	FC-22	-	-
Unit Type	FAN COIL	-	-
Qty	1	-	-
Location	Indoor	-	-
Area Served	-	-	-
Manufacturer	Trane	-	-
Model #	FCCB1201KAAF0A00BF2M0000D1QJDG40002000000000	-	-
Serial #	T06J51061	-	-
Cooling Type	3 Row CHW	-	-
Cooling Capacity (MBH)	30	-	-
Cooling Efficiency (SEER/EER)	-	-	-
Heating Type	1 Row HW	-	-
Heating Input (MBH)	30	-	-
Efficiency	-	-	-
Fuel	115/1/60	-	-
Approx Age	4	-	-
ASHRAE Service Life	15	-	-
Remaining Life	11	-	-
Comments	High Static motor, 2-way modulating, Tracer ZN520	-	-

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington Township Middle School at Spring Side

Boilers

Tag	B-1	B-2	B-3
Unit Type	Condensing Boiler	Condensing Boiler	Condensing Boiler
Qty	1	1	1
Location	Mechanical Room	Mechanical Room	Mechanical Room
Area Served	Heating System	Heating System	Heating System
Manufacturer	Aerco	Aerco	Aerco
Model #	BMK2.0	BMK2.0	BMK2.0
Serial #	G-06-0599 NB#:44578	G-06-0600 NB#:44579	G-06-0598 NB#:44577
Input Capacity (MBH)	2,000	2,000	2,000
Rated Output Capacity (MBH)	1,720	1,720	1,720
Approx. Efficiency %	87%	87%	87%
Fuel	Natural Gas	Natural Gas	Natural Gas
Approx Age	6	6	6
ASHRAE Service Life	30	30	30
Remaining Life	24	24	24
Comments	Set point 130°F, Style GB431NR35	Set point 130°F, Style GB431NR35	Set point 130°F, Style GB431NR35

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington Township Middle School at Spring Side

Chiller

Tag	CH-1	-	-
Unit Type	Air Cooled	-	-
Qty	1	-	-
Location	Grade adjacent to mechanical room	-	-
Area Served	HVAC Chilled Water	-	-
Manufacturer	Trane	-	-
Model #	RTAC 5004 UPON UAFN L1TY 1CDL	-	-
Serial #	U06J09358	-	-
Refrigerant	R134A	-	-
Cooling Capacity (Tons)	500	-	-
Cooling Efficiency (KW/Ton)	9.6 EER / 14.9 Part Load EER	-	-
Volts / Phase / Hz	460/3/60	-	-
Fuel	ELECTRIC	-	-
Chilled Water GPM / ΔT	1143 GPM / 10°F	-	-
Condenser Water GPM / ΔT	Air Cooled, DX	-	-
Approx Age	4	-	-
ASHRAE Service Life	23	-	-
Remaining Life	19	-	-
Comments	Pump 1450 GPM max., 56% VFD	-	-

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington Township Middle School at Spring Side

Domestic Water Heaters

Tag			
Unit Type	Booster	Domestic water heater	Domestic water heater
Qty	1	1	1
Location	Kitchen	Boiler Room	Boiler Room
Area Served	Kitchen	Bldg Domestic Water	Bldg Domestic Water
Manufacturer	Hatco	Aerco	Aerco
Model #	C-54	KC-1000 GWW	KC-1000 GWW
Serial #	-	G-06-0446 NBR:NJ000099959H	G-06-0446 NBR:NJ000099958H
Size (Gallons)	-	23	23
Input Capacity (MBH/KW)	54	1,000 MBH	1,000 MBH
Recovery (Gal/Hr)	542 gph @ 40°F rise 310 gph @ 70°F rise	1,116 gph @ 100°F rise	1,116 gph @ 100°F rise
Efficiency %	-	95.0%	95.0%
Fuel	480-3-60	Natural Gas	Natural Gas
Approx Age	4	6	6
ASHRAE Service Life	12	25	25
Remaining Life	8	19	19
Comments	-	Standby 40 watts	Standby 40 watts

MAJOR EQUIPMENT LIST

Concord Engineering Group

Burlington Township Middle School at Spring Side

Pumps

Tag			
Unit Type	Fire Pump	Jockey Pump	Re-Circ Pump
Qty	1	1	1
Location	Mech Rm	Mech Room	Boiler Room
Area Served	Fire Sprinkler System	Fire Sprinkler System	Dom. Water
Manufacturer	Aurora	Marathon Electric	Baldor
Model #	4-383-7B	DVC 56T35D5559B P	VL1319
Serial #	06-1383376	-	FO803262082
Horse Power	30	1.00	1.5
Flow	500 GPM @ 71 PSI	-	10 GPM @ 54 Ft HD
Motor Info	-	-	ODFT
Electrical Power	460-3-60	208-230 / 460	115/230
RPM	3500	3450	1725
Motor Efficiency %	91.0%	82.5%	68%
Approx Age	4	4	4
ASHRAE Service Life	20	10	10
Remaining Life	16	6	6
Comments	6.75" IMP DIA.	-	-

Pumps

Tag			
Unit Type	Base Mtd, End Suction	Base Mtd, End Suction	-
Qty	1	1	-
Location	Mechanical Room	Mechanical Room	-
Area Served	Heating HW	Heating HW	-
Manufacturer	Bell & Gossett	Bell & Gossett	-
Model #	1510 BF 11 5E	1510 BF 11 5E	-
Serial #	C021425-02 F60	C021425-01 F60	-
Horse Power	40	40	-
Flow	780 GPM @ 115 PSI	780 GPM @ 115 PSI	-
Motor Info	Marathon Electric, M/N CM 324TTDC6026AA, S/N 050079	Marathon Electric, M/N CN 324TTDC6026AA, S/N 050112	-
Electrical Power	208-230/460	208-230/460	-
RPM	1800	1800	-
Motor Efficiency %	94.1%	94.1%	-
Approx Age	4	4	-
ASHRAE Service Life	20	20	-
Remaining Life	16	16	-
Comments	NEMA Premium	NEMA Premium	-

Pumps

Tag			
Unit Type	Base Mtd, End Suction	Base Mtd, End Suction	-
Qty	1	1	-
Location	Mechanical Room	Mechanical Room	-
Area Served	Chilled Water	Chilled Water	-
Manufacturer	Bell & Gossett	Bell & Gossett	-
Model #	1510 BF 11.625 6G	1510 BF 11.625 6G	-
Serial #	C021426-02 F60	C021426-01 F60	-
Horse Power	75	75	-
Flow	1450 GPM @ 125 PSI	1450 GPM @ 125 PSI	-
Motor Info	WEG, M/N 075180T3E365T, S/N	WEG, M/N 075180T3E365T, S/N	-
Electrical Power	208-230/460	208-230/460	-
RPM	1780	1780	-
Motor Efficiency %	95.0%	95.0%	-
Approx Age	4	4	-
ASHRAE Service Life	20	20	-
Remaining Life	16	16	-
Comments	NEMA Premium, VFD	NEMA Premium, VFD	-

