JACKSON TOWNSHIP
JUSTICE COMPLEX

102 JACKSON DRIVE
JACKSON, NJ 08527

FACILITY ENERGY REPORT

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I. HISTORIC ENERGY CONSUMPTION/COST

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.

Electric Utility Provider:	Jersey Central Power & Lighting (JCP&L)
Electric Utility Rate Structure:	General Service Secondary 3 Phase (GSS)
Third Party Supplier:	Liberty Power

Natural Gas Utility Provider:	New Jersey Natural Gas
Utility Rate Structure:	General Service Large (GSL)
Third Party Supplier:	PEPCO

The electric usage profile represents the actual electrical usage for the facility. 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 within each facility report shows the actual natural gas energy usage for the facility. 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.

Table 1
Electricity Billing Data

ELECTRIC USAGE SUMMARY

Utility Provider: JCP&L
Rate: General Service Secondary 3 Phase
Meter No: G21472174
Account # 10-00-28-2020-3-2
Third Party Utility Provider: Liberty Power
TPS Meter / Acct No: G21472174/0801584957

MONTH OF USE	CONSUMPTION KWH	DEMAND KW	TOTAL BILL
Dec-10	42,000	80.9	$6,500
Jan-11	39,120	71.8	$6,617
Feb-11	40,480	71.8	$6,133
Mar-11	37,440	71.4	$5,947
Apr-11	49,520	170.9	$6,431
May-11	70,240	173.4	$8,355
Jun-11	85,120	165.4	$10,959
Jul-11	58,320	145.5	$11,637
Aug-11	111,040	166.3	$10,222
Sep-11	65,040	180.7	$15,088
Oct-11	58,160	141.7	$8,643
Nov-11	54,000	147.1	$8,151
Totals	**710,480**	**180.7 Max**	**$104,684**

AVERAGE DEMAND **132.2 KW average**
AVERAGE RATE **$0.147** **$/kWh**

Note: Third Party Supply charges for the Justice Complex for highlighted months are estimated due to incomplete billing information.

Figure 1
Electricity Usage Profile

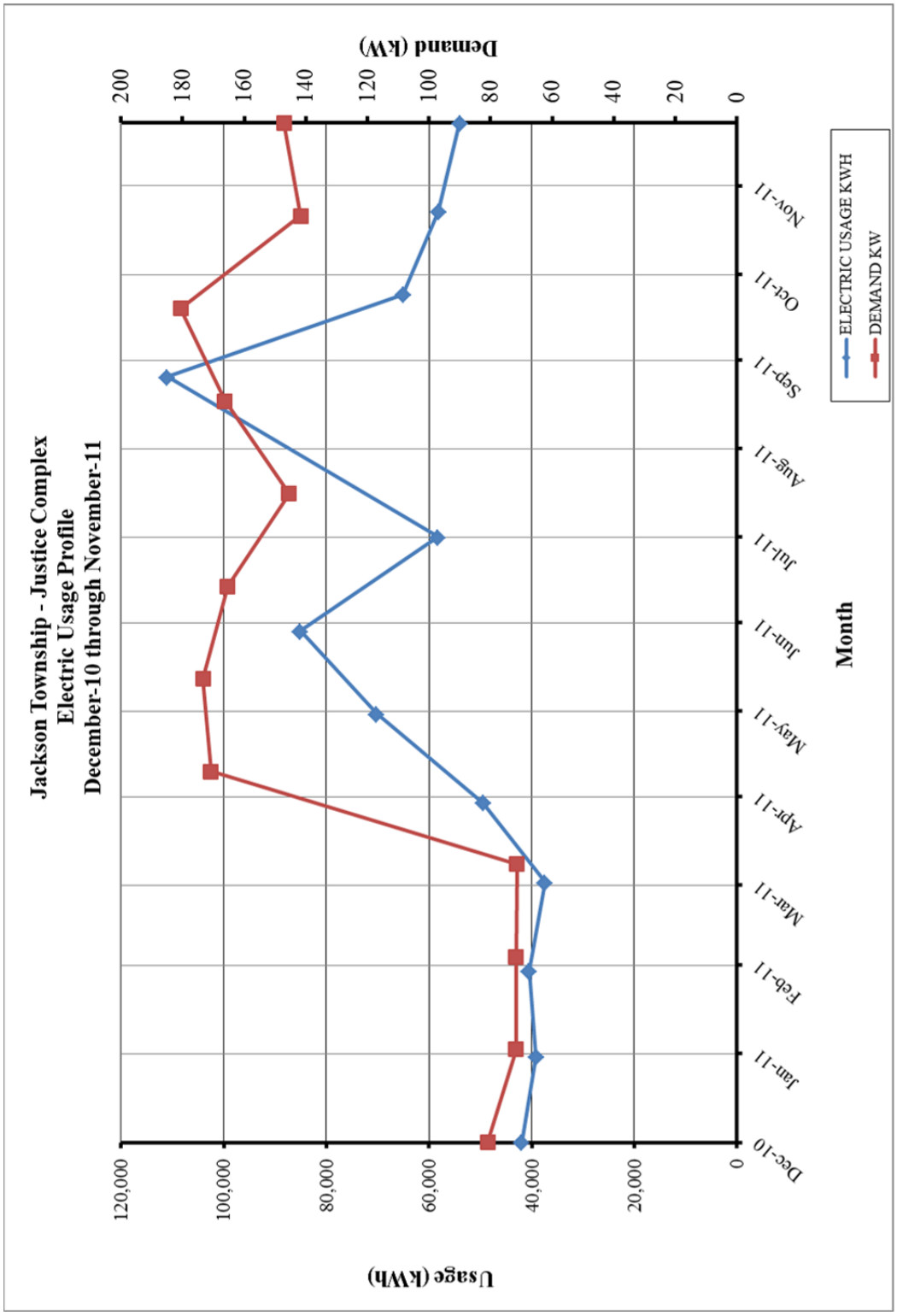
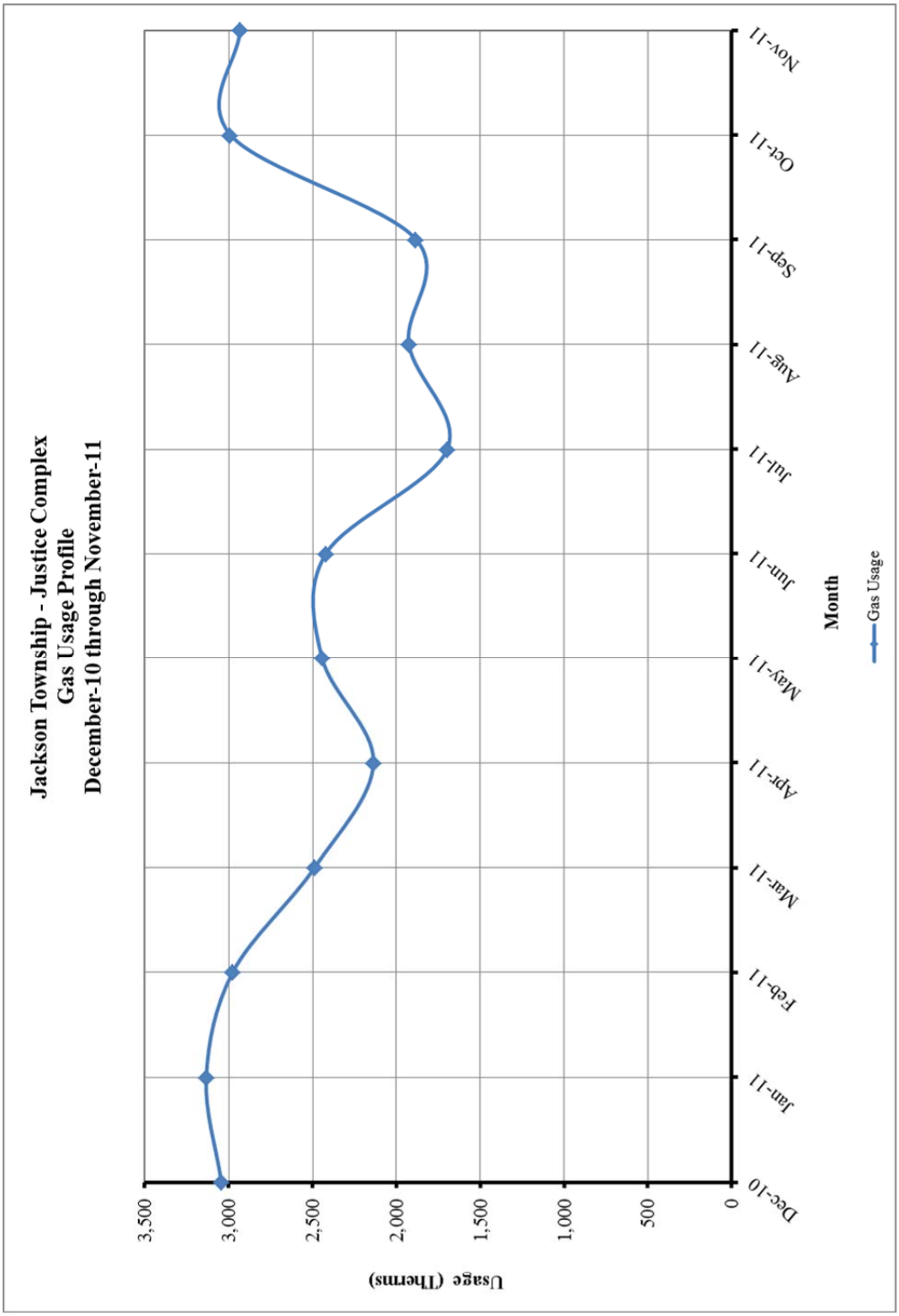


Table 4
Natural Gas Billing Data

NATURAL GAS USAGE SUMMARY		
Utility Provider: New Jersey Natural Gas		
Rate: GSL		
Meter No: 535681		
Account Number 04-3472-4692-14		
Third Party Utility Provider: Pepco Energy Services		
TPS Account No: 43472469214		
MONTH OF USE	**CONSUMPTION (THERMS)**	**TOTAL BILL**
Dec-10	3,044.00	$2,078.94
Jan-11	3,134.00	$4,047.02
Feb-11	2,976.00	$3,911.51
Mar-11	2,487.00	$3,295.91
Apr-11	2,137.00	$2,753.86
May-11	2,444.00	$3,092.70
Jun-11	2,421.00	$3,229.85
Jul-11	1,696.00	$2,363.36
Aug-11	1,926.00	$2,634.89
Sep-11	1,883.00	$1,319.81
Oct-11	2,990.00	$1,931.06
Nov-11	2,931.00	$1,695.12
TOTALS	**30,069.00**	**$32,354.03**
AVERAGE RATE:	**$1.08**	**$/THERM**

Figure 2
Natural Gas Usage Profile



II. FACILITY DESCRIPTION

The Jackson Township Justice Complex is located on 102 Route 528 in Jackson, New Jersey. The 35,000 SF Justice Complex was built in 1998 with no renovations. The building is a two story facility that also includes a basement, comprised of offices, meeting rooms, jail cells, investigation rooms, mechanical rooms and restrooms.

