Local Government Energy Audit:
Energy Audit Report

Jewish Community Center of

S, H & W Counties, Inc.

Early Childhood Building

775 Talamini Rd

Bridgewater, NJ 08807

09/05/2017

Report by:

TRC Energy Services

Disclaimer

The intent of this energy analysis report is to identify energy savings opportunities associated with recommended upgrades to the facility's systems at this site. Approximate savings are included in this report to make decisions about reducing energy use at the facility. This report is not intended to serve as a detailed engineering design document. Detailed design efforts are required in order to implement several of the improvements evaluated as part of this energy analysis.

The energy conservation measures and estimates of energy consumption contained in this report have been reviewed for technical accuracy. However, all estimates contained herein of energy consumption at the site are not guaranteed, because energy consumption ultimately depends on behavioral factors, the weather, and many other uncontrollable variables. The energy assessor and New Jersey Board of Public Utilities (NJBPU) shall in no event be liable should the actual energy consumption vary from the estimated consumption shown herein.

Estimated installation costs are based on a variety of sources, including our own experience at similar facilities, our own pricing research using local contractors and vendors, and cost estimating handbooks such as those provided by RS Means. The cost estimates represent our best judgment for the proposed action. The Owner is encouraged to independently confirm these cost estimates and to obtain multiple estimates when considering measure installations. Since actual installed costs can vary widely for a particular installation, and for conditions which cannot be known prior to in-depth investigation and design, the energy assessor does not guarantee installed cost estimates and shall in no event be liable should actual installed costs vary from the estimated costs herein.

New Jersey's Clean Energy Program (NJCEP) incentive values provided in this report are estimates and are based on program information available at the time this report is written. The NJBPU reserves the right to extend, modify, or terminate programs without prior or further notice, including incentive levels and eligibility requirements. The Owner should review available program incentives and requirements prior to selecting and/or installing any recommended measures.

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1 Executive Summary

The New Jersey Board of Public Utilities (NJBPU) has sponsored this Local Government Energy Audit (LGEA) Report for Abundant Life Original Glorious Church.

The goal of an LGEA report is to provide you with information on how your facility uses energy, identify energy conservation measures (ECMs) that can reduce your energy use, and provide information and assistance to help facilities implement ECMs. The LGEA report also contains valuable information on financial incentives from New Jersey's Clean Energy Program (NJCEP) for implementing ECMs.

TRC Energy Services (TRC) conducted this study as part of a comprehensive effort to assist New Jersey nonprofits in controlling energy costs and protecting our environment by offering a wide range of energy management options and advice.

1.1 Facility Summary

The Jewish Community Center is an agency of the Jewish Federation of Somerset, Hunterdon and Warren Counties, serving their residents with fitness, recreation, social, cultural and educational programming for the entire community. The Early Childhood Building is a two-story facility was built in 2008. It houses classrooms (infant to K), offices, and summer camps. The second floor is under construction. The base of the building consists of poured concrete foundation supported on continuous footings. The building is constructed of brick wall, and structural steel. The upper portions of the exterior walls are accented with vinyl siding. The building's roof is flat and covered with a white membrane that is in good condition. The building has double and single pane windows that are in good condition and show no sign of outside air infiltration. Exterior doors are constructed of aluminum and are in good condition except that the door seals have worn out which increases the level of outside air infiltration. Interior lighting mostly consists of a four-foot fluorescent fixtures with T8 lamps. HVAC equipment includes four (4) 7.5-ton gas roof top units. Cooling and heating system are controlled by programmable thermostats located in each of the four zones. The bathrooms are ventilated by mechanical exhaust fans.

A thorough description of the facility and our observations are located in Section 2.

1.2 Your Cost Reduction Opportunities

Energy Conservation Measures

TRC evaluated six energy conservation measures (ECMs) with potential to reduce annual energy costs by roughly \$5.011 and annual greenhouse gas emissions by 40,133 lbs CO_2e. The measures would pay for themselves in roughly 9.5 years. The breakdown of existing and potential utility costs is illustrated in Figure 1 andFigure 2. These projects represent an opportunity to reduce the building's annual energy use by 11%.

Figure 1 – Previous 12 Month Utility Costs

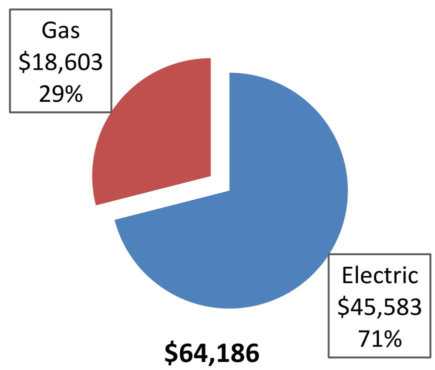
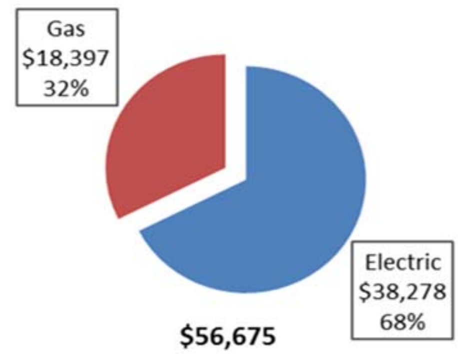


Figure 2 – Potential Post-Implementation Costs



A detailed description of the facility's existing energy use is located in Section 3 "Site Energy Use and Costs".

The evaluated measures have been listed and grouped into major categories as shown in Figure 3. Brief descriptions of the categories are below with descriptions of the individual opportunities located in Section 4, "Energy Conservation Measures."

Figure 3 – Summary of Energy Reduction Opportunities

Energy Conservation Measure		Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	*Annual Natural Gas Savings (MMBtu)*	*Annual N/A Savings (MMBtu)*	*Annual N/A Savings (MMBtu)*	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)*	Estimated Net Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades			22,878	7.3	0.0	0.0	0.0	0.0	$3,007.60	$38,392.16	$3,120.00	$35,272.16	11.73	23,038
ECM 1	Install LED Fixtures	Yes	6,735	3.3	0.0	0.0	0.0	0.0	$885.41	$30,394.50	$1,715.00	$28,679.50	32.39	6,782
ECM 2	Retrofit Fixtures with LED Lamps	Yes	15,826	4.0	0.0	0.0	0.0	0.0	$2,080.54	$7,567.43	$1,405.00	$6,162.43	2.96	15,937
ECM 3	Install LED Exit Signs	Yes	317	0.0	0.0	0.0	0.0	0.0	$41.64	$430.22	$0.00	$430.22	10.33	319
Lighting Control Measures			3,296	0.8	0.0	0.0	0.0	0.0	$433.29	$1,624.00	$280.00	$1,344.00	3.10	3,319
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	3,296	0.8	0.0	0.0	0.0	0.0	$433.29	$1,624.00	$280.00	$1,344.00	3.10	3,319
Variable Frequency Drive (VFD) Measures			10,375	3.6	0.0	0.0	0.0	0.0	$1,363.97	$10,915.41	$0.00	$10,915.41	8.00	10,448
ECM 5	Install VFD on Variable Air Volume (VAV) HVAC	Yes	10,375	3.6	0.0	0.0	0.0	0.0	$1,363.97	$10,915.41	$0.00	$10,915.41	8.00	10,448
Domestic Water Heating Upgrade			0	0.0	28.4	0.0	0.0	28.4	$206.33	$28.68	$0.00	$28.68	0.14	3,328
ECM 6	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	28.4	0.0	0.0	28.4	$206.33	$28.68	$0.00	$28.68	0.14	3,328
TOTALS			36,549	11.7	28.4	0.0	0.0	28.4	$5,011.20	$50,960.25	$3,400.00	$47,560.25	9.49	40,133

* - All incentives presented in this table are based on NJ Smart Start Building equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

Lighting Upgrades generally involve the replacement of existing lighting components such as lamps and ballasts (or the entire fixture) with higher efficiency lighting components. These measure save energy by reducing the power used by the lighting components due to improved electrical efficiency.