Investment Grade Lighting Audit

CEG Job #: 9C10054

Project: BURLINGTON TWP BOE LGEA
1600 Burlington Bypass
Burlington, NJ 08016

Burlington Township Middle School @ Springside

KWH COST: $0.154

Bldg. Sq. Ft. 182,000

ECM #3: Lighting Upgrade - Metal Halide Upgrade and ECM #4: Lighting Upgrade - De Lamping

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
231.33	A200 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A202 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	A204 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	3,244.8	$499.70	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	A204A Prep Room	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	A206 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	3,244.8	$499.70	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A208 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A210 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt.,	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Stairway A2	4400	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	5,491.2	$845.64	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A211 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt.,	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A209 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A207 Classroom	2600	10	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.86	2,236.0	$344.34	10	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A205 Classroom	2600	7	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.60	1,565.2	$241.04	7	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A203 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt.,	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A201 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor A 200	4400	11	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	104	1.14	5,033.6	$775.17	11	3	Remove 1 Lamp - No Ballast Change Required	86	0.95	4162.4	$641.01	$22.00	$242.00	0.20	871.2	$134.16	1.80
242.21	A2 Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.41	A2 Custodian Closet	1200	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic Lens	104	0.10	124.8	$19.22	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	A2 Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

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242.11	Machine Room	260	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	104	0.10	27.0	$4.16	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor - Guidance	4400	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	104	1.25	5,491.2	$845.64	12	3	Remove 1 Lamp - No Ballast Change Required	86	1.03	4540.8	$699.28	$22.00	$264.00	0.22	950.4	$146.36	1.80
227.21		4400	12	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.70	3,062.4	$471.61	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
227.21	Guidance	2600	5	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	58	0.29	754.0	$116.12	5	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33		2600	20	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.72	4,472.0	$688.69	20	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Work Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Copy Room	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	270.4	$41.64	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Restroom	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	270.4	$41.64	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	GS7	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	GS6	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	GS5	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	GS4	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	GS3	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Restroom	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	270.4	$41.64	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	GS2	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	GS1	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	Conference Room	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	D200	2600	20	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.72	4,472.0	$688.69	20	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D Storage	1200	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.62	748.8	$115.32	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.11	Electric Room	1200	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	104	0.21	249.6	$38.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	D202 Classroom	2600	20	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.72	4,472.0	$688.69	20	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	D201 Classroom	2600	20	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.72	4,472.0	$688.69	20	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	D203 Classroom	2600	20	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.72	4,472.0	$688.69	20	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

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231.33	Media Center	2600	137	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	11.78	30,633.2	$4,717.51	137	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
211.14		2600	18	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	30	0.54	1,404.0	$216.22	18	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
34		2600	7	16	Pendant Mnt., Four Bowl Uplight, (16) 42w CFL Lamp	672	4.70	12,230.4	$1,883.48	7	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	AV Room	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor - Media Center	2600	18	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.87	4,867.2	$749.55	18	3	Remove 1 Lamp - No Ballast Change Required	86	1.55	4024.8	$619.82	$22.00	$396.00	0.32	842.4	$129.73	3.05
242.21	Stairway A1	4400	5	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.52	2,288.0	$352.35	5	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Book Room	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.42	1,081.6	$166.57	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Stairway B1	4400	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.62	2,745.6	$422.82	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.46	3,785.6	$582.98	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor B 200	4400	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.46	6,406.4	$986.59	14	3	Remove 1 Lamp - No Ballast Change Required	86	1.20	5297.6	$815.83	$22.00	$308.00	0.25	1108.8	$170.76	1.80
242.21	B200 Classroom	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.46	3,785.6	$582.98	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B201 Classroom	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.46	3,785.6	$582.98	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B202 Classroom	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.46	3,785.6	$582.98	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B203 Classroom	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.46	3,785.6	$582.98	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B204 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	3,244.8	$499.70	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Prep Room	2600	5	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	104	0.52	1,352.0	$208.21	5	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B206 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	3,244.8	$499.70	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
236.33	B208 Classroom	2600	14	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
236.33	B210 Classroom	2600	14	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Stairwell B2	4400	11	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	104	1.14	5,033.6	$775.17	11	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B211 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

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231.33	B209 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B207 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt.,	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B205 Classroom	2600	7	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.60	1,565.2	$241.04	7	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor C200	4400	16	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	104	1.66	7,321.6	$1,127.53	16	3	Remove 1 Lamp - No Ballast Change Required	86	1.38	6054.4	$932.38	$22.00	$352.00	0.29	1267.2	$195.15	1.80
242.21	Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	Vice Principal's Secretary's Office	2600	6	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.52	1,341.6	$206.61	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	Vice Principal's Office	2600	6	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.52	1,341.6	$206.61	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Stairway C1	4400	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	104	0.62	2,745.6	$422.82	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C201 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C203 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	C205 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	3,244.8	$499.70	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Prep Room	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	C207 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	3,244.8	$499.70	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C209 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C211 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Stairway C2	4400	11	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.14	5,033.6	$775.17	11	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C210 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C208 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C206 Classroom	2600	10	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt.,	86	0.86	2,236.0	$344.34	10	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C204 Classroom	2600	7	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.60	1,565.2	$241.04	7	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C101 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

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231.33	C103 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	C105 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	104	1.25	3,244.8	$499.70	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Prep Room	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	C107 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	3,244.8	$499.70	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C109 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C111 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C110 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C108 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C106 Classroom	2600	10	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.86	2,236.0	$344.34	10	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	C104 Classroom	2600	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.62	1,622.4	$249.85	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C102 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C100 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor C 100	4400	24	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.50	10,982.4	$1,691.29	24	3	Remove 1 Lamp - No Ballast Change Required	86	2.06	9081.6	$1,398.57	$22.00	$528.00	0.43	1900.8	$292.72	1.80
242.21	Faculty Work Room	2600	8	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.83	2,163.2	$333.13	8	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor D 100	4400	16	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.66	7,321.6	$1,127.53	16	3	Remove 1 Lamp - No Ballast Change Required	86	1.38	6054.4	$932.38	$22.00	$352.00	0.29	1267.2	$195.15	1.80
227.21		4400	24	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	1.39	6,124.8	$943.22	24	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Storage	1200	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	1,497.6	$230.63	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D106 Classroom	2600	15	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.56	4,056.0	$624.62	15	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D104 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	3,244.8	$499.70	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