Occupancy Profile

The Justice Complex currently is occupied under two operating schedules. The second floor is occupied by administration offices and conference rooms which are scheduled Monday through Friday between 9:00am and 5:00 pm. The second half of the building is the Police Station which is occupied 24/7. The Justice complex has varying occupancy profiles due to court appearances which are in session several times during the month. On average, the Justice Complex employs 79 full time police officers and 20 full time civilian employees.

Building Envelope

Exterior walls for the Justice Complex are brick faced with a concrete block construction. The amount of insulation within the walls is unknown. The windows throughout the Justice Complex are in good condition and appear to be maintained. Typical windows throughout the Public Library are double pane, operable, ¼" clear glass with aluminum frames. The roof is a sloped, standing seam metal roof. There is no insulation below the roofing which can lead to major heating and cooling losses during peak seasons.

HVAC Systems

The Justice Complex's HVAC system consists of hot water boilers and chiller system which serve six air handling units with hot water and chilled water coils.

The gas fired boilers serve the six air handling units throughout the building. The boilers have an input of 794 MBH and an output of 610 MBH. The boilers are manufactured by Hydrotherm and have a boiler efficiency of 76%. The equipment is in good condition and is within the ASHRAE service life of 30 years for cast iron boilers.

The air handling units that reside in the attic space are equipped with a hot water heating coil and a chilled water cooling coil. The varying sizes of the units ranging from 1,800 CFM to 7,000 CFM, and provide adequate conditioning of the zones throughout the building. The duct work for the air handling units does not contain any insulation or duct wrap, in addition to the exclusion of proper attic insulation, there could be many heating and cooling losses from the ducts in peak seasons. These air handling units are in good condition and are within the ASHRAE service life of 15 years.

The air cooled chiller for the system resides at the rear exterior of the building. The chiller is manufactured by York and has a rated capacity of 110 tons. The rated efficiency of the chiller is 10 EER at full load capacity but has an integrated part load value of 14.8 EER. The chiller

system provides chilled water to the air handling units within the attic spaces. This unit is within the ASHRAE service life of 20 years.

Exhaust System

Air is exhausted from the toilet rooms through the roof exhausters. Due to the occupancy profile of a police station, the roof exhausters operate 24/7.

HVAC System Controls

The air handling units for this facility are controlled through York programmable panels near the air handling units. The system has occupied/unoccupied scheduling capability. The air handlers are also fitted with enthalpy economizer controls.

Domestic Hot Water

Domestic hot water for the restrooms is provided by one (1), 86 gallon, A.O. Smith gas fired hot water heater, capacity of 199 MBH. The hot water heater is located in the mechanical room and servers the lavatories and break rooms throughout the building.

Lighting

Refer to the **Investment Grade lighting Audit Appendix** for a detailed list of the lighting throughout the facility and estimated operating hours per space.

III. 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.

IV. ENERGY CONSERVATION MEASURES

Energy Conservation Measures are developed specifically for this facility. The energy savings and calculations are highly dependent on the information received from the site survey and interviews with operations personnel. The assumptions and calculations should be reviewed by the owner to ensure accurate representation of this facility. The following ECMs were analyzed:

Table 1
ECM Financial Summary

ENERGY CONSERVATION MEASURES (ECM's)					
ECM NO.	**DESCRIPTION**	**NET INSTALLATION COST[A]**	**ANNUAL SAVINGS[B]**	**SIMPLE PAYBACK (Yrs)**	**SIMPLE LIFETIME ROI**
ECM #1	Lighting Controls	$2,600	$2,866	0.9	1553.5%
ECM #2	VFD on Hot Watet Pumps	$16,422	$379	43.3	-65.4%
ECM #3	VFD on Chilled Water Pumps	$23,376	$2,129	11.0	36.6%
ECM #4	Domestic Hot Water Upgrade	$7,102	$1,340	5.3	126.4%
ECM #5	Vending Miser Controls	$437	$422	1.0	1348.2%
ECM #6	NEMA Premium Efficiency Motors for Pumps	$9,992	$683	14.6	2.5%
ECM #7	NEMA Premium Efficiency Motors for AHU's	$7,790	$703	11.1	35.4%
RENEWABLE ENERGY MEASURES (REM's)					
ECM NO.	**DESCRIPTION**	**NET INSTALLATION COST**	**ANNUAL SAVINGS**	**SIMPLE PAYBACK (Yrs)**	**SIMPLE LIFETIME ROI**
REM #1	106 KW PV System	$699,785	$65,981	10.6	41.4%

Notes: A. Cost takes into consideration applicable NJ Smart StartTM incentives.
B. Savings takes into consideration applicable maintenance savings.

Table 2
ECM Energy Summary

ENERGY CONSERVATION MEASURES (ECM's)				
ECM NO.	**DESCRIPTION**	**ANNUAL UTILITY REDUCTION**		
		ELECTRIC DEMAND (KW)	**ELECTRIC CONSUMPTION (KWH)**	**NATURAL GAS (THERMS)**
ECM #1	Lighting Controls	4.0	19,499	0
ECM #2	VFD on Hot Watet Pumps	0	1,257	0
ECM #3	VFD on Chilled Water Pumps	0	14,482	0
ECM #4	Domestic Hot Water Upgrade	0	0	1,241
ECM #5	Vending Miser Controls	0	2,870	0
ECM #6	NEMA Premium Efficiency Motors for Pumps	1.8	4,779	0
ECM #7	NEMA Premium Efficiency Motors for AHU's	1.8	4,647	0
RENEWABLE ENERGY MEASURES (REM's)				
ECM NO.	**DESCRIPTION**	**ANNUAL UTILITY REDUCTION**		
		ELECTRIC DEMAND (KW)	**ELECTRIC CONSUMPTION (KWH)**	**NATURAL GAS (THERMS)**
REM #1	106 KW PV System	106.0	123,884	0

Table 3
Facility Project Summary

ENERGY SAVINGS IMPROVEMENT PROGRAM - POTENTIAL PROJECT					
ENERGY CONSERVATION MEASURES	**ANNUAL ENERGY SAVINGS ($)**	**PROJECT COST ($)**	**SMART START INCENTIVES**	**CUSTOMER COST**	**SIMPLE PAYBACK**
Lighting Controls	$2,866	$3,425	$825	$2,600	0.9
VFD on Hot Water Pumps	$185	$16,530	$108	$16,422	88.8
VFD on Chilled Water Pumps	$2,129	$23,586	$210	$23,376	11.0
Domestic Hot Water Upgrade	$1,340	$7,500	$398	$7,102	5.3
Vending Miser Controls	$422	$437	$0	$437	1.0
~~NEMA Premium Efficiency Motors for Pumps~~	~~$683~~	~~$10,342~~	~~$350~~	~~$9,992~~	~~14.6~~
NEMA Premium Efficiency Motors for AHU's	$703	$8,140	$350	$7,790	11.1
Design / Construction Extras (15%)		*$8,943*		*$8,943*	
Total Project	**$7,645**	**$68,561**	**$1,891**	**$66,670**	**8.7**

Struck Through ECMs are not included in total

Design / Construction Extras are shown as an additional cost for the facility project summary. This cost is included to estimate the costs associated with construction management fees for a larger combined project.

ECM #1: Lighting Controls Upgrade – Occupancy Sensors

Description:

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

Lighting controls come in many forms. Sometimes an additional switch is adequate to provide reduced lighting levels when full light output is not needed. Occupancy sensors detect motion and will switch the lights on when the room is occupied. Occupancy sensors can either be mounted in place of a current wall switch, or on the ceiling to cover large areas.

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 20% 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 or switch mount sensors for individual offices, conference rooms and other miscellaneous Justice Complex rooms. 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:

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

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

Incentives:

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

Occupancy Sensor Fixture Mounted (existing facility only) = $20 per sensor
Occupancy Sensor Remote Mounted (existing facility only) = $35 per sensor

Energy Savings Summary:

ECM #1 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$3,425
NJ Smart Start Equipment Incentive ($):	$825
Net Installation Cost ($):	$2,600
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$2,866
Total Yearly Savings ($/Yr):	$2,866
Estimated ECM Lifetime (Yr):	15
Simple Payback	0.9
Simple Lifetime ROI	1553.5%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$42,990
Internal Rate of Return (IRR)	110%
Net Present Value (NPV)	$31,614.12

ECM #2: Install VFD on Hot Water Pumps

Description:

The hot water system at the Jackson Township Justice Complex utilizes two constant speed pumps to circulate hot water from the boiler plant throughout the building. Based on the survey of the existing equipment it appears that the hot water air handlers have two-way control valves for flow control. Two-way control valves provide flow through the heat exchanger equipment only when there is a call for cooling, and allow the system to reduce flow when it is not needed.

This ECM includes the installation of Variable Frequency Drives on the two (2) 5 horsepower existing hot water pumps. The VFD control is based on a differential pressure sensor in the water loop to measure demand for water. This ECM also includes replacement of the existing pump motors with inverter duty motors that meet NEMA Premium Efficiency Standard, which also helps to reduce energy consumption.