Lighting Controls measures generally involve the installation of automated controls to turn off lights or reduce light output when conditions allow. Automated control reduces reliance on occupant behavior for adjusting lights. These measures save energy by reducing the amount of time lights are on.

Variable Frequency Drives measures generally involve controlling the speed of a motor to achieve a flow or temperature rather than using a valve, damper, or no means at all. These measures save energy by slowing a motor which is an extremely efficient method of control.

Domestic Water Heating upgrade measures generally involve replacing old inefficient domestic water heating systems with modern energy efficient systems. New domestic water heating systems can provide equivalent or greater capacity as older systems, but use less energy. These measures save energy by reducing the fuel used by the domestic water heating systems due to improved efficiency or the removal of standby losses.

Energy Efficient Practices

Energy performance can also be improved by employing certain behavioral and operational adjustments as well as performing routine maintenance on building systems. Through these practices equipment lifetime can be extended; occupant comfort, health and safety can be improved; and annual energy, operation, and maintenance costs can be reduced. TRC identified 14 opportunities including:

- Reduce Air Leakage
- Close Doors and Windows
- Perform Proper Lighting Maintenance
- Develop a Lighting Maintenance Schedule
- Ensure Lighting Controls Are Operating Properly
- Use Fans to Reduce Cooling Load
- Practice Proper Use of Thermostat Schedules and Temperature Resets
- Clean Evaporator/Condenser Coils on AC Systems
- Clean and/or Replace HVAC Filters
- Check for and Seal Duct Leakage
- Perform Proper Boiler Maintenance
- Perform Proper Water Heater Maintenance
- Install Plug Load Controls
- Water Conservation

For details on these Energy Efficient Practices, please refer to Section 5.

Self-Generation Measures

TRC Energy Services evaluated the potential for installing self-generation sources for the Early Childhood School. Based on the configuration of the site and its loads there is a low potential for installing any PV and combined heat and power self-generation measures. For details on our evaluation and the self-generation potential, please refer to Section 6.

1.3 Implementation Planning

To realize the energy savings from the ECMs listed in this report, the equipment changes outlined for each ECM need to be selected and installed through project implementation. One of the first considerations is if there is capital available for project implementation. Another consideration is whether to pursue individual ECMs, a group of ECMs, or a comprehensive approach wherein all ECMs are pursued, potentially in conjunction with other facility projects or improvements.

Rebates, incentives, and financing are available from the NJBPU, NJCEP, as well as some of the state's investor-owned utilities, to help reduce the costs associated with the implementation of energy efficiency projects. Prior to implementing any project, please review the appropriate incentive program guidelines before proceeding. This is important because in most cases you will need to submit an application for the incentives before purchasing materials and beginning installation.

The ECMs outlined in this report may qualify under the following program(s):

- SmartStart
- Direct Install (DI)

For facilities with capital available for implementation of selected individual measures or phasing implementation of selected measures over multiple years, incentives are available through the SmartStart program. To participate in this program you may use internal resources, or an outside firm or contractor, to design the ECM(s), select the equipment and apply for the incentive(s). Program pre-approval is required for some SmartStart incentives, so only after receiving approval may the ECM(s) be installed. The incentive values listed above in Figure 3 represent the SmartStart program and are further explained in Section 7, as well as the other programs as mentioned below.

This facility also qualifies for the Direct Install program which, through an authorized network of participating contractors, can assist with the implementation of a group of measures versus installing individual measures or phasing implementation. This program is designed to be turnkey and will provide an incentive up to 70% of the cost of the project identified by the designated contractor.

For facilities without capital available to implement ECMs, project financing may be available through the Energy Savings Improvement Program (ESIP). Supported directly by the NJBPU, ESIP provides government agencies with external project development, design, and implementation services as well as financing for implementing ECMs. This LGEA report is the first step for participating in ESIP and should help you determine next steps. Refer to Section **Error! Reference source not found.** for additional information on the ESIP Program.

The Demand Response Energy Aggregator is a program (non-NJCEP) designed to reduce consumer electric load when wholesale electricity prices are high or when the reliability of the electric grid is threatened due to peak demand. Demand Response (DR) service providers (aka Curtailment Service Providers) are registered with PJM, the independent system operator (ISO) for mid-Atlantic state region that is charged with maintaining electric grid reliability locally. By enabling grid operators to call upon Curtailment Service Providers and energy consumers to reduce electric usage during times of peak demand, the grid is made more reliable and overall transmission costs are reduced for all ratepayers. Curtailment Service Providers provide regular payments to medium and large consumers of electric power for their participation in DR programs. Program participation is voluntary and participants will receive payments whether or not their facility is called upon to curtail their load. Refer to Section **Error! Reference source not found.** for additional information on this program.

Additional descriptions of all relevant incentive programs are located in Section 7. You may also check the following website for further information on available rebates and incentives:

www.njcleanenergy.com/ci

To ensure projects are implemented such that maximum savings and incentives are achieved, bids and specifications should be reviewed by your procurement personnel and/or consultant(s) to ensure that selected equipment coincides with LGEA recommendations, as well as applicable incentive program guidelines and requirements.

2 Facility Information and Existing Conditions

2.1 Project Contacts

Figure 4 – Project Contacts

Name	Role	E-Mail	Phone #
Customer			
Laurie Friedman	Executif Director	lfriedman@ssbjcc.org	908-725-6994
Designated Representative			
Laurie Friedman	Executif Director	lfriedman@ssbjcc.org	908-725-6994
TRC Energy Services			
Moussa Traore	Auditor	mtraore@trcsolutions.com	732855-2879

2.2 General Site Information

TRC performed an energy audit at the Main Building on August 25, 2016. The TRC auditor met with Laurie Friedman to review the facility operations and focus the investigation on specific energy-using systems.

The Jewish Community Center is an agency of the Jewish Federation of Somerset, Hunterdon and Warren Counties, serving their residents with fitness, recreation, social, cultural and educational programming for the entire community.

The Early Childhood Building is a 20,000 square foot building built in 2008. It houses classrooms (infant to K), offices, and summer camps. The second floor is under construction. We also noticed during the field audit a renovation in some classrooms and bathrooms.