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242.211	Corridor B 100	4400	25	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.60	11,440.0	$1,761.76	25	3	Remove 1 Lamp - No Ballast Change Required	86	2.15	9460	$1,456.84	$22.00	$550.00	0.45	1980	$304.92	1.80
242.21	Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B101 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B103 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B105 Classroom	2600	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.62	1,622.4	$249.85	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B107 Classrooom	2600	10	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.86	2,236.0	$344.34	10	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B109 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B111 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B110 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B108 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B106 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	3,244.8	$499.70	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Prep Room	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B104 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	3,244.8	$499.70	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B102 Classroom	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.46	3,785.6	$582.98	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B100 Classrooom	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.46	3,785.6	$582.98	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Copy Room B	2600	5	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.52	1,352.0	$208.21	5	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D102 Classroom	2600	18	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	104	1.87	4,867.2	$749.55	18	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D102A Storage	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.42	1,081.6	$166.57	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D100 Classroom	2600	18	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.87	4,867.2	$749.55	18	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D100A Storage	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

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242.211	Corridor A 100	2600	25	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.60	6,760.0	$1,041.04	25	3	Remove 1 Lamp - No Ballast Change Required	86	2.15	5590	$860.86	$22.00	$550.00	0.45	1170	$180.18	3.05
242.21	Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A101 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A103 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	A105 Classroom	2600	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.62	1,622.4	$249.85	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A107 Classroom	2600	10	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.86	2,236.0	$344.34	10	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A109 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A111 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt.,	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A110 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A108 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	A106 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	3,244.8	$499.70	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Prep Room	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	A104 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	3,244.8	$499.70	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A102 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A100 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.20	3,130.4	$482.08	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Copy Room A	2600	5	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.52	1,352.0	$208.21	5	3	Remove 1 Lamp - No Ballast Change Required	86	0.43	1118	$172.17	$22.00	$110.00	0.09	234	$36.04	3.05
211.41	Vestibule	4400	12	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Indirect	30	0.36	1,584.0	$243.94	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
34		4400	4	16	Pendant Mnt., Four Bowl Uplight, (16) 42w CFL Lamp	672	2.69	11,827.2	$1,821.39	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
221.21		4400	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Acrylic Lens	58	0.12	510.4	$78.60	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
30		4400	6	1	Recessed Down Light, (1) 26w Quad PL Lamp	26	0.16	686.4	$105.71	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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242.21	D101 Music	2600	28	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.91	7,571.2	$1,165.96	28	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D101 A Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D101 C Practice	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.42	1,081.6	$166.57	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D101 B Lockers	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D103 Music	2600	18	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.87	4,867.2	$749.55	18	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D103 A Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor - Cafeteria	4400	20	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.08	9,152.0	$1,409.41	20	3	Remove 1 Lamp - No Ballast Change Required	86	1.72	7568	$1,165.47	$22.00	$440.00	0.36	1584	$243.94	1.80
242.21	Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
771	Cafeteria A & B	2600	44	1	2x2 Recessed, 400w MH w/Quartz Restrike	454	19.98	51,937.6	$7,998.39	44	4	2x2 Recessed, (3) 55w TT5 FTDL HO Lamp w/"Miro" Reflector	182	8.01	20820.8	$3,206.40	$420.00	$18,480.00	11.97	31116.8	$4,791.99	3.86
227.21		2600	28	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	1.62	4,222.4	$650.25	28	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.11	Stage	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	104	1.25	3,244.8	$499.70	12	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	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.12	139.2	$21.44	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Faculty dining	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.42	1,081.6	$166.57	4	3	Remove 1 Lamp - No Ballast Change Required	86	0.34	894.4	$137.74	$22.00	$88.00	0.07	187.2	$28.83	3.05
242.21	Serving Area	2600	16	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.66	4,326.4	$666.27	16	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Kitchen	2600	21	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	104	2.18	5,678.4	$874.47	21	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Wash. Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Custodian Closet	1200	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	104	0.10	124.8	$19.22	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Kitchen Office	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.42	1,081.6	$166.57	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Kitchen Storage	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Kitchen Stock	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	104	0.42	1,081.6	$166.57	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

Investment Grade Lighting Audit

242.21	Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
790	Gym	2600	70	1	Uplight, 1000w MH	1080	75.60	196,560.0	$30,270.24	70	4	2x4 54w T5HO 4 Lamp w/Reflective Lens, Wire Cage	236	16.52	42952	$6,614.61	$420.00	$29,400.00	59.08	153608	$23,655.63	1.24
399	Gym	2600	70	2	Uplight, (2) 55w Long Twin Tube CFL	120	8.40	21,840.0	$3,363.36	70	0	Remove Fixture	0	0.00	0	$0.00	$30.00	$2,100.00	8.40	21,840.0	$3,363.36	0.62
242.21	Girls' Locker Room	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
790	Auxiliary Gym	2600	30	1	Uplight, 1000w MH	1080	32.40	84,240.0	$12,972.96	30	4	2x4 54w T5HO 4 Lamp w/Reflective Lens, Wire Cage	236	7.08	18408	$2,834.83	$420.00	$12,600.00	25.32	65832	$10,138.13	1.24
242.21	Boys' Locker Room	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.46	3,785.6	$582.98	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Boys' Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Fitness Center	2600	33	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	3.43	8,923.2	$1,374.17	33	3	Remove 1 Lamp - No Ballast Change Required	86	2.84	7378.8	$1,136.34	$22.00	$726.00	0.59	1544.4	$237.84	3.05
242.31	Receiving	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	104	0.31	811.2	$124.92	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.31	Boiler Room	4400	15	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	104	1.56	6,864.0	$1,057.06	15	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.31	Fire Pump Room	1200	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	104	0.31	374.4	$57.66	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Main Office	2600	9	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.94	2,433.6	$374.77	9	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Copy Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.21	540.8	$83.28	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Principal's Room	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.42	1,081.6	$166.57	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Principal's Restroom	1200	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.10	124.8	$19.22	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Main Office Restroom	1200	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt.,	104	0.10	124.8	$19.22	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Nurse	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.25	3,244.8	$499.70	12	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
	Totals		2,149	686			322.62	882,393	$135,889	2,160	51			50.8	153,406	$23,625		$67,486	108.8	287,304	$44,245	1.53

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 TWP BOE LGEA
Address: 1600 Burlington Bypass
Burlington, NJ 08016
Building SF: 182,000