Energy Savings Calculations:

$$\text{Pump Power HP} = \frac{\text{Flow}_{\text{GPM}} \times \text{Head}_{\text{ft-hd.}}}{3650 \times \eta_{\text{Pump}} \times \eta_{\text{motor}}}$$

$$\text{Energy Consumption (kWh)} = \text{Motor HP} \times 0.746 \frac{\text{kW}}{\text{HP}} \times \text{Hours of operation (Hr)} \times \frac{1}{\eta_{\text{motor}}}$$

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

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

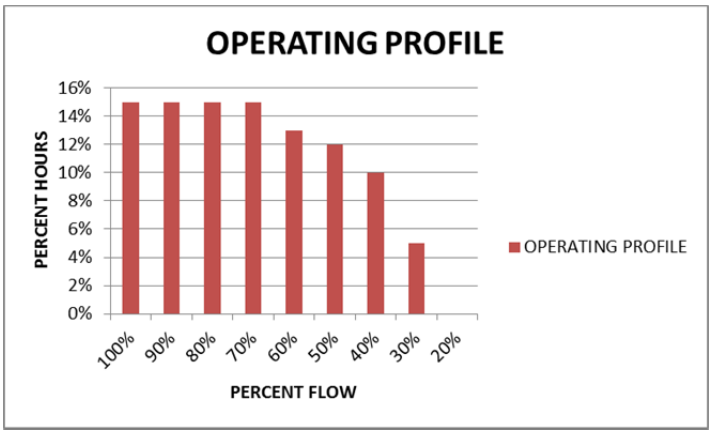
Affinity Laws are used in order to calculate energy savings by calculating the reduced power consumption requirement based a reduction in flow. Affinity laws, are as following:

Q = Flow, n = RPM, p = total pressure

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

HOT WATER SET #1 PUMPS VFD CALULATION			
ECM INPUTS	**EXISTING**	**PROPOSED**	**SAVINGS**
ECM INPUTS	CV Pumps	VFD Pumps	
Flow Control	Throttle	VFD	-
Motor Nameplate HP	5.0	5.0	
Flow* (GPM)	71	71	-
Head* (Ft)	85	85	-
Pump Efficiency (%)	75.0%	75.0%	-
Motor Efficiency (%)	85.5%	89.5%	4.0%
Operating Hrs	5100	5100	-
Estimated Power (HP)	2.4	2.3	0.11
Elec Cost ($/kWh)	0.147	0.147	-
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	**EXISTING**	**PROPOSED**	**SAVINGS**
Electric Energy (kWh)	10,575	9,319	1,257
Electric Energy Cost ($)	$1,555	$1,370	$185
COMMENTS:			

Estimated Operating Profile with VFD



Energy Savings Summary:

ECM #2 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$16,530
NJ Smart Start Equipment Incentive ($):	$108
Net Installation Cost ($):	$16,422
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$185
Total Yearly Savings ($/Yr):	$185
Estimated ECM Lifetime (Yr):	15
Simple Payback	88.8
Simple Lifetime ROI	-83.1%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$2,775
Internal Rate of Return (IRR)	-17%
Net Present Value (NPV)	($14,213.48)

ECM #3: Install VFD on Chilled Water Pumps

Description:

The chilled water system at the Jackson Township Justice Complex utilizes two constant speed pumps to circulate chilled water from the air cooled chiller at the mechanical room throughout the building. Based on the survey of the existing equipment it appears that the chilled water air handlers have two-way control valves for flow control. Two-way control valves provide flow through the heat exchanger equipment only when there is a call for cooling, and allow the system to reduce flow when it is not needed.

This ECM includes the installation of Variable Frequency Drives on the two (2) 15 horsepower existing chilled water pumps. The VFD control is based on a differential pressure sensor in the water loop to measure demand for water. This ECM also includes replacement of the existing pump motors with inverter duty motors that meet NEMA Premium Efficiency Standard, which also helps to reduce energy consumption.

Energy Savings Calculations:

$$\text{Pump Power HP} = \frac{\text{Flow}_{\text{GPM}} \times \text{Head}_{\text{ft-hd.}}}{3650 \times \eta_{\text{Pump}} \times \eta_{\text{motor}}}$$

$$\text{Energy Consumption (kWh)} = \text{Motor HP} \times 0.746 \frac{\text{kW}}{\text{HP}} \times \text{Hours of operation (Hr)} \times \frac{1}{\eta_{\text{motor}}}$$

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

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

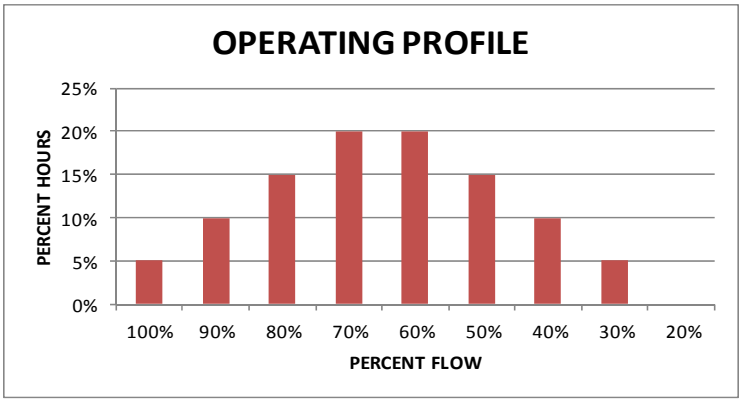
Affinity Laws are used in order to calculate energy savings by calculating the reduced power consumption requirement based a reduction in flow. Affinity laws, are as following:

Q = Flow, n = RPM, p = total pressure

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

CHILLER PUMPS VFD CALULATION			
ECM INPUTS	**EXISTING**	**PROPOSED**	**SAVINGS**
ECM INPUTS	CV Pumps	VFD Pumps	
Flow Control	Throttle	VFD	-
Motor Nameplate HP	15.0	15.0	
Flow* (GPM)	264	264	-
Head* (Ft)	100	100	-
Pump Efficiency (%)	75.0%	75.0%	-
Motor Efficiency (%)	91.0%	93.0%	2.0%
Operating Hrs	3675	3675	-
Estimated Power (HP)	9.8	9.6	0.21
Elec Cost ($/kWh)	0.147	0.147	-
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	**EXISTING**	**PROPOSED**	**SAVINGS**
Electric Energy (kWh)	29,428	14,946	14,482
Electric Energy Cost ($)	$4,326	$2,197	$2,129
COMMENTS:			

Estimated Operating Profile with VFD based on information gathered from the site visit.



Energy Savings Summary:

ECM #3 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$23,586
NJ Smart Start Equipment Incentive ($):	$210
Net Installation Cost ($):	$23,376
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$2,129
Total Yearly Savings ($/Yr):	$2,129
Estimated ECM Lifetime (Yr):	15
Simple Payback	11.0
Simple Lifetime ROI	36.6%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$31,935
Internal Rate of Return (IRR)	4%
Net Present Value (NPV)	$2,039.86

ECM #4: High Efficiency Gas Hot Water Heater

Description:

The Jackson Township Justice Complex has an existing gas-fired hot water heater which is located in a mechanical room on the back side of the building. The heater is past its useful life and could be replaced with a much more efficient hot water heating system.

This ECM will replace the gas fired domestic water heaters with a 98.5% thermal efficient Bradford White eF Series Natural Gas fired 199 MBH and 100 gallons of storage domestic water heater.

Energy Savings Calculations:

CONDENSING DOM. HOT WATER HEATER CALCULATIONS			
ECM INPUTS	**EXISTING**	**PROPOSED**	**SAVINGS**
ECM INPUTS	Existing Hot Water Heater	Bradford White High Efficiency	
Building Type	Public Order & Safety		
Building Square-foot	35,000	35,000	
Domestic Water Usage, kBtu	528,500.00	528,500.00	
DHW Heating Fuel Type	Gas	Gas	
Heating Efficiency	80%	99%	19%
Total Usage (kBTU)	660,625	536,548	124,077
Nat Gas Cost ($/Therm)	$ 1.080	$ 1.080	
ENERGY SAVINGS CALCULATIONS			
ECM RESULTS	**EXISTING**	**PROPOSED**	**SAVINGS**
Natural Gas Usage (Therms)	6,606	5,365	1,241
Energy Cost ($)	$7,135	$5,795	$1,340
COMMENTS:	Savings are based on Energy Information Administration Commercial Building Energy Consumption Survey 2003 Information		

Energy Density for "Public Order & Safety" type building = 15.1 kBtu / SF / year

$$DHW\ \ Heat\ Usage = Energy\ Density\left(\frac{kBtu\ yr}{SF}\right) \times Building\ Square\ Footage\ \ (SF)$$

$$DHW\ Total\ Usage = \frac{Dom\ HW\ \ Heat\ Cons.(Btu)}{Heating\ \ Eff.(\%) \times Fuel\ \ Heat\ Value\left(\frac{BTU}{Fuel\ Unit}\right)}$$

$$Energy\ Cost = Heating\ \ Fuel\ Usage(Fuel\ Units) \times Ave\ Fuel\ Cost\left(\frac{\$}{Fuel\ Unit}\right)$$

Energy Savings Summary:

ECM #4 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$7,500
NJ Smart Start Equipment Incentive ($):	$398
Net Installation Cost ($):	$7,102
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$1,340
Total Yearly Savings ($/Yr):	$1,340
Estimated ECM Lifetime (Yr):	12
Simple Payback	5.3
Simple Lifetime ROI	126.4%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$16,080
Internal Rate of Return (IRR)	16%
Net Present Value (NPV)	$6,236.37

ECM #5: Vending Miser Controls

Description:

The Jackson Township Justice Complex currently utilizes vending machines in select areas within the building. Vending machines are common within waiting areas or lobbies which can be in use for a limited time during the day. The installation of the Vending Miser system will help reduce the operating hours of vending machines.

Cold beverage machines regularly operate inefficiently trying to maintain a constant cool temperature within the machine and snack machines with no cooling usually have lights that operate 24/7. The VendingMiser® system incorporates innovative energy-saving technology into a small plug-and-play device that in conjunction with a passive infrared sensor regulate the operation of the cold beverage and snack machines based on occupancy and room temperature. This ECM approximates the installation of three of these control systems, one for the snack machine and two for the cold beverage machine.

Energy Savings Calculations:

See **Vending Miser Appendix** for calculation methods and analysis.

Energy Savings Summary:

ECM #5 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$437
NJ Smart Start Equipment Incentive ($):	$0
Net Installation Cost ($):	$437
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$422
Total Yearly Savings ($/Yr):	$422
Estimated ECM Lifetime (Yr):	15
Simple Payback	1.0
Simple Lifetime ROI	1348.2%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$6,329
Internal Rate of Return (IRR)	97%
Net Present Value (NPV)	$4,599.61

ECM #6: Install NEMA Premium® Efficiency Motors AHU's

Description:

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

The Justice Complex has a number of air handling unit motors that are candidates to be replaced with NEMA Premium® efficiency motors. The motors are connected to the six air handling units throughout the building. The units are located in separate attic areas of the complex, which provide warm and cool air to the spaces they serve. The current motors operate with efficiencies below 90%, and most are approaching the end of their useful service life.

The units currently have York controls which are located on the units and based on a site survey these units are assumed to be in operation almost 24 hours a day during building occupancy. The motor operating hours were estimated with this in mind, and using the building occupancy for the year which is approximately 24/7.

This energy conservation measure replaces the existing lower efficiency electric motors with NEMA Premium® efficiency motors. NEMA Premium® is the most efficient motor designation in the marketplace today. The energy savings and payback are subject to change based on the pool filtration usage during the year. An implementation summary of the motor is provided below.