2.3 Building Occupancy

The building is open Monday through Friday. The entire facility is used year round by the community and camps are run throughout the summer. The typical schedule is presented in the table below.

Figure 5 - Building Schedule

Building Occupancy Schedule		
Building Name	Weekday/Weekend	Operating Schedule
Early Childhood Building	Weekday	7:30 AM - 6:30 PM
Early Childhood Building	Weekend	N/A

2.4 Building Envelope

The base of the building consists of poured concrete foundation supported on continuous footings. The building is constructed of brick wall, and structural steel. Upper portions of the exterior walls are accented with vinyl siding. The building has a flat roof covered with white membrane surrounded by asphalt shingles saddle roofs that are in good condition.

The building has double and single pane windows that are in good condition and show no observable outside air infiltration. Exterior doors are constructed of aluminum and are in good condition, with the exception of worn door seals that increase the level of outside air infiltration.

2.5 On-site Generation

There is no on-site electric generation capacity.

2.6 Energy-Using Systems

Please refer to Appendix A: Equipment Inventory & Recommendations for an inventory of your equipment.

Lighting System

Interior lighting is provided predominately by linear fluorescent, 32-watt T8 lamps with electronic and magnetic ballasts as well as compact fluorescent lamps (CFL). Most spaces use 2-lamp or 3-lamp, 2-foot wide by 4-foot long troffers with diffusers. Lighting control is provided by manual light switches. Lobbies and main lobby areas do not contain any occupancy sensors and are on 24 hours per day throughout the year.

Exterior lighting consists of 150-watt, wall mounted metal halide fixtures, 100-watt recessed metal halide fixtures and more recently, 40-watt wall-mounted LED fixture. Parking lot pole lighting contains 400-watt metal halide and LED fixtures. Exterior lighting is controlled by photocell.

Air Conditioning (DX)

Four 7.5-ton gas Lennox packaged roof top units are used to condition the building:

- RTU1 - Laurie foundation classroom, room 7, office
- RTU2 - Steger classroom, room 8
- RTU3 - Bunevich classroom, room 11, hallway
- RTU4 - Zweiz family classroom, room12.

The units are controlled by individual Honeywell thermostats located within each of the four in zones. Temperature setpoints are approximately 72°F but adjustable by tenants. The units are in good condition.

Building Energy Management System

No building management system was seen during the field audit.

Domestic Hot Water

Domestic hot water system consists of one Bradford White, gas-fired non-condensing hot water heater with an input rating of 125 kBtu/hr and a nominal efficiency of 86%. The water heater has 75 gallon storage tank. Hot water in the facility is used in the restrooms. The water heater is in good working condition.

Food Service & Laundry Equipment

There are no kitchen or laundry rooms.

Plug Load & Vending Machines

There are 7 computer work stations throughout the facility, roughly 99% of which are desktop units with LCD monitors. There is no centralized PC power management software installed.

There are no refrigerated beverage and non-refrigerated vending machines

2.7 Water-Using Systems

There are 7 restrooms at this facility. Faucets are rated at 3.5 gpm, toilets are rated at 2.5 gallons per flush and urinals are rated at 2 gallons per flush.

3 Site Energy Use and Costs

Utility data for electricity and natural gas was analyzed to identify opportunities for savings and determine the annual energy performance metrics for the building in energy cost/ft^2 and energy use/ft^2. These energy use indices are indicative of the relative energy effectiveness of this building. There are a number of factors that could cause the energy use of this building to vary from the “typical” energy use forsimilar facilities such as local climate conditions, daily occupancy hours of the facility, seasonal fluctuations in occupancy, daily operating hours of energy use systems, and occupant behavior. Refer to Section 0 for additional information.

3.1 Total Cost of Energy

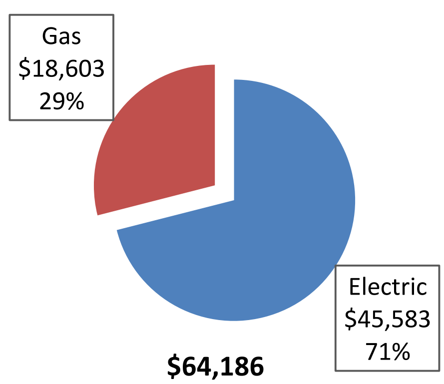
The following energy consumption and cost data is based on the last 12 month period of utility usage data that was provided for each utility. The annual consumption and costs were developed from this information.

Figure 6 - Utility Summary

Utility Summary for Early Chilghood Building		
Fuel	Usage	Cost
Electricity	326,086 kWh	$45,583
Natural Gas	25,629 Therms	$18,603
Total		$64,186

The current utility cost for this site is $64,186 as shown in the chart below.

Figure 7 - Energy Cost Breakdown



3.2 Electricity Usage

Electricity is provided by PSE&G. The average electric cost (combined for commodity, transmission and distribution) for the past 12 months is $0.131/kWh, which is the blended rate used throughout the analyses in this report. Summer consumption rises due to use of cooling units. Base electrical load for the building consists primarily of lighting, cooling and heating, domestic water heating and electronic accounting for the remainder. The monthly electricity consumption and peak demand is represented graphically in the chart below.