Burlington Township Middle School @ Springside

KWH COST: $0.154

ECM #5: 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
231.33	A200 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A202 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	A204 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	3244.8	$499.70	12	0	No Change	104	1.25	0%	3244.8	$499.70	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	A204A Prep Room	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	A206 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	3244.8	$499.70	12	0	No Change	104	1.25	0%	3244.8	$499.70	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A208 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A210 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Stairway A2	4400	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	5491.2	$845.64	12	1	Hubble Daylight Sensor	104	0.94	25%	4118.4	$634.23	$160.00	$160.00	0.31	1372.8	$211.41	0.76
231.33	A211 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A209 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A207 Classroom	2600	10	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.86	2236	$344.34	10	0	No Change	86	0.86	0%	2236	$344.34	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A205 Classroom	2600	7	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.602	1565.2	$241.04	7	0	No Change	86	0.60	0%	1565.2	$241.04	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A203 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A201 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor A 200	4400	11	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.144	5033.6	$775.17	11	0	No Change	104	1.14	0%	5033.6	$775.17	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	A2 Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.41	A2 Custodian Closet	1200	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic Lens	104	0.104	124.8	$19.22	1	0	No Change	104	0.10	0%	124.8	$19.22	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	A2 Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.11	Machine Room	260	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	104	0.104	27.04	$4.16	1	0	No Change	104	0.10	0%	27.04	$4.16	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor - Guidance	4400	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	5491.2	$845.64	12	0	No Change	104	1.25	0%	5491.2	$845.64	$0.00	$0.00	0.00	0	$0.00	0.00
227.21		4400	12	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.696	3062.4	$471.61	12	0	No Change	58	0.70	0%	3062.4	$471.61	$0.00	$0.00	0.00	0	$0.00	0.00

227.21	Guidance	2600	5	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	0.29	754	$116.12	5	0	No Change	58	0.29	0%	754	$116.12	$0.00	$0.00	0.00	0	$0.00	0.00
231.33		2600	20	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.72	4472	$688.69	20	0	No Change	86	1.72	0%	4472	$688.69	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Work Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Copy Room	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	270.4	$41.64	1	0	No Change	104	0.10	0%	270.4	$41.64	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Restroom	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	270.4	$41.64	1	0	No Change	104	0.10	0%	270.4	$41.64	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	GS7	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	GS6	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	GS5	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	GS4	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	GS3	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Restroom	2600	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	270.4	$41.64	1	0	No Change	104	0.10	0%	270.4	$41.64	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	GS2	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	GS1	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	Conference Room	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	D200	2600	20	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.72	4472	$688.69	20	0	No Change	86	1.72	0%	4472	$688.69	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D Storage	1200	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.624	748.8	$115.32	6	0	No Change	104	0.62	0%	748.8	$115.32	$0.00	$0.00	0.00	0	$0.00	0.00
242.11	Electric Room	1200	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	104	0.208	249.6	$38.44	2	0	No Change	104	0.21	0%	249.6	$38.44	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	D202 Classroom	2600	20	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.72	4472	$688.69	20	0	No Change	86	1.72	0%	4472	$688.69	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	D201 Classroom	2600	20	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.72	4472	$688.69	20	0	No Change	86	1.72	0%	4472	$688.69	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	D203 Classroom	2600	20	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.72	4472	$688.69	20	0	No Change	86	1.72	0%	4472	$688.69	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	Media Center	2600	137	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	11.782	30633.2	$4,717.51	137	0	No Change	86	11.78	0%	30633.2	$4,717.51	$0.00	$0.00	0.00	0	$0.00	0.00
211.14		2600	18	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	30	0.54	1404	$216.22	18	0	No Change	30	0.54	0%	1404	$216.22	$0.00	$0.00	0.00	0	$0.00	0.00
34		2600	7	16	Pendant Mnt., Four Bowl Uplight, (16) 42w CFL Lamp	672	4.704	12230.4	$1,883.48	7	0	No Change	672	4.70	0%	12230.4	$1,883.48	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	AV Room	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor - Media Center	2600	18	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.872	4867.2	$749.55	18	1	Hubble Daylight Sensor	104	1.40	25%	3650.4	$562.16	$160.00	$160.00	0.47	1216.8	$187.39	0.85

242.21	Stairway A1	4400	5	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.52	2288	$352.35	5	1	Hubble Daylight Sensor	104	0.39	25%	1716	$264.26	$160.00	$160.00	0.13	572	$88.09	1.82
242.21	Book Room	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.416	1081.6	$166.57	4	0	No Change	104	0.42	0%	1081.6	$166.57	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Stairway B1	4400	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.624	2745.6	$422.82	6	1	Hubble Daylight Sensor	104	0.47	25%	2059.2	$317.12	$160.00	$160.00	0.16	686.4	$105.71	1.51
242.21	Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.456	3785.6	$582.98	14	0	No Change	104	1.46	0%	3785.6	$582.98	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor B 200	4400	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.456	6406.4	$986.59	14	0	No Change	104	1.46	0%	6406.4	$986.59	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B200 Classroom	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.456	3785.6	$582.98	14	0	No Change	104	1.46	0%	3785.6	$582.98	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B201 Classroom	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.456	3785.6	$582.98	14	0	No Change	104	1.46	0%	3785.6	$582.98	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B202 Classroom	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.456	3785.6	$582.98	14	0	No Change	104	1.46	0%	3785.6	$582.98	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B203 Classroom	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.456	3785.6	$582.98	14	0	No Change	104	1.46	0%	3785.6	$582.98	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B204 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	3244.8	$499.70	12	0	No Change	104	1.25	0%	3244.8	$499.70	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Prep Room	2600	5	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.52	1352	$208.21	5	0	No Change	104	0.52	0%	1352	$208.21	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B206 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	3244.8	$499.70	12	0	No Change	104	1.25	0%	3244.8	$499.70	$0.00	$0.00	0.00	0	$0.00	0.00
236.33	B208 Classroom	2600	14	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
236.33	B210 Classroom	2600	14	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Stairwell B2	4400	11	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.144	5033.6	$775.17	11	1	Hubble Daylight Sensor	104	0.86	25%	3775.2	$581.38	$160.00	$160.00	0.29	1258.4	$193.79	0.83
231.33	B211 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B209 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B207 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B205 Classroom	2600	7	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.602	1565.2	$241.04	7	0	No Change	86	0.60	0%	1565.2	$241.04	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor C200	4400	16	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.664	7321.6	$1,127.53	16	0	No Change	104	1.66	0%	7321.6	$1,127.53	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	Vice Principal's Secretary's Office	2600	6	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.516	1341.6	$206.61	6	0	No Change	86	0.52	0%	1341.6	$206.61	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	Vice Principal's Office	2600	6	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.516	1341.6	$206.61	6	0	No Change	86	0.52	0%	1341.6	$206.61	$0.00	$0.00	0.00	0	$0.00	0.00