IMPLEMENTATION SUMMARY					
EQMT ID	**FUNCTION**	**MOTOR HP**	**HOURS OF OPERATION**	**EXISTING EFFICIENCY**	**NEMA PREMIUM EFFICIENCY**
AHU - 1	Air Handling Unit Fan Motor	10	5,040	86.5%	92.4%
AHU - 2	Air Handling Unit Fan Motor	7.5	5,040	88.5%	91.7%
AHU - 3	Air Handling Unit Fan Motor	10	5,040	82.5%	92.4%
AHU - 4	Air Handling Unit Fan Motor	3	5,040	82.5%	89.5%
AHU - 5	Air Handling Unit Fan Motor	10	5,040	88.5%	92.4%
AHU - 6	Air Handling Unit Fan Motor	7.5	5,040	87.5%	91.7%

Energy Savings Calculations:

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

where, HP = Motor Nameplate Horsepower Rating

LF = Load Factor Motor Efficiency = Motor Nameplate Efficiency

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

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

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

PREMIUM EFFICIENCY MOTOR CALCULATIONS							
EQMT ID	MOTOR HP	LOAD FACTOR	EXISTING EFFICIENCY	NEMA PREMIUM EFFICIENCY	POWER SAVINGS kW	ENERGY SAVINGS kWH	COST SAVINGS
AHU - 1	10	90%	86.5%	92.4%	0.50	1,622	$239
AHU - 2	7.5	90%	88.5%	91.7%	0.20	1,006	$148
AHU - 3	10	90%	82.5%	92.4%	0.87	1,622	$239
AHU - 4	3	90%	82.5%	89.5%	0.19	395	$58
AHU - 5	10	90%	88.5%	92.4%	0.32	1,622	$239
AHU - 6	7.5	90%	87.5%	91.7%	0.26	1,006	$148
TOTAL					**1.8**	**4,647**	**$683**

Equipment Cost and Incentives

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

INCENTIVES	
HORSE POWER	NJ SMART START INCENTIVE
1	$50
1.5	$50
2	$60
3	$60
5	$60
7.5	$90
10	$100
15	$115
20	$125
25	$130
30	$150
40	$180

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

MOTOR REPLACEMENT SUMMARY						
EQMT ID	**MOTOR POWER HP**	**INSTALLED COST**	**SMART START INCENTIVE**	**NET COST**	**TOTAL SAVINGS**	**SIMPLE PAYBACK**
AHU - 1	10	$2,560	$100	$2,460	$239	10.3
AHU - 2	7.5	$1,971	$90	$1,881	$148	12.7
AHU - 3	10	$2,560	$100	$2,460	$239	10.3
AHU - 4	3	$1,049	$60	$989	$58	17.0
AHU - 5	10	$2,560	$100	$2,460	$239	10.3
AHU - 6	7.5	$1,971	$90	$1,881	$148	12.7
TOTAL		**$8,140**	**$350**	**$7,790**	**$683**	**11.4**

Energy Savings Summary:

ECM #6 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$10,342
NJ Smart Start Equipment Incentive ($):	$350
Net Installation Cost ($):	$9,992
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$683
Total Yearly Savings ($/Yr):	$683
Estimated ECM Lifetime (Yr):	15
Simple Payback	14.6
Simple Lifetime ROI	2.5%
Simple Lifetime Maintenance Savings	0
Simple Lifetime Savings	$10,245
Internal Rate of Return (IRR)	0%
Net Present Value (NPV)	($1,838.39)

ECM #7: Install NEMA Premium® Efficiency Motors

Description:

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

The Justice Complex has a number of motors that are candidates to be replaced with NEMA Premium® efficiency motors. The motors are located in the mechanical room which serves the hot water and chilled water loops. The current motors operate with efficiencies below 91%, and many are approaching the end of their useful service life.

Boiler operating hours were estimated based on the heating and cooling degree days as well as the building operating schedule. These pumps operate in a primary/standby setup; this reduces the overall operating hours of each pump individually by approximately 50%.

This energy conservation measure replaces the existing lower efficiency electric motors with NEMA Premium® efficiency motors. NEMA Premium® is the most efficient motor designation in the marketplace today. The energy savings and payback are subject to change based on the pool filtration usage during the year. An implementation summary of the motor is provided below.

IMPLEMENTATION SUMMARY					
EQMT ID	**FUNCTION**	**MOTOR HP**	**HOURS OF OPERATION**	**EXISTING EFFICIENCY**	**NEMA PREMIUM EFFICIENCY**
HWP-1	Boiler Pump	5	5,100	86.5%	90.2%
HWP-2	Boiler Pump	5	5,100	86.5%	90.2%
CHWP-1	Chiller Pump	15	3,675	86.5%	92.4%
CHWP-2	Chiller Pump	15	3,675	86.5%	92.4%

Energy Savings Calculations:

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

where, HP = Motor Nameplate Horsepower Rating

LF = Load Factor Motor Efficiency = Motor Nameplate Efficiency

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

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

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

PREMIUM EFFICIENCY MOTOR CALCULATIONS							
EQMT ID	MOTOR HP	LOAD FACTOR	EXISTING EFFICIENCY	NEMA PREMIUM EFFICIENCY	POWER SAVINGS kW	ENERGY SAVINGS kWH	COST SAVINGS
HWP-1	5	90%	86.5%	90.2%	0.16	1,049	$154
HWP-2	5	90%	86.5%	90.2%	0.16	1,049	$154
CHWP-1	15	90%	86.5%	92.4%	0.74	620	$91
CHWP-2	15	90%	86.5%	92.4%	0.74	2,062	$303
TOTAL					**1.8**	**4,779**	**$703**

Equipment Cost and Incentives

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

INCENTIVES	
HORSE POWER	NJ SMART START INCENTIVE
1	$50
1.5	$50
2	$60
3	$60
5	$60
7.5	$90
10	$100
15	$115
20	$125
25	$130
30	$150
40	$180

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

MOTOR REPLACEMENT SUMMARY						
EQMT ID	MOTOR POWER HP	INSTALLED COST	SMART START INCENTIVE	NET COST	TOTAL SAVINGS	SIMPLE PAYBACK
HWP-1	5	$1,519	$60	$1,459	$154	9.5
HWP-2	5	$1,519	$60	$1,459	$154	9.5
CHWP-1	15	$3,652	$115	$3,537	$91	38.8
CHWP-2	15	$3,652	$115	$3,537	$303	11.7
TOTAL		**$10,342**	**$350**	**$9,992**	**$703**	**14.2**

Energy Savings Summary:

ECM #7 - ENERGY SAVINGS SUMMARY	
Installation Cost ($):	$8,140
NJ Smart Start Equipment Incentive ($):	$350
Net Installation Cost ($):	$7,790
Maintenance Savings ($/Yr):	$0
Energy Savings ($/Yr):	$703
Total Yearly Savings ($/Yr):	$703
Estimated ECM Lifetime (Yr):	15
Simple Payback	11.1
Simple Lifetime ROI	35.4%
Simple Lifetime Maintenance Savings	$0
Simple Lifetime Savings	$10,545
Internal Rate of Return (IRR)	4%
Net Present Value (NPV)	$602.37

V. 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. Turn off computers when not in use. Ensure computers are not running in screen saver mode which saves the monitor screen not energy.

F. Ensure outside air dampers are functioning properly and only open during occupied mode.

APPENDIX A

ECM COST & SAVINGS BREAKDOWN

CONCORD ENGINEERING GROUP

Jackson Township LGEA - Justice Complex

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	Lighting Controls	$3,425	$0	$825	$2,600	$2,866	$0	$2,866	15	$42,990	$0	1553.5%	0.9	110.23%	$31,614.12
ECM #2	VFD on Hot Watet Pumps	$6,030	$10,500	$108	$16,422	$379	$0	$379	15	$5,685	$0	-65.4%	43.3	-11.04%	($11,897.52)
ECM #3	VFD on Chilled Water Pumps	$10,786	$12,800	$210	$23,376	$2,129	$0	$2,129	15	$31,935	$0	36.6%	11.0	4.18%	$2,039.86
ECM #4	Domestic Hot Water Upgrade	$5,000	$2,500	$398	$7,102	$1,340	$0	$1,340	12	$16,080	$0	126.4%	5.3	15.53%	$6,236.37
ECM #5	Vending Miser Controls	$437	$0	$0	$437	$422	$0	$422	15	$6,329	$0	1348.2%	1.0	96.54%	$4,599.61
ECM #6	NEMA Premium Efficiency Motors for Pumps	$10,342	$0	$350	$9,992	$683	$0	$683	15	$10,245	$0	2.5%	14.6	0.31%	($1,838.39)
ECM #7	NEMA Premium Efficiency Motors for AHUs	$8,140	$0	$350	$7,790	$703	$0	$703	15	$10,545	$0	35.4%	11.1	4.05%	$602.37
REM RENEWABLE ENERGY AND FINANCIAL COSTS AND SAVINGS SUMMARY															
REM #1	106 KW PV System	$699,785	$0	$0	$699,785	$18,211	$47,770	$65,981	15	$989,715	$716,550	41.4%	10.6	4.68%	$87,891.89

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* .

APPENDIX B

Concord Engineering Group, Inc.

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

SmartStart Building Incentives

The NJ SmartStart Buildings Program offers financial incentives on a wide variety of building system equipment. The incentives were developed to help offset the initial cost of energy-efficient equipment. The following tables show the current available incentives as of February 15, 2011:

Electric Chillers

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

Energy Efficiency must comply with ASHRAE 90.1-2007

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 - $92 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 90.1-2007

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%

Ground Source Heat Pumps

Closed Loop	$450 per ton, EER ≥ 16 $600 per ton, EER ≥ 18 $750 per ton, EER ≥ 20

Energy Efficiency must comply with ASHRAE 90.1-2007

Variable Frequency Drives

Variable Air Volume	$65 - $155 per hp
Chilled-Water Pumps	$60 per VFD rated hp
Compressors	$5,250 to $12,500 per drive
Cooling Towers ≥ 10 hp	$60 per VFD rated hp

Natural Gas Water Heating

Gas Water Heaters ≤ 50 gallons, 0.67 energy factor or better	$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 (1-4 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 Including Parking Lot	$25 per fixture
T-5 and T-8 High Bay Fixtures	$16 - $200 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

Prescriptive Lighting - LED

LED New Exit Sign Fixture Existing Facility < 75 kw Existing Facility > 75 kw	 $20 per fixture $10 per fixture
LED Display Case Lighting	$30 per display case
LED Shelf-Mtd. Display & Task Lights	$15 per linear foot
LED Portable Desk Lamp	$20 per fixture
LED Wall-wash Lights	$30 per fixture
LED Recessed Down Lights	$35 per fixture
LED Outdoor Pole/Arm-Mounted Area and Roadway Luminaries	$175 per fixture
LED Outdoor Pole/Arm-Mounted Decorative Luminaries	$175 per fixture
LED Outdoor Wall-Mounted Area Luminaries	$100 per fixture
LED Parking Garage Luminaries	$100 per fixture
LED Track or Mono-Point Directional Lighting Fixtures	$50 per fixture
LED High-Bay and Low-Bay Fixtures for Commercial & Industrial Bldgs.	$150 per fixture
LED High-Bay-Aisle Lighting	$150 per fixture
LED Bollard Fixtures	$50 per fixture
LED Linear Panels (2x2 Troffers only)	$100 per fixture
LED Fuel Pump Canopy	$100 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 90.1-2007 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%