Figure 8 - Electric Usage & Demand

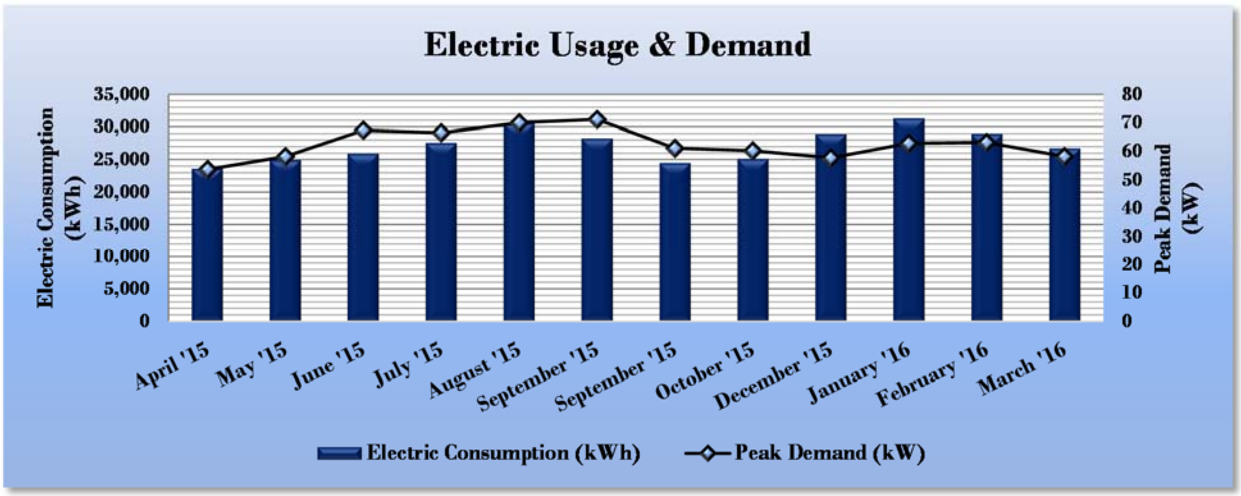


Figure 9 - Electric Usage & Demand

Electric Billing Data for Early Chilghood Building						
Period Ending	Days in Period	Electric Usage (kWh)	Demand (kW)	Demand Cost	Total Electric Cost	TRC Estimated Usage?
4/17/15	30	23,600	54	$194	$3,388	Yes
5/18/15	31	24,943	58	$210	$3,492	Yes
6/17/15	30	25,914	67	$243	$4,266	Yes
7/17/15	30	27,543	67	$240	$4,489	Yes
8/17/15	31	30,486	70	$252	$4,725	Yes
9/16/15	30	28,229	71	$257	$4,372	Yes
10/15/15	29	24,457	61	$222	$3,249	Yes
11/13/15	29	25,086	60	$219	$3,298	Yes
12/16/15	33	28,886	58	$209	$3,554	Yes
1/19/16	34	31,286	63	$228	$3,766	Yes
2/17/16	29	28,943	63	$229	$3,569	Yes
3/17/16	29	26,714	58	$213	$3,415	Yes
Totals	365	326,086	71.14285403	$2,715	$45,583	12
Annual	365	326,086	71.14285403	$2,715	$45,583	

3.3 Natural Gas Usage

Natural gas is provided by PSE&G. The average gas cost for the past 12 months is $0.726/therm, which is the blended rate used throughout the analyses in this report. The monthly gas consumption is represented graphically in the chart below.

Figure 10 - Natural Gas Usage

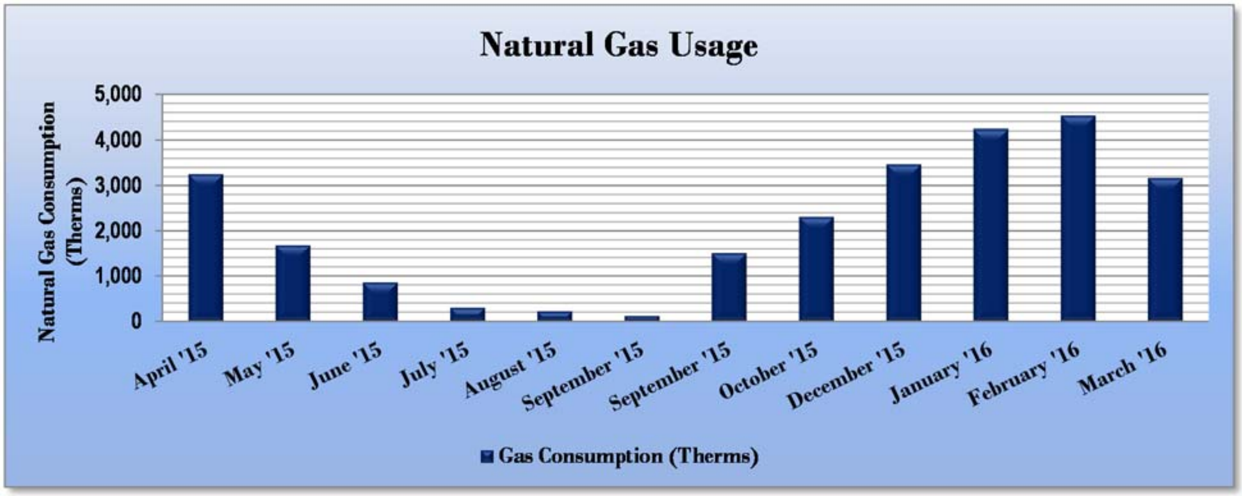


Figure 11 - Natural Gas Usage

Gas Billing Data for Early Chilghood Building				
Period Ending	Days in Period	Natural Gas Usage (Therms)	Natural Gas Cost	TRC Estimated Usage?
4/17/15	30	3,250	$1,897	Yes
5/18/15	31	1,680	$961	Yes
6/17/15	30	855	$517	Yes
7/17/15	30	297	$207	Yes
8/17/15	31	222	$165	Yes
9/16/15	30	121	$106	Yes
10/15/15	29	1,500	$842	Yes
11/13/15	29	2,309	$2,069	Yes
12/16/15	33	3,463	$2,779	Yes
1/19/16	34	4,240	$3,313	Yes
2/17/16	29	4,529	$3,345	Yes
3/17/16	29	3,164	$2,400	Yes
Totals	365	25,629	$18,603	12
Annual	365	25,629	$18,603	

3.4 Benchmarking

This facility was benchmarked through Portfolio Manager, an online tool created and managed by the United State Environmental Protection Agency (EPA) through the ENERGY STAR® program. Portfolio Manager analyzes your building's consumption data, cost information, and operational use details and compares its performance against a yearly baseline, national medians, or similar buildings in your portfolio. Metrics used in this comparison are the energy use intensity (EUI) and ENERGY STAR® Score.

Energy use intensity is a measure of a facility's energy consumption per square foot, and it is the standard metric for comparing buildings' energy performance. Comparing the EUI of a building with the national median EUI for that building type illustrates whether that building uses more energy than similar buildings on a square foot basis or if that building performs better than the median. EUI is presented in both site energy and source energy. Site energy is the amount of fuel and electricity consumed by a building as reflected in utility bills. Source energy is the raw fuel consumed to generate the energy consumed at the site, factoring in energy production and distribution losses.

Figure 12 - Energy Use Intensity Comparison – Existing Conditions

Energy Use Intensity Comparison - Existing Conditions		
	Jewish Community Center Of Somerset	National Median Building Type: Other - General
Source Energy Use Intensity (kBtu/ft^2)	309.2	123.1
Site Energy Use Intensity (kBtu/ft^2)	183.8	78.8

By implementing all recommended measures covered in this reporting, the Project's estimated post-implementation EUI improves as shown in the table below:

Figure 13 - Energy Use Intensity Comparison – Following Installation of Recommended Measures

Energy Use Intensity Comparison - Following Installation of Recommended Measures		
	Jewish Community Center Of Somerset	National Median Building Type: Other - General
Source Energy Use Intensity (kBtu/ft^2)	288.4	123.1
Site Energy Use Intensity (kBtu/ft^2)	176.2	78.8

Many types of commercial buildings are eligible to receive ENERGY STAR® score. This score is a percentile ranking from 1 to 100. It compares your building's energy performance to similar buildings nationwide. A score of 50 represents median energy performance, while a score of 75 means your building performs better than 75 percent of all similar buildings nationwide and may be eligible for ENERGY STAR® certification. This building type does not currently qualify to receive a score.