242.21	Stairway C1	4400	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.624	2745.6	$422.82	6	1	Hubble Daylight Sensor	104	0.47	25%	2059.2	$317.12	$160.00	$160.00	0.16	686.4	$105.71	1.51
231.33	C201 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C203 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	C205 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	3244.8	$499.70	12	0	No Change	104	1.25	0%	3244.8	$499.70	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Prep Room	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	C207 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	3244.8	$499.70	12	0	No Change	104	1.25	0%	3244.8	$499.70	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C209 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C211 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Stairway C2	4400	11	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.144	5033.6	$775.17	11	1	Hubble Daylight Sensor	104	0.86	25%	3775.2	$581.38	$160.00	$160.00	0.29	1258.4	$193.79	0.83
231.33	C210 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C208 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C206 Classroom	2600	10	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.86	2236	$344.34	10	0	No Change	86	0.86	0%	2236	$344.34	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C204 Classroom	2600	7	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.602	1565.2	$241.04	7	0	No Change	86	0.60	0%	1565.2	$241.04	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C101 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C103 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	C105 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	3244.8	$499.70	12	0	No Change	104	1.25	0%	3244.8	$499.70	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Prep Room	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	C107 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	3244.8	$499.70	12	0	No Change	104	1.25	0%	3244.8	$499.70	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C109 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C111 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C110 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C108 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C106 Classroom	2600	10	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.86	2236	$344.34	10	0	No Change	86	0.86	0%	2236	$344.34	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	C104 Classroom	2600	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.624	1622.4	$249.85	6	0	No Change	104	0.62	0%	1622.4	$249.85	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	C102 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00

231.33	C100 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor C 100	4400	24	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.496	10982.4	$1,691.29	24	0	No Change	104	2.50	0%	10982.4	$1,691.29	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Faculty Work Room	2600	8	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.832	2163.2	$333.13	8	0	No Change	104	0.83	0%	2163.2	$333.13	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor D 100	4400	16	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.664	7321.6	$1,127.53	16	0	No Change	104	1.66	0%	7321.6	$1,127.53	$0.00	$0.00	0.00	0	$0.00	0.00
227.21		4400	24	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	1.392	6124.8	$943.22	24	0	No Change	58	1.39	0%	6124.8	$943.22	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Storage	1200	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	1497.6	$230.63	12	0	No Change	104	1.25	0%	1497.6	$230.63	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D106 Classroom	2600	15	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.56	4056	$624.62	15	0	No Change	104	1.56	0%	4056	$624.62	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D104 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	3244.8	$499.70	12	0	No Change	104	1.25	0%	3244.8	$499.70	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor B 100	4400	25	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.6	11440	$1,761.76	25	0	No Change	104	2.60	0%	11440	$1,761.76	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B101 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B103 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B105 Classroom	2600	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.624	1622.4	$249.85	6	0	No Change	104	0.62	0%	1622.4	$249.85	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B107 Classrooom	2600	10	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.86	2236	$344.34	10	0	No Change	86	0.86	0%	2236	$344.34	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B109 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B111 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B110 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	B108 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B106 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	3244.8	$499.70	12	0	No Change	104	1.25	0%	3244.8	$499.70	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Prep Room	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B104 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	3244.8	$499.70	12	0	No Change	104	1.25	0%	3244.8	$499.70	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	B102 Classroom	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.456	3785.6	$582.98	14	0	No Change	104	1.46	0%	3785.6	$582.98	$0.00	$0.00	0.00	0	$0.00	0.00

242.21	B100 Classrooom	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.456	3785.6	$582.98	14	0	No Change	104	1.46	0%	3785.6	$582.98	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Copy Room B	2600	5	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.52	1352	$208.21	5	0	No Change	104	0.52	0%	1352	$208.21	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D102 Classroom	2600	18	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.872	4867.2	$749.55	18	0	No Change	104	1.87	0%	4867.2	$749.55	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D102A Storage	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.416	1081.6	$166.57	4	0	No Change	104	0.42	0%	1081.6	$166.57	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D100 Classroom	2600	18	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.872	4867.2	$749.55	18	0	No Change	104	1.87	0%	4867.2	$749.55	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D100A Storage	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor A 100	2600	25	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.6	6760	$1,041.04	25	0	No Change	104	2.60	0%	6760	$1,041.04	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A101 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A103 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	A105 Classroom	2600	6	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.624	1622.4	$249.85	6	0	No Change	104	0.62	0%	1622.4	$249.85	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A107 Classroom	2600	10	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	0.86	2236	$344.34	10	0	No Change	86	0.86	0%	2236	$344.34	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A109 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A111 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A110 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A108 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	A106 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	3244.8	$499.70	12	0	No Change	104	1.25	0%	3244.8	$499.70	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Prep Room	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	A104 Classroom	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.248	3244.8	$499.70	12	0	No Change	104	1.25	0%	3244.8	$499.70	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A102 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
231.33	A100 Classroom	2600	14	3	1x4, 3 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Direct/ Indirect	86	1.204	3130.4	$482.08	14	0	No Change	86	1.20	0%	3130.4	$482.08	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Copy Room A	2600	5	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.52	1352	$208.21	5	0	No Change	104	0.52	0%	1352	$208.21	$0.00	$0.00	0.00	0	$0.00	0.00
211.41		4400	12	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., Indirect	30	0.36	1584	$243.94	12	1	Hubble Daylight Sensor	30	0.27	25%	1188	$182.95	$160.00	$160.00	0.09	396	$60.98	2.62
34	Vestibule	4400	4	16	Pendant Mnt., Four Bowl Uplight, (16) 42w CFL Lamp	672	2.688	11827.2	$1,821.39	4	0	No Change	672	2.69	0%	11827.2	$1,821.39	$0.00	$0.00	0.00	0	$0.00	0.00