APPENDIX C

OMB No. 2060-0347

STATEMENT OF ENERGY PERFORMANCE
Jackson Township - Justice Complex

Building ID: 2962090
For 12-month Period Ending: November 30, 2011[1]
Date SEP becomes ineligible: N/A
Date SEP Generated: January 10, 2012

Facility
Jackson Township - Justice Complex
102 Jackson Drive
Jackson, NJ 08527

Facility Owner
Jackson Township
95 Veterans Highway
Jackson, NJ 08527

Primary Contact for this Facility
Daniel Burke
95 Veterans Highway
Jackson, NJ 08527

Year Built: 1998
Gross Floor Area (ft²): 35,000

Energy Performance Rating[2] (1-100) N/A

Site Energy Use Summary[3]

Electricity - Grid Purchase(kBtu)	2,424,158
Natural Gas (kBtu)[4]	3,006,900
Total Energy (kBtu)	5,431,058

Energy Intensity[4]

Site (kBtu/ft²/yr)	155
Source (kBtu/ft²/yr)	321

Emissions (based on site energy use)

Greenhouse Gas Emissions ($MtCO_2e$/year)	503

Electric Distribution Utility
Jersey Central Power & Light Co [FirstEnergy Corp]

National Median Comparison

National Median Site EUI	82
National Median Source EUI	146
% Difference from National Median Source EUI	120%
Building Type	Fire Station/Police Station

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[5] **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. Values represent energy intensity, annualized to a 12-month period.
5. 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	Jackson Township - Justice Complex	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	Fire Station/Police Station	Is this an accurate description of the space in question?		☐
Location	102 Jackson Drive, Jackson, NJ 08527	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 a hospital (general medical and surgical)) nor can they be submitted as representing only a portion of a building		☐
Jackson Township - Justice Complex - Courthouse (Courthouse)				
CRITERION	**VALUE AS ENTERED IN PORTFOLIO MANAGER**	**VERIFICATION QUESTIONS**	**NOTES**	☑
Gross Floor Area	3,800 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.		☐
Weekly operating hours	40 Hours	Is this the total number of hours per week that the Courthouse is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		☐
Workers on Main Shift	10	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100.		☐
Number of PCs	10	Is this the number of personal computers in the Courthouse?		☐
Percent Cooled	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐
Jackson Township - Justice Complex - Offices (Office)				
CRITERION	**VALUE AS ENTERED IN PORTFOLIO MANAGER**	**VERIFICATION QUESTIONS**	**NOTES**	☑

Gross Floor Area	4,000 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.		☐
Weekly operating hours	40 Hours	Is this the total number of hours per week that the Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		☐
Workers on Main Shift	20	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100. The normal worker density ranges between 0.3 and 5.3 workers per 1000 square feet (92.8 square meters)		☐
Number of PCs	20	Is this the number of personal computers in the Office?		☐
Percent Cooled	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐

Jackson Township - Justice Complex - Police Bldg (Other)

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑
Gross Floor Area	27,200 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.		☐
Number of PCs	50(Optional)	Is this the number of personal computers in the space?		☐
Weekly operating hours	168Hours(Optional)	Is this the total number of hours per week that the space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		☐
Workers on Main Shift	35(Optional)	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100.		☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Jersey Central Power & Light Co [FirstEnergy Corp]

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))
11/01/2011	11/30/2011	54,000.00
10/01/2011	10/31/2011	58,160.00
09/01/2011	09/30/2011	65,040.00
08/01/2011	08/31/2011	111,040.00
07/01/2011	07/31/2011	58,320.00
06/01/2011	06/30/2011	85,120.00
05/01/2011	05/31/2011	70,240.00
04/01/2011	04/30/2011	49,520.00
03/01/2011	03/31/2011	37,440.00
02/01/2011	02/28/2011	40,480.00
01/01/2011	01/31/2011	39,120.00
12/01/2010	12/31/2010	42,000.00
Electric Consumption (kWh (thousand Watt-hours))		**710,480.00**
Electric Consumption (kBtu (thousand Btu))		**2,424,157.76**
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		**2,424,157.76**
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)
11/01/2011	11/30/2011	2,931.00
10/01/2011	10/31/2011	2,990.00
09/01/2011	09/30/2011	1,883.00
08/01/2011	08/31/2011	1,926.00
07/01/2011	07/31/2011	1,696.00
06/01/2011	06/30/2011	2,421.00
05/01/2011	05/31/2011	2,444.00
04/01/2011	04/30/2011	2,137.00
03/01/2011	03/31/2011	2,487.00
02/01/2011	02/28/2011	2,976.00

01/01/2011	01/31/2011	3,134.00
12/01/2010	12/31/2010	3,044.00
Gas Consumption (therms)		**30,069.00**
Gas Consumption (kBtu (thousand Btu))		**3,006,900.00**
Total Natural Gas Consumption (kBtu (thousand Btu))		**3,006,900.00**
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
Jackson Township - Justice Complex
102 Jackson Drive
Jackson, NJ 08527

Facility Owner
Jackson Township
95 Veterans Highway
Jackson, NJ 08527

Primary Contact for this Facility
Daniel Burke
95 Veterans Highway
Jackson, NJ 08527

General Information

Jackson Township - Justice Complex	
Gross Floor Area Excluding Parking: (ft^2)	35,000
Year Built	1998
For 12-month Evaluation Period Ending Date:	November 30, 2011

Facility Space Use Summary

Jackson Township - Justice Complex - Courthouse	
Space Type	Courthouse
Gross Floor Area(ft^2)	3,800
Weekly operating hours	40
Workers on Main Shift	10
Number of PCs	10
Percent Cooled	50% or more
Percent Heated	50% or more

Jackson Township - Justice Complex - Police Bldg	
Space Type	Other - Fire Station/Police Station
Gross Floor Area(ft^2)	27,200
Number of PCs[o]	50
Weekly operating hours[o]	168
Workers on Main Shift[o]	35

Jackson Township - Justice Complex - Offices	
Space Type	Office
Gross Floor Area(ft^2)	4,000
Weekly operating hours	40
Workers on Main Shift	20
Number of PCs	20
Percent Cooled	50% or more
Percent Heated	50% or more

Energy Performance Comparison

	Evaluation Periods		Comparisons		
Performance Metrics	**Current** (Ending Date 11/30/2011)	**Baseline** (Ending Date 11/30/2011)	**Rating of 75**	**Target**	**National Median**
Energy Performance Rating	N/A	N/A	75	N/A	N/A
Energy Intensity					
Site (kBtu/ft^2)	155	155	65	N/A	82
Source (kBtu/ft^2)	321	321	134	N/A	146
Energy Cost					
$/year	N/A	N/A	N/A	N/A	N/A
$/$ft^2$/year	N/A	N/A	N/A	N/A	N/A
Greenhouse Gas Emissions					
$MtCO_2e$/year	503	503	210	N/A	266
$kgCO_2e/ft^2$/year	14	14	6	N/A	7

More than 50% of your building is defined as Fire Station/Police Station. This building is currently ineligible for a rating. Please note the National Median column represents the CBECS national median data for Fire Station/Police Station. This building uses 120% more energy per square foot than the CBECS national median for Fire Station/Police Station.

Notes:
o - This attribute is optional.
d - A default value has been supplied by Portfolio Manager.

APPENDIX D

MAJOR EQUIPMENT LIST

Concord Engineering Group

Jackson Township - Justice Complex

AHUs

Tag	AHU-1,2,3	AHU-4	AHU-5
Unit Type	CHW/HW Coil Air handling unit	CHW/HW Coil Air handling unit	CHW/HW Coil Air handling unit
Qty	3	1	1
Location	Attic	Attic	Attic
Area Served	Justice Complex	Justice Complex	Justice Complex
Manufacturer	York	York	York
Model #	-	-	-
Serial #	-	-	-
Cooling Type	Chilled Water Coil	Chilled Water Coil	Chilled Water Coil
Cooling Capacity	342/275/270 MBH	75 MBH	323 MBH
Cooling Efficiency (SEER/EER)	8.6 EER	8.6 EER	8.6 EER
Heating Type	Hot Water Coil	Hot Water Coil	Hot Water Coil
Heating Input (MBH)	180/84/80 MBH	25 MBH	115 MBH
Efficiency	76%	76%	76%
Fuel	Hot Water Coil	Hot Water Coil	Hot Water Coil
Approx Age	12	12	12
ASHRAE Service Life	15	15	15
Remaining Life	3	3	3
Comments			

Note:
"N/A" = Not Applicable.
"-" = Info Not Available

AHUs

Tag	AHU-6		
Unit Type	CHW/HW Coil Air handling unit		
Qty	1		
Location	Attic		
Area Served	Justice Complex		
Manufacturer	York		
Model #	-		
Serial #	-		
Cooling Type	Chilled Water Coil		
Cooling Capacity	235 MBH		
Cooling Efficiency (SEER/EER)	8.6 EER		
Heating Type	Hot Water Coil		
Heating Input (MBH)	80 MBH		
Efficiency	76%		
Fuel	Hot Water Coil		
Approx Age	12		
ASHRAE Service Life	15		
Remaining Life	3		
Comments			

Note:
"N/A" = Not Applicable.
"-" = Info Not Available

MAJOR EQUIPMENT LIST

Concord Engineering Group

Jackson Township - Justice Complex

Boilers

Tag			
Unit Type	Modular Boilers		
Qty	2		
Location	Mechanical Room		
Area Served	Air Handlers		
Manufacturer	HydroTherm		
Model #	MG-770		
Serial #	OR-2003-1115		
Input Capacity (Btu/Hr)	794,000		
Rated Output Capacity (Btu/Hr)	610,000		
Approx. Efficiency %	76.8%		
Fuel	Natural Gas		
Approx Age	12		
ASHRAE Service Life	30		
Remaining Life	18		
Comments	Economite Burner Model: DS45 Serial: 0424295		

Note:
"N/A" = Not Applicable.
"-" = Info Not Available

MAJOR EQUIPMENT LIST

Concord Engineering Group

Jackson Township - Justice Complex

Cooling Tower

Tag			
Unit Type	Air Cooled Chiller		
Qty	1		
Location	Rear Outside		
Area Served	Justice Complex		
Manufacturer	York		
Model #	YLAA0120SE		
Serial #	2DWM006153		
Refrigerant	R410A		
Cooling Capacity (Tons)	110 Tons		
Cooling Efficiency (KW/Ton)	9.6 EER		
Volts / Phase / Hz	460/3/60		
Fuel	R410A		
Chilled Water GPM / ΔT	264 GPM @ 10°F ΔT		
Condenser Water GPM / ΔT	-		
Approx Age	12		
ASHRAE Service Life	20		
Remaining Life	8		
Comments			