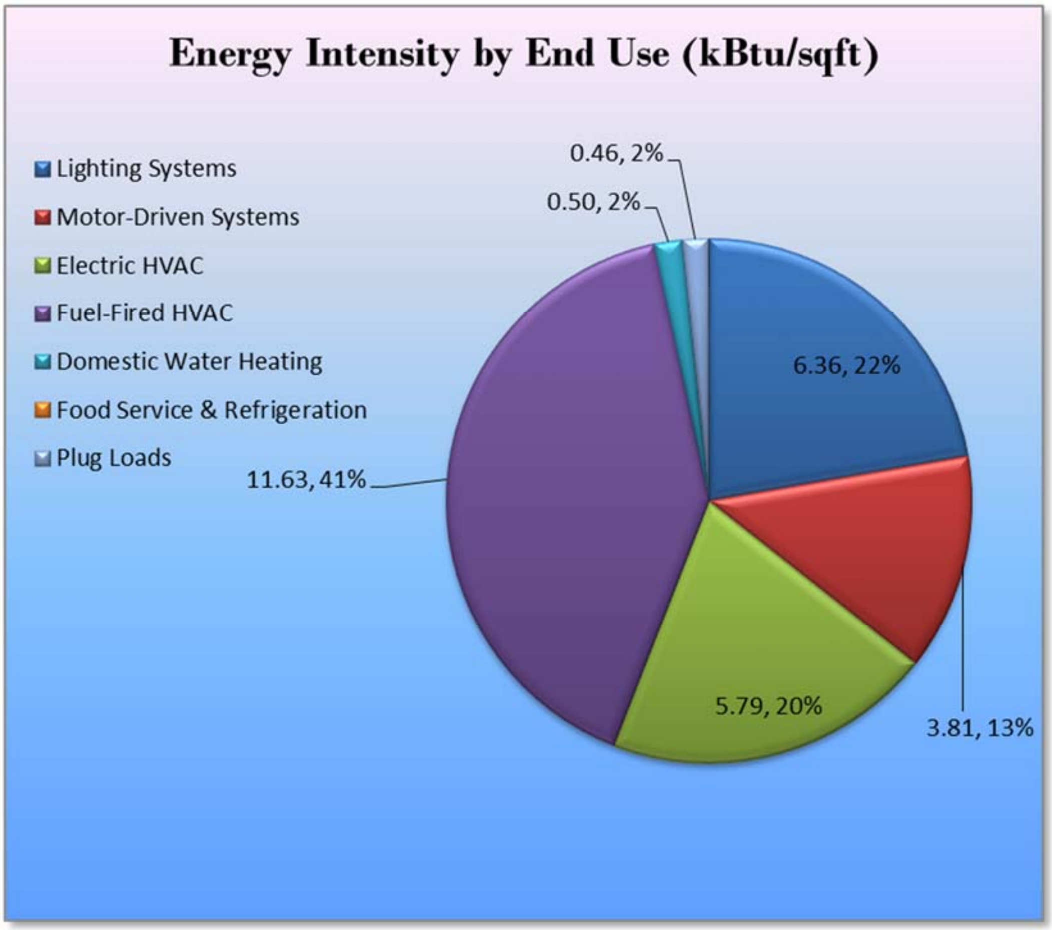
A Portfolio Manager Statement of Energy Performance (SEP) was generated for this facility, see Appendix B: ENERGY STAR® Statement of Energy Performance.

For more information on Energy Star certification go to: https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/earn-recognition/energy-star-certification/how-app-1.

3.5 Energy End-Use Breakdown

In order to provide a complete overview of energy consumption across building systems, an energy balance was performed at this facility. An energy balance utilizes standard practice engineering methods to evaluate all components of the various electric and fuel-fired systems found in a building and determine their proportional contribution to overall building energy usage. This visual representation of energy end uses highlights systems that may benefit most from energy efficiency projects.

Figure 14 - Energy Balance (% and kBtu/SF)



4 Energy Conservation Measures

Level of Analysis

The goal of this audit report is to identify potential energy projects, help prioritize specific measures for implementation, and set Jewish Community Center on a path to receive financial incentives. For this audit report, most measures have received only a preliminary analysis of feasibility which identifies expected ranges of savings and costs. This level of analysis is considered sufficient to make “Go/No-Go” decisions and to prioritize energy projects. Savings are based on the New Jersey Board of Public Utilities New Jersey Clean Energy Program Protocols to Measure Resource Savings dated March 17, 2014. Further analysis or investigation may be required to calculate more accurate savings to support any custom SmartStart, Pay for Performance, or Large Energy Users incentive applications. Financial incentives for the ECMs identified in this report have been calculated based the NJ prescriptive SmartStart program. Depending on your implementation strategy, the project may be eligible for more lucrative incentives through other programs as identified in Section 7.

The following sections describe the evaluated measures.

4.1 Recommended ECMs

The measures below have been evaluated by the auditor and are recommended for implementation at the facility.

Figure 15 – Summary of Recommended ECMs

Energy Conservation Measure		Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	*Annual Natural Gas Savings (MMBtu)*	*Annual N/A Savings (MMBtu)*	*Annual N/A Savings (MMBtu)*	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)*	Estimated Net Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
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Domestic Water Heating Upgrade			0	0.0	28.4	0.0	0.0	28.4	$206.33	$28.68	$0.00	$28.68	0.14	3,328
ECM 6	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	28.4	0.0	0.0	28.4	$206.33	$28.68	$0.00	$28.68	0.14	3,328
TOTALS			36,549	11.7	28.4	0.0	0.0	28.4	$5,011.20	$50,960.25	$3,400.00	$47,560.25	9.49	40,133

* - All incentives presented in this table are based on NJ Smart Start Building equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

Please refer to Appendix A: Equipment Inventory & Recommendations for a detailed list of the locations and light fixtures affected by this measure.

4.1.1 Lighting Upgrades

Lighting Upgrades include several “submeasures” as outlined in Figure 16 below.

Figure 16 – Summary of Lighting Upgrade ECMs

Energy Conservation Measure		Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	*Annual Natural Gas Savings (MMBtu)*	*Annual N/A Savings (MMBtu)*	*Annual N/A Savings (MMBtu)*	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)*	Estimated Net Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades			22,878	7.3	0.0	0.0	0.0	0.0	$3,007.60	$38,392.16	$3,120.00	$35,272.16	11.73	23,038
ECM 1	Install LED Fixtures	Yes	6,735	3.3	0.0	0.0	0.0	0.0	$885.41	$30,394.50	$1,715.00	$28,679.50	32.39	6,782
ECM 2	Retrofit Fixtures with LED Lamps	Yes	15,826	4.0	0.0	0.0	0.0	0.0	$2,080.54	$7,567.43	$1,405.00	$6,162.43	2.96	15,937
ECM 3	Install LED Exit Signs	Yes	317	0.0	0.0	0.0	0.0	0.0	$41.64	$430.22	$0.00	$430.22	10.33	319

ECM 1: Install LED Fixtures

Summary of Measure Economics

Interior/ Exterior	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Interior	259	0.1	0.0	$33.99	$190.95	$5.00	$185.95	5.47	260
Exterior	6,477	3.3	0.0	$851.42	$30,203.55	$1,710.00	$28,493.55	33.47	6,522

Measure Description

This measure evaluates replacing existing fluorescent fixtures with new high performance LED light fixtures. This measure saves energy by installing LED sources which use less power than other technologies with a comparable light output.

Maintenance savings are anticipated since LED sources have burn hours which are generally more than twice that of a fluorescent source and more than 10 times incandescent sources. Maintenance savings may be partially offset by the higher material costs associated with LED sources.

During planning and design for the installation of new fixtures, we recommend a holistic approach that considers both the technology of the lighting sources and how they are controlled.