221.21		4400	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Acrylic Lens	58	0.116	510.4	$78.60	2	0	No Change	58	0.12	0%	510.4	$78.60	$0.00	$0.00	0.00	0	$0.00	0.00
30		4400	6	1	Recessed Down Light, (1) 26w Quad PL Lamp	26	0.156	686.4	$105.71	6	1	Hubble Daylight Sensor	26	0.12	25%	514.8	$79.28	$160.00	$160.00	0.04	171.6	$26.43	6.05
242.21	D101 Music	2600	28	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.912	7571.2	$1,165.96	28	0	No Change	104	2.91	0%	7571.2	$1,165.96	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D101 A Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D101 C Practice	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.416	1081.6	$166.57	4	0	No Change	104	0.42	0%	1081.6	$166.57	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D101 B Lockers	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D103 Music	2600	18	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.872	4867.2	$749.55	18	0	No Change	104	1.87	0%	4867.2	$749.55	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	D103 A Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Corridor - Cafeteria	4400	20	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.08	9152	$1,409.41	20	0	No Change	104	2.08	0%	9152	$1,409.41	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
771	Cafeteria A & B	2600	44	1	2x2 Recessed, 400w MH w/Quartz Restrike	454	19.976	51937.6	$7,998.39	44	0	No Change	454	19.98	0%	51937.6	$7,998.39	$0.00	$0.00	0.00	0	$0.00	0.00
227.21		2600	28	2	2x2, 2 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	58	1.624	4222.4	$650.25	28	0	No Change	58	1.62	0%	4222.4	$650.25	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.11	Stage	2600	12	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Surface Mnt., Prismatic Lens	104	1.248	3244.8	$499.70	12	0	No Change	104	1.25	0%	3244.8	$499.70	$0.00	$0.00	0.00	0	$0.00	0.00
221.41	Electric Closet	1200	2	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Wall Mnt., Prismatic	58	0.116	139.2	$21.44	2	0	No Change	58	0.12	0%	139.2	$21.44	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Faculty dining	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.416	1081.6	$166.57	4	0	No Change	104	0.42	0%	1081.6	$166.57	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Serving Area	2600	16	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.664	4326.4	$666.27	16	0	No Change	104	1.66	0%	4326.4	$666.27	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Kitchen	2600	21	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	2.184	5678.4	$874.47	21	0	No Change	104	2.18	0%	5678.4	$874.47	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Wash. Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Custodian Closet	1200	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	124.8	$19.22	1	0	No Change	104	0.10	0%	124.8	$19.22	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Kitchen Office	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.416	1081.6	$166.57	4	0	No Change	104	0.42	0%	1081.6	$166.57	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Kitchen Storage	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Kitchen Stock	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.416	1081.6	$166.57	4	0	No Change	104	0.42	0%	1081.6	$166.57	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Boys' Restroom	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
790	Gym	2600	70	1	Uplight, 1000w MH	1080	75.6	196560	$30,270.24	70	0	No Change	1080	75.60	0%	196560	$30,270.24	$0.00	$0.00	0.00	0	$0.00	0.00

399	Gym	2600	70	2	Uplight, (2) 55w Long Twin Tube CFL	120	8.4	21840	$3,363.36	70	0	No Change	120	8.40	0%	21840	$3,363.36	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Locker Room	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Girls' Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
790	Auxiliary Gym	2600	30	1	Uplight, 1000w MH	1080	32.4	84240	$12,972.96	30	0	No Change	1080	32.40	0%	84240	$12,972.96	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Boys' Locker Room	2600	14	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	1.456	3785.6	$582.98	14	0	No Change	104	1.46	0%	3785.6	$582.98	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Boys' Office	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
242.211	Fitness Center	2600	33	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	3.432	8923.2	$1,374.17	33	0	No Change	104	3.43	0%	8923.2	$1,374.17	$0.00	$0.00	0.00	0	$0.00	0.00
242.31	Receiving	2600	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	104	0.312	811.2	$124.92	3	0	No Change	104	0.31	0%	811.2	$124.92	$0.00	$0.00	0.00	0	$0.00	0.00
242.31	Boiler Room	4400	15	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	104	1.56	6864	$1,057.06	15	0	No Change	104	1.56	0%	6864	$1,057.06	$0.00	$0.00	0.00	0	$0.00	0.00
242.31	Fire Pump Room	1200	3	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Direct/Indirect	104	0.312	374.4	$57.66	3	0	No Change	104	0.31	0%	374.4	$57.66	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Main Office	2600	9	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.936	2433.6	$374.77	9	0	No Change	104	0.94	0%	2433.6	$374.77	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Copy Room	2600	2	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.208	540.8	$83.28	2	0	No Change	104	0.21	0%	540.8	$83.28	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Principal's Room	2600	4	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.416	1081.6	$166.57	4	0	No Change	104	0.42	0%	1081.6	$166.57	$0.00	$0.00	0.00	0	$0.00	0.00
242.21	Principal's Restroom	1200	1	4	2x4, 4 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	104	0.104	124.8	$19.22	1	0	No Change	104	0.10	0%	124.8	$19.22	$0.00	$0.00	0.00	0	$0.00	0.00
	Totals		2,149	686			321.3	879,023.4	$135,370	2,147	9			319.3		871,404.6	$134,196.31		$1,440	1.92	7,619	$1,173	1.23

Project Name: LGEA Solar PV Project - Middle School at Springside
Location: Burlington, NJ
Description: Photovoltaic System 95% Financing - 25 year

Simple Payback Analysis

	Photovoltaic System 95% Financing - 25 year
Total Construction Cost	$2,893,860
Annual kWh Production	399,544
Annual Energy Cost Reduction	$61,530
Annual SREC Revenue	$139,840
First Cost Premium	**$2,893,860**
Simple Payback:	**14.37** Years

Life Cycle Cost Analysis

Analysis Period (years):	25	Financing %:	95%
Financing Term (mths):	300	Maintenance Escalation Rate:	3.0%
Average Energy Cost ($/kWh)	**$0.154**	Energy Cost Escalation Rate:	3.0%
Financing Rate:	7.00%	SREC Value ($/kWh)	$0.350