Note:
"N/A" = Not Applicable.
"-" = Info Not Available

MAJOR EQUIPMENT LIST

Concord Engineering Group

Jackson Township - Justice Complex

Domestic Water Heaters

Tag			
Unit Type	Domestic Hot Water		
Qty	1		
Location	Mechanical Room		
Area Served	Justice Complex		
Manufacturer	A.O. Smith		
Model #	BTP 199 960		
Serial #	MC96-0508884-960		
Size (Gallons)	86 Gallons		
Input Capacity (MBH/KW)	199 MBH		
Recovery (Gal/Hr)	180.9 Gal/Hr		
Efficiency %	80%		
Fuel	Natural Gas		
Approx Age	14		
ASHRAE Service Life	12		
Remaining Life	(2)		
Comments			

Note:
"N/A" = Not Applicable.
"-" = Info Not Available

MAJOR EQUIPMENT LIST

Concord Engineering Group

Jackson Township - Justice Complex

Pumps

Tag	P-1,P-2	P-3,P-4	
Unit Type	End Suction	Inline Cent	
Qty	2	2	
Location	Mechanical Room	Mechanical Room	
Area Served	Chiller Water System	Hot Water System	
Manufacturer	Taco	Taco	
Model #	2512-3 LC	2095-7 VL	
Serial #	-	-	
Horse Power	15 HP	5 HP	
Flow	264 GPM @100 FTHD	71 GPM @ 85 FTHD	
Motor Info	Baldor	Baldor	
Electrical Power	3/460	3/460	
RPM	1750 RPM	1750 RPM	
Motor Efficiency %	(1) 91% / (2) 87.9%	85.5%	
Approx Age	12	12	
ASHRAE Service Life	20	20	
Remaining Life	8	16	
Comments	30% Polyp Glycol Water P-2 Standby		

Note:
"N/A" = Not Applicable.
"-" = Info Not Available

APPENDIX E

Investment Grade Lighting Audit

CEG Job #: 9C11039

Project: Jackson Township LGEA
102 Jackson Drive
Jackson, NJ 08527

Bldg. Sq. Ft. 35,000

Jackson Justice Complex

KWH COST: $0.147

ECM ##: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING									SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
1	3-Office	2400	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	825.6	$121.36	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	3-Conference Room	2400	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1,238.4	$182.04	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	3-Conference Room	2400	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1,238.4	$182.04	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
4	3-Mens RR	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165.0	$24.26	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
4	3-Women RR	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165.0	$24.26	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	3-Chief Office	2400	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	825.6	$121.36	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	3-Chief Secretary	2400	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	825.6	$121.36	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	3-Office	2400	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	825.6	$121.36	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	3-Break Room	2400	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	412.8	$60.68	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	3-Captain Office	2400	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	825.6	$121.36	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	3-Captain 2 Office	2400	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	825.6	$121.36	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	3-Hallway	2400	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.69	1,651.2	$242.73	8	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
3	3to2 Stairwell	8760	6	2	3',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	62	0.37	3,258.7	$479.03	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

Investment Grade Lighting Audit

ECM ##: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING									SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
1	2-Hallway	8760	17	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.46	12,807.1	$1,882.65	17	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Office		4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	0.0	$0.00	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Records	2400	14	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.20	2,889.6	$424.77	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Storage	800	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.09	68.8	$10.11	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Hallway	8760	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	4,520.2	$664.46	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Microfilm	2400	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.09	206.4	$30.34	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
5	2-Janitor	800	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.06	46.4	$6.82	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
4	2-Mens RR	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165.0	$24.26	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
6		5000	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	310.0	$45.57	1	2	mp - Sylvania Lamp FO28/841/SS	50	0.05	250	$36.75	$14.00	$14.00	0.01	60	$8.82	1.59
4	2-Womens RR	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165.0	$24.26	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
6		5000	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	310.0	$45.57	1	2	mp - Sylvania Lamp FO28/841/SS	50	0.05	250	$36.75	$14.00	$14.00	0.01	60	$8.82	1.59
1	2-Main Office	8760	10	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.86	7,533.6	$1,107.44	10	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Break Room	4800	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.26	1,238.4	$182.04	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Training	4800	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.69	3,302.4	$485.45	8	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

Investment Grade Lighting Audit

ECM ##: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING									SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
1	2-Patrol	8760	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	1,506.7	$221.49	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1,651.2	$242.73	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Report Writing	8760	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	1,506.7	$221.49	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Jail	8760	15		2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.29	11,300.4	$1,661.16	15	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
14	2-Cells	8760	5	1	60w Vapor Incandescent with vapor guard, enclosed	60	0.30	2,628.0	$386.32	5	1	13w CFL	13	0.07	569.4	$83.70	$20.00	$100.00	0.24	2058.6	$302.61	0.33
1	2-Office	4800	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	825.6	$121.36	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Storage	800	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	137.6	$20.23	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1,651.2	$242.73	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
4	2-Restroom	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165.0	$24.26	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Court Offices	2000	9	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.77	1,548.0	$227.56	9	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Office	2000	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	344.0	$50.57	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Office	2000	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	344.0	$50.57	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
7	2-Judge Office	2000	4	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	61	0.24	488.0	$71.74	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
7	2-Court Lobby	4800	8	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	61	0.49	2,342.4	$344.33	8	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

Investment Grade Lighting Audit

ECM ##: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING									SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
4	2-Mens RR	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165.0	$24.26	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
4	2-Womens RR	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165.0	$24.26	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
8	2-Lobby	4800	2	2	Recessed Down Light, (2) 13w CFL Lamp	26	0.05	249.6	$36.69	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Court Room	2000	15	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.29	2,580.0	$379.26	15	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
8		2000	6	2	Recessed Down Light, (2) 13w CFL Lamp	26	0.16	312.0	$45.86	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
9		2000	2	2	Wall Sconce, (2) 13w CFL Lamp	26	0.05	104.0	$15.29	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
10	Stairwell end	8760	3	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Wall MNt., Acylic Lens	32	0.10	841.0	$123.62	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Investigator Office	8760	16	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.38	12,053.8	$1,771.90	16	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Office	8760	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	3,013.4	$442.98	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
4	2-Bathroom	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165.0	$24.26	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
4	2-Bathroom	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165.0	$24.26	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Storage	800	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.09	68.8	$10.11	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1,651.2	$242.73	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1,651.2	$242.73	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

Investment Grade Lighting Audit

ECM ##: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING									SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
1	2-Office	4800	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	825.6	$121.36	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
2	2-Interview Room	4800	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	825.6	$121.36	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Closet	800	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	137.6	$20.23	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	2-Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1,651.2	$242.73	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
11	2-Garage	8760	9	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.52	4,572.7	$672.19	9	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
10	Stairwell	8760	3	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Wall MNt., Acylic Lens	32	0.10	841.0	$123.62	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
11	1-Basement Hall	8760	14	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.81	7,113.1	$1,045.63	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
2	1-Gym	8760	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.34	3,013.4	$442.98	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
2	1-Locker Room	8760	19	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	14,313.8	$2,104.13	19	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
2	1-Bathroom	4800	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	412.8	$60.68	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
4		4800	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	158.4	$23.28	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
12		4800	2	1	13w CFL	13	0.03	124.8	$18.35	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	1-Evidence	4800	14	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.20	5,779.2	$849.54	14	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	1-Basement Hall	8760	17	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.46	12,807.1	$1,882.65	17	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

Investment Grade Lighting Audit

ECM ##: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING									SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
1	1-Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1,651.2	$242.73	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
11	1-Mech Room	2000	6	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.35	696.0	$102.31	6	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	1-Computer Room	8760	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	3,013.4	$442.98	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	1-Sgt Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1,651.2	$242.73	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	1-Briefing Room	4800	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.69	3,302.4	$485.45	8	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	1-Traffic	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1,651.2	$242.73	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	1-Management	4800	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.95	4,540.8	$667.50	11	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
13	1-Management	4800	1	3	2x2, 3 Lamp, 17w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	51	0.05	244.8	$35.99	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	1-Manager Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1,651.2	$242.73	4	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1	1-Manager Office	4800	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	825.6	$121.36	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
2	2-Armory	4800	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.26	1,238.4	$182.04	3	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
11	2-Garage	8760	15	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.87	7,621.2	$1,120.32	15	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
2		8760	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	753.4	$110.74	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
1		8760	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	1,506.7	$221.49	2	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00

Investment Grade Lighting Audit

ECM ##: Lighting Upgrade - General

EXISTING LIGHTING										PROPOSED LIGHTING									SAVINGS			
CEG Type	Fixture Location	Yearly Usage	No. Fixts	No. Lamps	Fixture Type	Fixt Watts	Total kW	kWh/Yr Fixtures	Yearly $ Cost	No. Fixts	No. Lamps	Retro-Unit Description	Watts Used	Total kW	kWh/Yr Fixtures	Yearly $ Cost	Unit Cost (INSTALLED)	Total Cost	kW Savings	kWh/Yr Savings	Yearly $ Savings	Yearly Simple Payback
13	2-Main Lobby	8760	13	3	2x2, 3 Lamp, 17w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	51	0.66	5,807.9	$853.76	13	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
8		8760	7	2	Recessed Down Light, (2) 13w CFL Lamp	26	0.18	1,594.3	$234.37	7	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
4	2-Restroom	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165.0	$24.26	1	0	No Change	0	0.00	0	$0.00	$0.00	$0.00	0.00	0	$0.00	0.00
	Totals		430	222				186,761	$27,454	430	5			0.2	1,069	$157		$128	0.3	2,179	$320	0.40

CEG Job #: 9C11039
Project: Jackson Township LGEA
Address: 102 Jackson Drive
Jackson, NJ 08527
Building SF: 35,000