ECM 2: Retrofit Fixtures with LED Lamps

Summary of Measure Economics

Interior/ Exterior	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Interior	15,826	4.0	0.0	$2,080.54	$7,567.43	$1,405.00	$6,162.43	2.96	15,937
Exterior	0	0.0	0.0	$0.00	$0.00	$0.00	$0.00	0.00	0

Measure Description

This measure evaluates replacing linear fluorescent lamps with LED tube lamps and replacing HID, incandescent and halogen screw-in/plug-in based lamps with LED lamps. Many LED tube lamps are direct replacements for existing fluorescent lamps and can be installed although there is a fluorescent fixture ballast in place. Other tube lamps require that fluorescent fixture ballasts be removed or replaced with LED drivers. Screw-in/plug-in LED lamps can be used as a direct replacement for most other screw-in/plug-in lamps. This measure saves energy by installing LED sources which use less power than other technologies with a comparable light output.

Maintenance savings are anticipated since LED sources have burn hours which are more than twice that of a fluorescent source and more than 10 times incandescent sources. LED lamps that use the existing fluorescent fixture ballast will be constrained by the remaining hours of the ballast. Maintenance savings may be partially offset by the higher material costs associated with LED sources.

During retrofit planning and design, we recommend a holistic approach that considers both the technology of the lighting sources and how they are controlled.

ECM 3: Install LED Exit Signs

Summary of Measure Economics

Interior/ Exterior	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Interior	317	0.0	0.0	$41.64	$430.22	$0.00	$430.22	10.33	319
Exterior	0	0.0	0.0	$0.00	$0.00	$0.00	$0.00	0.00	0

Measure Description

This measure evaluates replacing incandescent and compact fluorescent lighting in exit signs with LEDs. LED sources require virtually no maintenance and LED exit signs have a life expectancy of at least 20 years. Many manufacturers can provide retrofit kits that meet fire and safety code requirements. Retrofit kits are less expensive and simpler to install than replacement signs, however, new fixtures would have a longer useful life and are therefore recommended.

A reduction in maintenance costs will be realized with the proposed retrofit because lamps will not have to be replaced as frequently.

4.1.2 Lighting Control Measures

Lighting control measures include several “submeasures” as outlined in Figure 17 below.

Figure 17 – Summary of Lighting Control ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Lighting Control Measures		3,298	0.8	0.0	$433.55	$1,740.00	$300.00	$1,440.00	3.32	3,321
ECM 5	Install Occupancy Sensor Lighting Controls	3,298	0.8	0.0	$433.55	$1,740.00	$300.00	$1,440.00	3.32	3,321

ECM 4: Install Occupancy Sensor Lighting Controls

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
3,296	0.8	0.0	$433.29	$1,624.00	$280.00	$1,344.00	3.10	3,319

Measure Description

This measure evaluates installing occupancy sensors to control light fixtures that are currently manually controlled in restrooms, storage rooms, multipurpose rooms and private offices. Sensors detect occupancy using ultrasonic and/or infrared wave technologies. Lighting systems are enabled when an occupant is detected. Fixtures are automatically turned off after an area has been vacant for a preset period. Occupants will also be able to manually turn off fixtures. Energy savings result from only operating lighting systems when they are required.

Occupancy sensors may be mounted on the wall at existing switch locations, mounted on the ceiling, or in remote locations. Ceiling-mounted or remote-mounted sensors require the use of low voltage switching relays or a wireless signal to the switch. In general, use wall switch replacement sensors for single occupant offices and other small rooms. Install ceiling-mounted or remote mounted sensors in locations without local switching, in situations where the existing wall switches are not in the line-of-sight of the main work area, and in large spaces. We recommend a holistic design approach that considers both the technology of the lighting sources and how they are controlled.

Maintenance savings are anticipated due to reduced lamp operation, however, additional maintenance costs may be incurred because the occupancy sensors may require periodic adjustment; it is anticipated that the net effect on maintenance costs will be negligible.

4.1.3 Variable Frequency Drive Measures

Variable frequency drive (VFD) measures include several "submeasures" as outlined in Figure 18 below.

Figure 18 – Summary of Variable Frequency Drive ECMs

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
Variable Frequency Drive (VFD) Measures		10,375	3.6	0.0	$1,363.97	$10,915.41	$0.00	$10,915.41	8.00	10,448
ECM 6	Install VFD on Variable Air Volume (VAV) HVAC	10,375	3.6	0.0	$1,363.97	$10,915.41	$0.00	$10,915.41	8.00	10,448

ECM 5: Install VFD on Variable Air Volume (VAV) HVAC

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
10,375	3.6	0.0	$1,363.97	$10,915.41	$0.00	$10,915.41	8.00	10,448

Measure Description

This measure evaluates replacing existing volume control devices on air handling units, such as inlet vanes and variable pitch fan blades, with variable speed drives (VFDs). Inlet guide vanes and variable pitch fan blade are an inefficient means of controlling the air volume compared to VFDs. The existing volume control device would be removed or permanently disabled and the control signal would be redirected to determine VFD output speed. Energy savings result from improved motor turn down performance when there is a reduced load on the fan motors. The magnitude of energy savings is based on the amount of time at reduced loads.

Maintenance savings are anticipated since a VFD is solid state electronic device which generally requires less attention than a mechanical volume control device.

4.1.4 Domestic Water Heating Upgrade

Domestic water heating measures include several "submeasures" as outlined in Figure 19 below.

Figure 19 - Summary of Domestic Water Heating ECMs

Energy Conservation Measure		Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	*Annual Natural Gas Savings (MMBtu)*	*Annual N/A Savings (MMBtu)*	*Annual N/A Savings (MMBtu)*	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)*	Estimated Net Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
ECM 6	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	28.4	0.0	0.0	28.4	$206.33	$28.68	$0.00	$28.68	0.14	3,328

ECM 6: Install Low-Flow DHW Devices

Summary of Measure Economics

Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated Install Cost ($)	Estimated Incentive ($)	Estimated Net Cost ($)	Simple Payback Period (yrs)	CO_2e Emissions Reduction (lbs)
0	0.0	28.4	$206.33	$28.68	$0.00	$28.68	0.14	3,328

Measure Description

This measure evaluates the savings from installing low flow domestic water devices to reduce overall water flow in general and hot water flow in particular. Low flow showerheads and faucet aerators reduce the water flow, relative to standard showerheads and aerators, from the fixture. Pre-rinse spray valves—often used in commercial and institutional kitchens—are designed to remove food waste from dishes prior to dishwashing. Replacing standard pre-rinse spray valves with low flow valves will reduce water use.

All of the low flow devices reduce the overall water flow from the fixture which generally reduces the amount of hot water used resulting in energy and water savings.

5 Energy Efficient Practices

In addition to the quantifiable savings estimated in Section 4, a facility's energy performance can also be improved through application of low or no-cost efficiency strategies. By employing certain behavioral and operational adjustments as well as performing routine maintenance on building systems, equipment lifetime can be extended; occupant comfort, health and safety can be improved; and annual energy, operation, and maintenance costs can be reduced. The recommendations below are provided as a framework for developing a whole building maintenance plan that is customized to your facility. Consult with qualified equipment specialists for details on proper maintenance and system operation.