Period	Additional Cash Outlay	Energy kWh Production	Energy Cost Savings	Additional Maint Costs	SREC Revenue	Interest Expense	Loan Principal	Net Cash Flow	Cumulative Cash Flow
0	$144,693	0	0	0	$0	0	0	(144,693)	0
1	$0	399,544	$61,530	$0	$139,840	$191,109	$42,057	($31,796)	($176,489)
2	$0	397,546	$63,376	$0	$139,141	$188,069	$45,097	($30,650)	($207,139)
3	$0	395,559	$65,277	$0	$138,445	$184,809	$48,358	($29,444)	($236,583)
4	$0	393,581	$67,235	$0	$137,753	$181,313	$51,853	($28,178)	($264,761)
5	$0	391,613	$69,252	$4,034	$137,064	$177,565	$55,602	($30,883)	($295,644)
6	$0	389,655	$71,330	$4,013	$136,379	$173,545	$59,621	($29,471)	($325,115)
7	$0	387,707	$73,470	$3,993	$135,697	$169,235	$63,931	($27,993)	($353,108)
8	$0	385,768	$75,674	$3,973	$135,019	$164,614	$68,553	($26,447)	($379,555)
9	$0	383,839	$77,944	$3,954	$134,344	$159,658	$73,509	($24,832)	($404,387)
10	$0	381,920	$80,282	$3,934	$133,672	$154,344	$78,822	($23,146)	($427,533)
11	$0	380,010	$82,691	$3,914	$133,004	$148,646	$84,521	($21,386)	($448,919)
12	$0	378,110	$85,172	$3,895	$132,339	$142,536	$90,631	($19,551)	($468,470)
13	$0	376,220	$87,727	$3,875	$131,677	$135,984	$97,182	($17,638)	($486,108)
14	$0	374,339	$90,359	$3,856	$131,019	$128,959	$104,208	($15,645)	($501,753)
15	$0	372,467	$93,069	$3,836	$130,363	$121,426	$111,741	($13,570)	($515,323)
16	$0	370,605	$95,861	$3,817	$129,712	$113,348	$119,819	($11,411)	($526,734)
17	$0	368,752	$98,737	$3,798	$129,063	$104,686	$128,480	($9,164)	($535,898)
18	$0	366,908	$101,699	$3,779	$128,418	$95,398	$137,768	($6,829)	($542,727)
19	$0	365,073	$104,750	$3,760	$127,776	$85,439	$147,727	($4,401)	($547,128)
20	$0	363,248	$107,893	$3,741	$127,137	$74,760	$158,407	($1,878)	($549,006)
21	$0	361,432	$111,130	$3,723	$126,501	$68,112	$145,624	$20,172	($528,834)
22	$0	359,625	$114,464	$3,704	$125,869	$55,040	$119,835	$61,753	($467,081)
23	$0	357,826	$117,897	$3,686	$125,239	$0	$0	$239,451	($227,630)
24	$0	356,037	$121,434	$3,667	$124,613	$0	$0	$242,380	$14,750
25	$0	354,257	$125,077	$3,649	$123,990	$0	$0	$245,418	$260,169
	Totals:	9,411,639	$2,243,330	$80,602	$3,294,074	$3,018,595	$2,033,345	$404,862	($9,141,009)
					Net Present Value (NPV)			**($202,420)**	
					Internal Rate of Return (IRR)			**2.1%**	

Project Name: **LGEA Solar PV Project - Middle School at Springside**
Location: **Burlington, NJ**
Description: **Photovoltaic System - Direct Purchase**

Simple Payback Analysis

	Photovoltaic System - Direct Purchase
Total Construction Cost	$2,893,860
Annual kWh Production	399,544
Annual Energy Cost Reduction	$61,530
Annual SREC Revenue	$139,840
First Cost Premium	**$2,893,860**
Simple Payback:	**14.37** **Years**

Life Cycle Cost Analysis

Analysis Period (years):	25	Financing %:	0%
Financing Term (mths):	0	Maintenance Escalation Rate:	3.0%
Average Energy Cost ($/kWh)	**$0.154**	Energy Cost Escalation Rate:	3.0%
Financing Rate:	0.00%	SREC Value ($/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	$2,893,860	0	0	0	$0	(2,893,860)	0
1	$0	399,544	$61,530	$0	$139,840	$201,370	($2,692,490)
2	$0	397,546	$63,376	$0	$139,141	$202,517	($2,489,973)
3	$0	395,559	$65,277	$0	$138,445	$203,722	($2,286,251)
4	$0	393,581	$67,235	$0	$137,753	$204,989	($2,081,262)
5	$0	391,613	$69,252	$4,034	$137,064	$202,283	($1,878,979)
6	$0	389,655	$71,330	$4,013	$136,379	$203,696	($1,675,283)
7	$0	387,707	$73,470	$3,993	$135,697	$205,174	($1,470,110)
8	$0	385,768	$75,674	$3,973	$135,019	$206,719	($1,263,390)
9	$0	383,839	$77,944	$3,954	$134,344	$208,334	($1,055,056)
10	$0	381,920	$80,282	$3,934	$133,672	$210,021	($845,035)
11	$0	380,010	$82,691	$3,914	$133,004	$211,780	($633,255)
12	$0	378,110	$85,172	$3,895	$132,339	$213,616	($419,639)
13	$0	376,220	$87,727	$3,875	$131,677	$215,529	($204,111)
14	$0	374,339	$90,359	$3,856	$131,019	$217,521	$13,411
15	$0	372,467	$93,069	$3,836	$130,363	$219,596	$233,007
16	$0	370,605	$95,861	$3,817	$129,712	$221,756	$454,763
17	$0	368,752	$98,737	$3,798	$129,063	$224,002	$678,765
18	$0	366,908	$101,699	$3,779	$128,418	$226,338	$905,103
19	$0	365,073	$104,750	$3,760	$127,776	$228,766	$1,133,868
20	$0	363,248	$107,893	$3,741	$127,137	$231,288	$1,365,157
21	$1	361,432	$111,130	$3,723	$126,501	$233,908	$1,599,065
22	$2	359,625	$114,464	$3,704	$125,869	$236,628	$1,835,693
23	$3	357,826	$117,897	$3,686	$125,239	$239,451	$2,075,144
24	$4	356,037	$121,434	$3,667	$124,613	$242,380	$2,317,524
25	$5	354,257	$125,077	$3,649	$123,990	$245,418	$2,562,942
	Totals:	9,411,639	$2,243,330	$80,602	$3,294,074	$5,456,802	($3,820,394)
				Net Present Value (NPV)		**$2,562,967**	
				Internal Rate of Return (IRR)		**5.4%**	

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
Middle School at Springside	20,550	Sunpower SPR230	1398	14.7	20,556	321.54	399,544	46,134	15.64

PVWatts

AC Energy & Cost Savings

Cautions for Interpreting the Results

(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:	321.5 kW
DC to AC Derate Factor:	0.800
AC Rating:	257.2 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/m²/day)	AC Energy (kWh)	Energy Value ($)
1	2.80	22676	34.92
2	3.53	25962	39.98
3	4.46	35156	54.14
4	5.28	39286	60.50
5	5.86	44275	68.18
6	6.10	42832	65.96
7	6.05	43437	66.89
8	5.60	40329	62.11
9	4.99	35356	54.45
10	3.97	29696	45.73
11	2.86	21462	33.05
12	2.43	19079	29.38
Year	4.50	399544	615.30

.= Proposed PV Layout

Notes:

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

MELINK®
Intelli-Hood® Controls

INTELLI-HOOD ENERGY ANALYSIS

PROJECT: Pat Mullen - Burlington Township Middle School at Springside Middle S

ADDRESS: 1600 Burlington Bypass - Burlington, NJ 8016

APPLICATION: Retrofit / Existing Building

DATE: 11/5/2010

Total Energy Savings:		**$935**	**/YEAR**
Electrical Savings:		2,794	kWh/YEAR
Fan Energy Savings:		$339	/YEAR
Heating Savings:		$505	/YEAR
Cooling Savings:		$91	/YEAR
Net Installed Cost:		**$13,000**	
Installed Cost:		$13,000	
Other Adders & Deducts:		$0	
Payback Period:		**13.9**	**YEARS**
Rate of Return:	OVER 5 YEARS:	**-16%**	
	OVER 10 YEARS:	**-1%**	
Environmental Savings:		**3,743**	**lb CO_2/YEAR**
Current Uncontrolled Cost:		**$2,279**	**/YEAR**

The calculated savings shown above are based on the store's operating hours, estimated cooking load, local utility rates, and local climate data.
Please refer to the attached analysis for details.