Jackson Justice Complex

KWH COST: $0.147

ECM ##: 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
1	3-Office	2400	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	825.6	$121.36	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	660.48	$97.09	$75.00	$75.00	0.07	165.12	$24.27	3.09
1	3-Conference Room	2400	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1238.4	$182.04	6	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.41	20%	990.72	$145.64	$160.00	$160.00	0.10	247.68	$36.41	4.39
1	3-Conference Room	2400	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	1238.4	$182.04	6	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.41	20%	990.72	$145.64	$160.00	$160.00	0.10	247.68	$36.41	4.39
4	3-Mens RR	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165	$24.26	1	0	No Change	33	0.03	0%	165	$24.26	FALSE	$0.00	0.00	0	$0.00	0.00
4	3-Women RR	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165	$24.26	1	0	No Change	33	0.03	0%	165	$24.26	FALSE	$0.00	0.00	0	$0.00	0.00
1	3-Chief Office	2400	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	825.6	$121.36	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	660.48	$97.09	$75.00	$75.00	0.07	165.12	$24.27	3.09
1	3-Chief Secretary	2400	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	825.6	$121.36	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	660.48	$97.09	$75.00	$75.00	0.07	165.12	$24.27	3.09
1	3-Office	2400	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	825.6	$121.36	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	660.48	$97.09	$75.00	$75.00	0.07	165.12	$24.27	3.09
1	3-Break Room	2400	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	412.8	$60.68	2	0	No Change	86	0.17	0%	412.8	$60.68	FALSE	$0.00	0.00	0	$0.00	0.00
1	3-Captain Office	2400	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	825.6	$121.36	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	660.48	$97.09	$75.00	$75.00	0.07	165.12	$24.27	3.09
1	3-Captain 2 Office	2400	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	825.6	$121.36	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	660.48	$97.09	$75.00	$75.00	0.07	165.12	$24.27	3.09
1	3-Hallway	2400	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.69	1651.2	$242.73	8	0	No Change	86	0.69	0%	1651.2	$242.73	FALSE	$0.00	0.00	0	$0.00	0.00
3	3to2 Stairwell	8760	6	2	3',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	62	0.37	3258.72	$479.03	6	0	No Change	62	0.37	0%	3258.72	$479.03	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Hallway	8760	17	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.46	12807.12	$1,882.65	17	0	No Change	86	1.46	0%	12807.12	$1,882.65	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Office	0	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	0	$0.00	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	0	$0.00	$75.00	$75.00	0.07	0	$0.00	0.00

ECM ##: 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
1	2-Records	2400	14	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.20	2889.6	$424.77	14	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.96	20%	2311.68	$339.82	$75.00	$75.00	0.24	577.92	$84.95	0.88
1	2-Storage	800	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.09	68.8	$10.11	1	0	No Change	86	0.09	0%	68.8	$10.11	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Hallway	8760	6	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.52	4520.16	$664.46	6	0	No Change	86	0.52	0%	4520.16	$664.46	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Microfilm	2400	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.09	206.4	$30.34	1	0	No Change	86	0.09	0%	206.4	$30.34	FALSE	$0.00	0.00	0	$0.00	0.00
5	2-Janitor	800	1	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Surface Mnt., No Lens	58	0.06	46.4	$6.82	1	0	No Change	58	0.06	0%	46.4	$6.82	FALSE	$0.00	0.00	0	$0.00	0.00
4	2-Mens RR	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165	$24.26	1	0	No Change	33	0.03	0%	165	$24.26	FALSE	$0.00	0.00	0	$0.00	0.00
6		5000	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	310	$45.57	1	0	No Change	62	0.06	0%	310	$45.57	FALSE	$0.00	0.00	0	$0.00	0.00
4	2-Womens RR	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165	$24.26	1	0	No Change	33	0.03	0%	165	$24.26	FALSE	$0.00	0.00	0	$0.00	0.00
6		5000	1	2	2x4, 2 Lamp, 32w 700 Series T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	62	0.06	310	$45.57	1	0	No Change	62	0.06	0%	310	$45.57	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Main Office	8760	10	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.86	7533.6	$1,107.44	10	0	No Change	86	0.86	0%	7533.6	$1,107.44	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Break Room	4800	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.26	1238.4	$182.04	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.21	20%	990.72	$145.64	$75.00	$75.00	0.05	247.68	$36.41	2.06
1	2-Training	4800	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.69	3302.4	$485.45	8	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.55	20%	2641.92	$388.36	$160.00	$160.00	0.14	660.48	$97.09	1.65
1	2-Patrol	8760	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	1506.72	$221.49	2	0	No Change	86	0.17	0%	1506.72	$221.49	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1651.2	$242.73	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	1320.96	$194.18	$75.00	$75.00	0.07	330.24	$48.55	1.54
1	2-Report Writing	8760	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	1506.72	$221.49	2	0	No Change	86	0.17	0%	1506.72	$221.49	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Jail	8760	15	0	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.29	11300.4	$1,661.16	15	0	No Change	86	1.29	0%	11300.4	$1,661.16	FALSE	$0.00	0.00	0	$0.00	0.00

ECM ##: 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
14	2-Cells	8760	5	1	60w Vapor Incandescent with vapor guard, enclosed	60	0.30	2628	$386.32	5	0	No Change	60	0.30	0%	2628	$386.32	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Office	4800	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	825.6	$121.36	2	0	No Change	86	0.17	0%	825.6	$121.36	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Storage	800	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	137.6	$20.23	2	0	No Change	86	0.17	0%	137.6	$20.23	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1651.2	$242.73	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	1320.96	$194.18	$75.00	$75.00	0.07	330.24	$48.55	1.54
4	2-Restroom	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165	$24.26	1	0	No Change	33	0.03	0%	165	$24.26	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Court Offices	2000	9	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.77	1548	$227.56	9	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.62	20%	1238.4	$182.04	$75.00	$75.00	0.15	309.6	$45.51	1.65
1	2-Office	2000	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	344	$50.57	2	0	No Change	86	0.17	0%	344	$50.57	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Office	2000	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	344	$50.57	2	0	No Change	86	0.17	0%	344	$50.57	FALSE	$0.00	0.00	0	$0.00	0.00
7	2-Judge Office	2000	4	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	61	0.24	488	$71.74	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	61	0.20	20%	390.4	$57.39	$75.00	$75.00	0.05	97.6	$14.35	5.23
7	2-Court Lobby	4800	8	2	2x2, 2 Lamp, 31w T8 Ulamp, Elect. Ballast, Recessed Mnt., Parabolic Lens	61	0.49	2342.4	$344.33	8	0	No Change	61	0.49	0%	2342.4	$344.33	FALSE	$0.00	0.00	0	$0.00	0.00
4	2-Mens RR	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165	$24.26	1	0	No Change	33	0.03	0%	165	$24.26	FALSE	$0.00	0.00	0	$0.00	0.00
4	2-Womens RR	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165	$24.26	1	0	No Change	33	0.03	0%	165	$24.26	FALSE	$0.00	0.00	0	$0.00	0.00
8	2-Lobby	4800	2	2	Recessed Down Light, (2) 13w CFL Lamp	26	0.05	249.6	$36.69	2	0	No Change	26	0.05	0%	249.6	$36.69	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Court Room	2000	15	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.29	2580	$379.26	15	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack - Remote Mnt.	86	1.03	20%	2064	$303.41	$225.00	$225.00	0.26	516	$75.85	2.97
8		2000	6	2	Recessed Down Light, (2) 13w CFL Lamp	26	0.16	312	$45.86	6	0	No Change	26	0.16	0%	312	$45.86	FALSE	$0.00	0.00	0	$0.00	0.00
9		2000	2	2	Wall Sconce, (2) 13w CFL Lamp	26	0.05	104	$15.29	2	0	No Change	26	0.05	0%	104	$15.29	FALSE	$0.00	0.00	0	$0.00	0.00

ECM ##: 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
10	Stairwell end	8760	3	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Wall MNt., Acylic Lens	32	0.10	840.96	$123.62	3	0	No Change	32	0.10	0%	840.96	$123.62	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Investigator Office	8760	16	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.38	12053.76	$1,771.90	16	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	1.10	20%	9643.008	$1,417.52	$160.00	$160.00	0.28	2410.752	$354.38	0.45
1	2-Office	8760	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	3013.44	$442.98	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	2410.752	$354.38	$75.00	$75.00	0.07	602.688	$88.60	0.85
4	2-Bathroom	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165	$24.26	1	0	No Change	33	0.03	0%	165	$24.26	FALSE	$0.00	0.00	0	$0.00	0.00
4	2-Bathroom	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165	$24.26	1	0	No Change	33	0.03	0%	165	$24.26	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Storage	800	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.09	68.8	$10.11	1	0	No Change	86	0.09	0%	68.8	$10.11	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1651.2	$242.73	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	1320.96	$194.18	$75.00	$75.00	0.07	330.24	$48.55	1.54
1	2-Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1651.2	$242.73	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	1320.96	$194.18	$75.00	$75.00	0.07	330.24	$48.55	1.54
1	2-Office	4800	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	825.6	$121.36	2	0	No Change	86	0.17	0%	825.6	$121.36	FALSE	$0.00	0.00	0	$0.00	0.00
2	2-Interview Room	4800	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.17	825.6	$121.36	2	0	No Change	86	0.17	0%	825.6	$121.36	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Closet	800	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	137.6	$20.23	2	0	No Change	86	0.17	0%	137.6	$20.23	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1651.2	$242.73	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	1320.96	$194.18	$75.00	$75.00	0.07	330.24	$48.55	1.54
11	2-Garage	8760	9	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.52	4572.72	$672.19	9	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.42	20%	3658.176	$537.75	$75.00	$75.00	0.10	914.544	$134.44	0.56
10	Stairwell	8760	3	1	1x4, 1 Lamp, 32w T8, Elect. Ballast, Wall MNt., Acylic Lens	32	0.10	840.96	$123.62	3	0	No Change	32	0.10	0%	840.96	$123.62	FALSE	$0.00	0.00	0	$0.00	0.00
11	1-Basement Hall	8760	14	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.81	7113.12	$1,045.63	14	0	No Change	58	0.81	0%	7113.12	$1,045.63	FALSE	$0.00	0.00	0	$0.00	0.00
2	1-Gym	8760	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.34	3013.44	$442.98	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	2410.752	$354.38	$75.00	$75.00	0.07	602.688	$88.60	0.85