Reduce Air Leakage

Air leakage, or infiltration, occurs when outside air enters a building uncontrollably through cracks and openings. Properly sealing such cracks and openings can significantly reduce heating and cooling costs, improve building durability, and create a healthier indoor environment. This includes caulking or installing weather stripping around leaky doors and windows allowing for better control of indoor air quality through controlled ventilation.

Close Doors and Windows

Ensure doors and windows are closed in conditioned spaces. Leaving doors and windows open leads to a significant increase in heat transfer between conditioned spaces and the outside air. Reducing a facility's air changes per hour (ACH) can lead to increased occupant comfort as well as significant heating and cooling savings, especially when combined with proper HVAC controls and adequate ventilation.

Perform Proper Lighting Maintenance

In order to sustain optimal lighting levels, lighting fixtures should undergo routine maintenance. Light levels decrease over time due to lamp aging, lamp and ballast failure, and buildup of dirt and dust on lamps, fixtures and reflective surfaces. Together, these factors can reduce total illumination by 20% - 60% or more, while operating fixtures continue drawing full power. To limit this reduction, lamps, reflectors and diffusers should be thoroughly cleaned of dirt, dust, oil, and smoke film buildup approximately every 6 – 12 months.

Develop a Lighting Maintenance Schedule

In addition to routine fixture cleaning, development of a maintenance schedule can both ensure maintenance is performed regularly and can reduce the overall cost of fixture re-lamping and re-ballasting. By re-lamping and re-ballasting fixtures in groups, lighting levels are better maintained and the number of site visits by a lighting technician or contractor can be minimized, decreasing the overall cost of maintenance.

Ensure Lighting Controls Are Operating Properly

Lighting controls are very cost effective energy efficient devices, when installed and operating correctly. As part of a lighting maintenance schedule, lighting controls should be tested annually to ensure proper functioning. For occupancy sensors, this requires triggering the sensor and verifying that the sensor's timer settings are correct. For daylight sensors, maintenance involves cleaning of sensor lenses and confirming setpoints and sensitivity are appropriately configured.

Use Fans to Reduce Cooling Load

Utilizing ceiling fans to supplement cooling is a low cost strategy to reduce cooling load considerably. Thermostat settings can be increased by 4°F with no change in overall occupant comfort when the wind chill effect of moving air is employed for cooling.

Practice Proper Use of Thermostat Schedules and Temperature Resets

Ensure thermostats are correctly set back. By employing proper set back temperatures and schedules, facility heating and cooling costs can be reduced dramatically during periods of low or no occupancy. As such, thermostats should be programmed for a setback of 5-10 °F during low occupancy hours (reduce heating setpoints and increase cooling setpoints). Cooling load can be reduced further by increasing the facility's occupied setpoint temperature. In general, during the cooling season, thermostats should be set as high as possible without sacrificing occupant comfort.

Clean Evaporator/Condenser Coils on AC Systems

Dirty evaporators and condensers coils cause a restriction to air flow and restrict heat transfer. This results in increased evaporator and condenser fan load and a decrease in cooling system performance. Keeping the coils clean allows the fans and cooling system to operate more efficiently.

Clean and/or Replace HVAC Filters

Air filters work to reduce the amount of indoor air pollution and increase occupant comfort. Over time, filters become less and less effective as particulate buildup increases. In addition to health concerns related to clogged filters, filters that have reached saturation also restrict air flow through the facility's air conditioning or heat pump system, increasing the load on the distribution fans and decreasing occupant comfort levels. Filters should be checked monthly and cleaned or replaced when appropriate.

Check for and Seal Duct Leakage

Duct leakage in commercial buildings typically accounts for 5 to 25 percent of the supply airflow. In the case of rooftop air handlers, duct leakage can occur to the outside of the building, significantly increasing cooling and heating costs. By sealing sources of leakage, cooling, heating, and ventilation energy use can be reduced significantly, depending on the severity of air leakage.

Perform Proper Boiler Maintenance

Many boiler problems develop slowly over time, so regular inspection and maintenance is essential to retain proper functionality and efficiency of the heating system. Fuel burning equipment should undergo yearly tune-ups to ensure they are operating as safely and efficiently as possible from a combustion standpoint. A tune-up should include a combustion analysis to analyze the exhaust from the boilers and to ensure the boiler is operating safely. Buildup of dirt, dust, or deposits on the internal surfaces of a boiler can greatly affect its heat transfer efficiency. These deposits can accumulate on the water side or fire side of the boiler. Boilers should be cleaned regularly according to the manufacturer's instructions to remove this build up in order to sustain efficiency and equipment life.

Perform Proper Water Heater Maintenance

At least once a year, drain a few gallons out of the water heater using the drain valve. If there is a lot of sediment or debris, then a full flush is recommended. Turn the temperature down and then completely drain the tank. Once a year check for any leaks or heavy corrosion on the pipes and valves. For gas water heaters, check the draft hood and make sure it is placed properly, with a few inches of air space between the tank and where it connects to the vent. Look for any corrosion or wear on the gas line and on the piping. If you noticed any black residue, soot or charred metal, this is a sign you may be having combustion issues and you should have the unit serviced by a professional. For electric water heaters, look for any signs of leaking such as rust streaks or residue around the upper and lower panels covering the electrical components on the tank. For water heaters over three to four years old have a technician inspect the sacrificial anode annually.

Plug Load Controls

There are a variety of ways to limit the energy use of plug loads including increasing occupant awareness, removing under-utilized equipment, installing hardware controls, and using software controls. Some control steps to take are to enable the most aggressive power settings on existing devices or install load sensing or occupancy sensing (advanced) power strips. For additional information refer to "Assessing and Reducing Plug and Process Loads in Office Buildings" http://www.nrel.gov/docs/fy13osti/54175.pdf, or "Plug Load Best Practices Guide" http://www.advancedbuildings.net/plug-load-best-practices-guide-offices

Water Conservation

Installing low flow faucets or faucet aerators, low flow showerheads, and kitchen sink pre-rinse spray valves saves both energy and water. These devices save energy by reducing the overall amount of hot water used hence reducing the energy used to heat the water. The flow ratings for EPA Water Sense (http://www3.epa.gov/watersense/products) labeled devices are 1.5 gpm for bathroom faucets, 2.0 gpm for showerheads, and 1.28 gpm for pre-rinse spray valves.

Installing dual flush or low flow toilets and low flow or waterless urinals are additional ways to reduce the sites water use, however, these devices do not provide energy savings at the site level. Any reduction in water use does however ultimately reduce grid level electricity use since a significant amount of electricity is used to deliver water from reservoirs to end users. The EPA Water Sense ratings for urinals is 0.5 gallons per flush (gpf) and toilets that use as little as 1.28 gpf (this is lower than the current 1.6 gpf federal standard).

Refer to Section 0 for any low-flow ECM recommendations.