The environmental savings were calculated based on data from the US EIA report from 2002.

Melink Corporation
5140 River Valley Road
Milford, OH 45150

FAN ENERGY SAVINGS

PROJECT: Pat Mullen - Burlington Township Middle School at Springside Middle School

SITE: Burlington, NJ **DATE:** 11/5/2010

INPUT DATA:

A	Operating Hours Per Day	8 HRS/DAY
B	Operating Days Per Week	5 DAYS/WK
C	Operating Weeks Per Year	40 WKS/YR
D	Horsepower of Fan Motor(s)	3 HP
E	Load Factor of Fan Motor(s)	0.90
F	Cost Per Kilowatt Hour	$0.15 $/KWHR

CONSTANT EXHAUST VOLUME ANALYSIS:

G	Total Time (A x B x C)	1600 HRS/YR
H	Total KWHR/HP/YR (0.746/System Effic. x G)	1326.2 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%	20%	320	0.746	0.9	0.829	265.2
90%	5%	80	0.544	0.9	0.604	48.3
80%	10%	160	0.382	0.9	0.424	67.9
70%	10%	160	0.256	0.9	0.284	45.5
60%	10%	160	0.161	0.9	0.179	28.6
50%	20%	320	0.093	0.9	0.104	33.2
40%	25%	400	0.048	0.9	0.053	21.2
30%	0%	0	0.020	0.9	0.022	0.0
20%	0%	0	0.006	0.9	0.007	0.0
10%	0%	0	0.001	0.9	0.001	0.0

O Total KWH/HP/YR (Total of Column N) 510.0

CALCULATION: (H - O) x D x E x F

UNCONTROLLED COST = $551 /YEAR

SAVINGS = 2,204 kWh/YEAR

$339 /YEAR

MELINK® Intelli-Hood® Controls

HEATING SAVINGS

PROJECT: Pat Mullen - Burlington Township Middle School at Springside Middle School

SITE: Burlington, NJ **DATE:** 11/5/2010

INPUT DATA:

A	Previous Net Exhaust Volume	4200	CFM
B	New Net Exhaust Volume (1)	2751	CFM
C	Winter Building Temperature	65	F
D	Previous Net Heat Load (2)	169,450	kBTU
E	New Net Heat Load (2)	110,990	kBTU
F	Operating Hours Per Day	8	HRS/DAY
G	Operating Days Per Week	5	DAYS/WK
H	Cost Per Fuel Unit (3)	$1.08	$/UNIT
I	Heating Fuel Type		Natural Gas
J	BTU Per Fuel Unit (4)	100	kBTU/UNIT
K	System Efficiency (4)	1.0	
L	Supply Air Heating Multiplier (5)	0.80	

CALCULATION: (D-E) x L x H / (J x K)

SAVINGS = 46,768 kBTU/YEAR
$505 /YEAR

CALCULATION: D x L x H / (J x K)

UNCONTROLLED COST = $1,464 /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.

(5) Estimation Factor

TABLE 1

% Rated RPM (F)	% Run Time (I)	F x I
100%	20%	20%
90%	5%	5%
80%	10%	8%
70%	10%	7%
60%	10%	6%
50%	20%	10%
40%	25%	10%
30%	0%	0%
20%	0%	0%
10%	0%	0%
AVG % RPM =		66%

MELINK® Intelli-Hood® Controls

COOLING SAVINGS

PROJECT: Pat Mullen - Burlington Township Middle School at Springside Middle School

SITE: Burlington, NJ **DATE:** 11/5/2010

INPUT DATA:

A Previous Net Exhaust Volume	4200	CFM
B New Net Exhaust Volume (1)	2751	CFM
C Previous Net Cooling Load (2)	21,881	kBTU
D New Net Cooling Load (2)	14,332	kBTU
E AC Correction Factor (3)	1	
F Cost Per Fuel Unit (5)	0.154	$/kWH
G COP (6)	3	
H Supply Air Cooling Multiplier (7)	0.80	

CALCULATION: (C - D) x H x E x F / (3.413 x G)

SAVINGS = 590 kWh/YEAR
$91 /YEAR

CALCULATION: C x H x E x F / (3.413 x G)

UNCONTROLLED COST = $263 /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.

(7) Using cooling supply air factor.

CASH FLOW ANALYSIS

PROJECT: Pat Mullen - Burlington Township Middle School at Springside Middle School

SITE: Burlington, NJ **DATE:** 11/5/2010

INPUT DATA:

FIRST YEAR SAVINGS	**$935 /YEAR**
INITIAL COST PLUS INSTALLATION	$13,000
MARGINAL TAX RATE	34%
ESTIMATED ANNUAL INCREASE IN ENERGY COSTS	6%

YEAR	SAVINGS	COST	DEPREC. %	DEPREC. $	NET AFTER-TAX CASH FLOW
0		-$13,000			-$13,000
1	$935	-	20.00	$2,600	$1,501
2	$991	-	32.00	$4,160	$2,069
3	$1,051	-	19.20	$2,496	$1,542
4	$1,114	-	11.50	$1,495	$1,244
5	$1,181	-	11.50	$1,495	$1,288
6	$1,252	-	5.80	$754	$1,082
7	$1,327	-			$876
8	$1,406	-			$928
9	$1,491	-			$984
10	$1,580	-			$1,043

CALCULATIONS:

NET PRESENT VALUE = 5 YEARS @ 12%	-$6,600	INTERNAL RATE OF RETURN (IRR)	-16.2%
NET PRESENT VALUE = 10 YEARS @ 12%	-$4,805	INTERNAL RATE OF RETURN (IRR)	-0.7%

NOTES:

Net After-tax Cash Flow is calculated as follows:
NATCF = SAVINGS - COSTS - TAX RATE(SAVINGS - COSTS - DEPRECIATION)

Net Present Value is calculated as follows:
NPV = C(0) + C(1)/(1 + r) + C(2)/(1 + r)^2 + ... + 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:
NPV = C(0) + C(1)/(1 + IRR) + C(2)/(1 + IRR)^2 + ... + C(n)/(1 + IRR)^n

Depreciation is calculated using the 5-year MACRS schedule