ECM ##: 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
2	1-Locker Room	8760	19	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	1.63	14313.84	$2,104.13	19	1	Dual Tech. Occupancy Sensor w/2 Pole Powerpack - Remote Mnt.	86	1.31	20%	11451.072	$1,683.31	$225.00	$225.00	0.33	2862.768	$420.83	0.53
2		4800	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	412.8	$60.68	1	0	No Change	86	0.09	0%	412.8	$60.68	FALSE	$0.00	0.00	0	$0.00	0.00
4	1-Bathroom	4800	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	158.4	$23.28	1	0	No Change	33	0.03	0%	158.4	$23.28	FALSE	$0.00	0.00	0	$0.00	0.00
12		4800	2	1	13w CFL	13	0.03	124.8	$18.35	2	0	No Change	13	0.03	0%	124.8	$18.35	FALSE	$0.00	0.00	0	$0.00	0.00
1	1-Evidence	4800	14	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.20	5779.2	$849.54	14	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.96	20%	4623.36	$679.63	$75.00	$75.00	0.24	1155.84	$169.91	0.44
1	1-Basement Hall	8760	17	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	1.46	12807.12	$1,882.65	17	0	No Change	86	1.46	0%	12807.12	$1,882.65	FALSE	$0.00	0.00	0	$0.00	0.00
1	1-Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1651.2	$242.73	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	1320.96	$194.18	$75.00	$75.00	0.07	330.24	$48.55	1.54
11	1-Mech Room	2000	6	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.35	696	$102.31	6	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.28	20%	556.8	$81.85	$75.00	$75.00	0.07	139.2	$20.46	3.67
1	1-Computer Room	8760	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	3013.44	$442.98	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	2410.752	$354.38	$75.00	$75.00	0.07	602.688	$88.60	0.85
1	1-Sgt Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1651.2	$242.73	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	1320.96	$194.18	$75.00	$75.00	0.07	330.24	$48.55	1.54
1	1-Briefing Room	4800	8	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.69	3302.4	$485.45	8	1	Dual Technology Occupancy Sensor - Remote Mnt.	86	0.55	20%	2641.92	$388.36	$160.00	$160.00	0.14	660.48	$97.09	1.65
1	1-Traffic	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1651.2	$242.73	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	1320.96	$194.18	$75.00	$75.00	0.07	330.24	$48.55	1.54
1	1-Management	4800	11	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.95	4540.8	$667.50	11	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.76	20%	3632.64	$534.00	$75.00	$75.00	0.19	908.16	$133.50	0.56
13	1-Management	4800	1	3	2x2, 3 Lamp, 17w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	51	0.05	244.8	$35.99	1	0	No Change	51	0.05	0%	244.8	$35.99	FALSE	$0.00	0.00	0	$0.00	0.00
1	1-Manager Office	4800	4	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.34	1651.2	$242.73	4	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.28	20%	1320.96	$194.18	$75.00	$75.00	0.07	330.24	$48.55	1.54
1	1-Manager Office	4800	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	825.6	$121.36	2	0	No Change	86	0.17	0%	825.6	$121.36	FALSE	$0.00	0.00	0	$0.00	0.00

ECM ##: 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
2	2-Armory	4800	3	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.26	1238.4	$182.04	3	1	Dual Technology Occupancy Sensor - Switch Mnt.	86	0.21	20%	990.72	$145.64	$75.00	$75.00	0.05	247.68	$36.41	2.06
11	2-Garage	8760	15	2	1x4, 2 Lamp, 32w T8, Elect. Ballast, Pendant Mnt., No Lens	58	0.87	7621.2	$1,120.32	15	1	Dual Technology Occupancy Sensor - Switch Mnt.	58	0.70	20%	6096.96	$896.25	$75.00	$75.00	0.17	1524.24	$224.06	0.33
2		8760	1	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	86	0.09	753.36	$110.74	1	0	No Change	86	0.09	0%	753.36	$110.74	FALSE	$0.00	0.00	0	$0.00	0.00
1	2-Main Lobby	8760	2	3	2x4, 3 Lamp, 32w T8, Elect. Ballast, Recessed Mnt., Parabolic Lens	86	0.17	1506.72	$221.49	2	0	No Change	86	0.17	0%	1506.72	$221.49	FALSE	$0.00	0.00	0	$0.00	0.00
13		8760	13	3	2x2, 3 Lamp, 17w T8, Elect. Ballast, Recessed Mnt., Prismatic Lens	51	0.66	5807.88	$853.76	13	0	No Change	51	0.66	0%	5807.88	$853.76	FALSE	$0.00	0.00	0	$0.00	0.00
8		8760	7	2	Recessed Down Light, (2) 13w CFL Lamp	26	0.18	1594.32	$234.37	7	0	No Change	26	0.18	0%	1594.32	$234.37	FALSE	$0.00	0.00	0	$0.00	0.00
4	2-Restroom	5000	1	2	2',2 Lamp, 32w T8,Elec. Ballast, Wall Mnt. Opal Acrylic Uplight	33	0.03	165	$24.26	1	0	No Change	33	0.03	0%	165	$24.26	FALSE	$0.00	0.00	0	$0.00	0.00
	Totals		430	222			32.5	186,760.9	$27,454	430	36			28.6		167,261.7	$24,587.47		$3,425	3.97	19,499	$2,866	1.19
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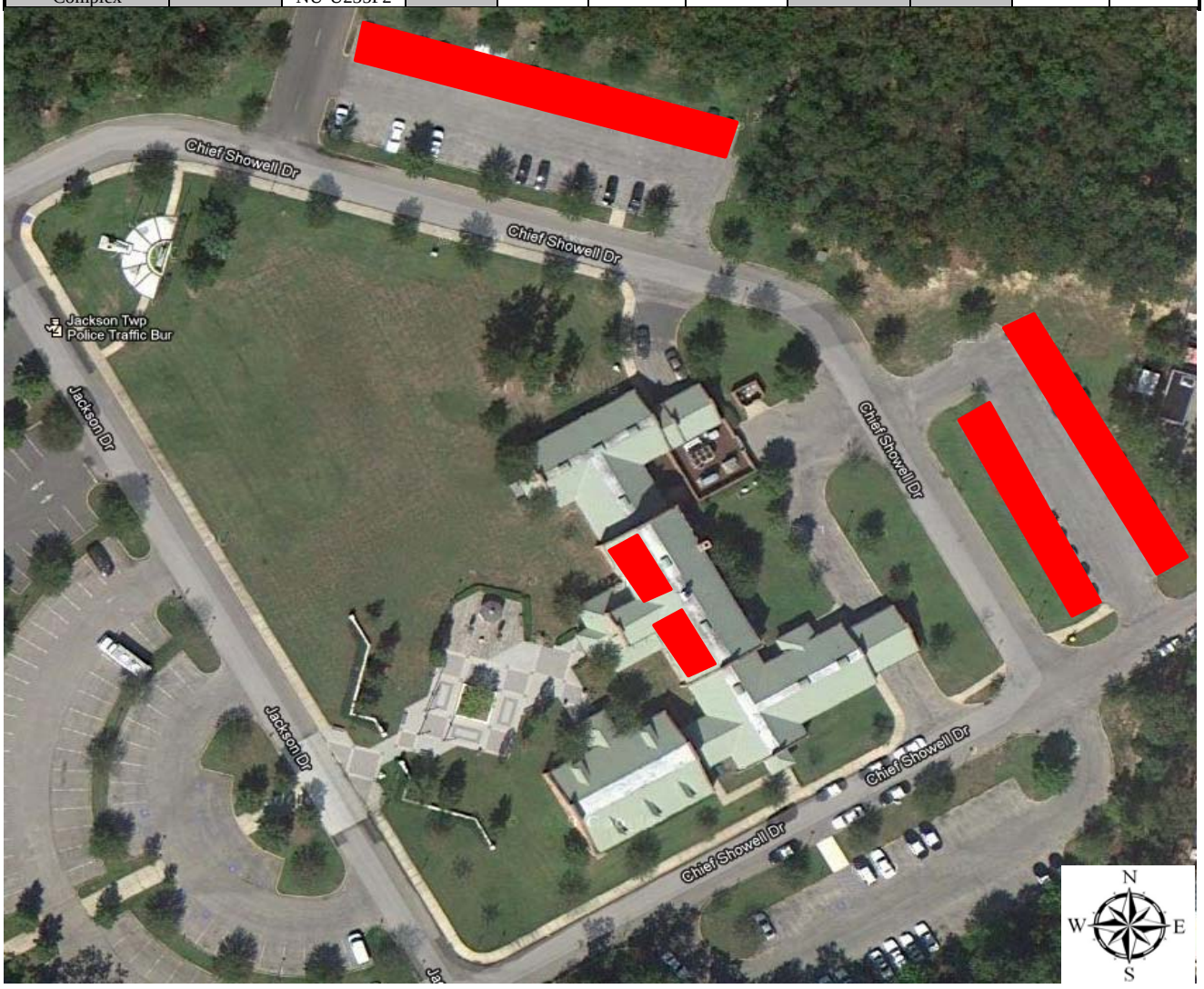
APPENDIX F

Location Description	Area (Sq FT)	Panel	Qty	Panel Sq Ft	Panel Total Sq Ft	Total KW_{DC}	Total Annual kWh	Total KW_{AC}	Panel Weight (41.9 lbs)	W/SQFT
Jackson Justice Complex	3350	SHARP NU-U235F2	451	17.5	7,911	105.99	123,884	86	18,897	13.40



.= Proposed PV Layout

Notes:

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

Project Name: LGEA Solar PV Project - Jackson Township Justice Complex
Location: 102 Jackson Drive, Jackson, NJ
Description: Photovoltaic System 100% Financing - 15 year

Simple Payback Analysis

	Photovoltaic System 100% Financing - 15 year
Total Construction Cost	$699,785
Annual kWh Production	123,884
Annual Energy Cost Reduction	$18,211
Average Annual SREC Revenue	47770.31414
First Cost Premium	**$699,785**
Simple Payback:	**10.61** Years

Life Cycle Cost Analysis

Analysis Period (years):	15	Financing %:	100%
Financing Term (mths):	180	Maintenance Escalation Rate:	3.0%
Average Energy Cost ($/kWh)	**$0.147**	Energy Cost Escalation Rate:	3.0%
Financing Rate:	6.00%	Average SREC Value ($/kWh)	$0.386

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	$0	0	0	0	$0	0	0	0	0
1	$0	123,884	$18,211	$0	$68,136	$41,180	$29,683	$15,485	$15,485
2	$0	123,265	$18,757	$0	$67,796	$39,349	$31,513	$15,691	$31,176
3	$0	122,648	$19,320	$0	$61,324	$37,405	$33,457	$9,782	$40,957
4	$0	122,035	$19,900	$0	$54,916	$35,342	$35,521	$3,953	$44,911
5	$0	121,425	$20,497	$1,251	$54,641	$33,151	$37,711	$3,025	$47,935
6	$0	120,818	$21,111	$1,244	$54,368	$30,825	$40,037	$3,373	$51,308
7	$0	120,214	$21,745	$1,238	$48,085	$28,355	$42,507	($2,270)	$49,038
8	$0	119,613	$22,397	$1,232	$47,845	$25,734	$45,128	($1,852)	$47,186
9	$0	119,014	$23,069	$1,226	$41,655	$22,950	$47,912	($7,364)	$39,822
10	$0	118,419	$23,761	$1,220	$41,447	$19,995	$50,867	($6,874)	$32,948
11	$0	117,827	$24,474	$1,214	$35,348	$16,858	$54,004	($12,254)	$20,695
12	$0	117,238	$25,208	$1,208	$35,171	$13,527	$57,335	($11,690)	$9,005
13	$0	116,652	$25,964	$1,202	$29,163	$9,991	$60,872	($16,936)	($7,932)
14	$0	116,069	$26,743	$1,196	$29,017	$6,236	$64,626	($16,297)	($24,229)
15	$0	115,488	$27,546	$1,190	$23,098	$2,250	$68,612	($21,408)	($45,637)
Totals:		1,794,609	$338,704	$13,419	$692,011	$363,148	$699,785	($45,637)	$352,669

Net Present Value (NPV)	**($2,353)**
Internal Rate of Return (IRR)	**6.6%**