6 SELF-GENERATION MEASURES

Self-generation measures include both renewable (e.g., solar, wind) and non-renewable (e.g., micro turbines) on-site technologies that generate power to meet all or a portion of the electric energy needs of a facility, often repurposing any waste heat where applicable. Also referred to as distributed generation, these systems contribute to Greenhouse Gas (GHG) emission reductions, demand reductions and reduced customer electricity purchases, resulting in the electric system reliability through improved transmission and distribution system utilization.

The State of New Jersey's Energy Master Plan (EMP) encourages new distributed generation of all forms and specifically focuses on expanding use of combined heat and power (CHP) by reducing financial, regulatory and technical barriers and identifying opportunities for new entries. The EMP also outlines a goal of 70% of the State's electrical needs to be met by renewable sources by 2050.

Preliminary screenings were performed to determine the potential that a generation project could provide a cost-effective solution for your facility. Before making a decision to implement, a feasibility study should be conducted that would take a detailed look at existing energy profiles, siting, interconnection, and the costs associated with the generation project including interconnection costs, departing load charges, and any additional special facilities charges.

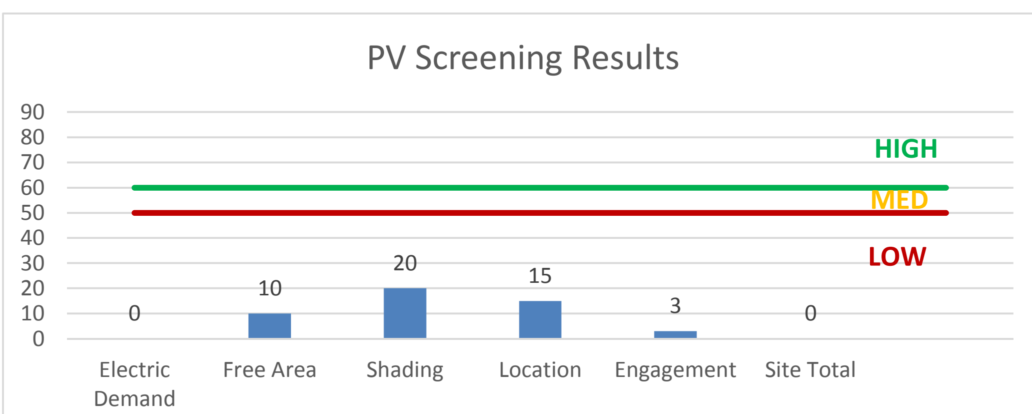
6.1 Photovoltaic

Sunlight can be converted into electricity using photovoltaics (PV) modules. Modules are racked together into an array that produces direct current (DC) electricity. The DC current is converted to alternating current (AC) through an inverter. The inverter is interconnected to the facility's electrical distribution system. The amount of unobstructed area available determines how large of a solar array can be installed. The size of the array combined with the orientation, tilt, and shading elements determines the energy produced.

A preliminary screening based on the facility's electric demand, size and location of free area, and shading elements shows that the facility has a low potential for installing a PV array.

In order to be cost-effective, a solar PV array generally needs a minimum of 4,000 sq ft of flat or south-facing rooftop, or other unshaded space, on which to place the PV panels. In our opinion, the facility does appear not meet these minimum criteria for cost-effective PV installation.

Figure 20 - Photovoltaic Screening



Rebates are not available for solar projects, but owners of solar projects MUST register their projects in the SREC Registration Program prior to the start of construction in order to establish the project's eligibility to earn SRECs. Registration of the intent to participate in New Jersey's solar marketplace provides market participants with information about the pipeline of anticipated new solar capacity and insight into future SREC pricing. Refer to Section 8.6 for additional information.

For more information on solar PV technology and commercial solar markets in New Jersey, or to find a qualified solar installer, who can provide a more detailed assessment of the specific costs and benefits of solar develop of the site, please visit the following links below:

- **Basic Info on Solar PV in NJ**: http://www.njcleanenergy.com/whysolar
- **NJ Solar Market FAQs**: http://www.njcleanenergy.com/renewable-energy/program-updates-and-background-information/solar-transition/solar-market-faqs
- **Approved Solar Installers in the NJ Market**: http://www.njcleanenergy.com/commercial-industrial/programs/nj-smartstart-buildings/tools-and-resources/tradeally/approved_vendorsearch/?id=60&start=1

6.2 Combined Heat and Power

In non-industrial settings, combined heat and power (CHP) is the on-site generation of electricity and recovery of heat which is put to beneficial use. Common prime movers in CHP applications include reciprocating engines, micro turbines, fuel cells, and (at large facilities) gas turbines. Electricity is typically interconnected to the sites local distribution system. Heat is recovered from the exhaust stream and the ancillary cooling system and interconnected to the existing hot water (or steam) distribution system.

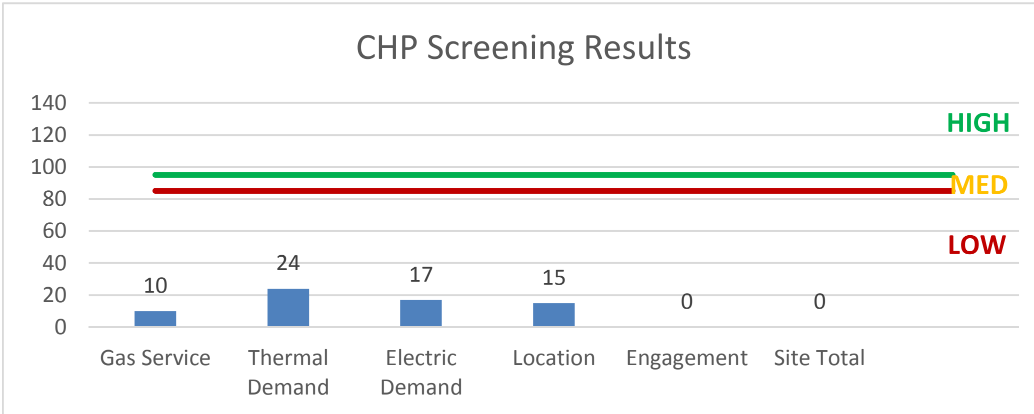
CHP systems are typically used to produce a portion of the electricity needed by a facility, with the balance of electric needs satisfied by purchase from the grid. The heat is used to supplement (or supplant) existing boilers for the purpose of space heating and/or domestic hot water heating. Waste heat can also be routed through absorption chillers for the purpose of space cooling. The key criteria used for screening, however, is the amount of time the system operates at full load and the facility's ability to use the recovered heat. Facilities with continuous use for large quantities of waste heat are the best candidates for CHP.

A preliminary screening based on heating and electrical demand, siting, and interconnection shows that the facility has a Low potential for installing a cost-effective CHP system.

Low or infrequent thermal load, and lack of space near the existing thermal generation are the most significant factors contributing to the low potential for CHP at the site. In our opinion, the facility does not appear to meet the minimum requirements for a cost-effective CHP installation.

For a list of qualified firms in NJ specializing in commercial CHP cost assessment and installation, go to: http://www.njcleanenergy.com/commercial-industrial/programs/nj-smartstart-buildings/tools-and-resources/tradeally/approved_vendorsearch/

Figure 21 - Combined Heat and Power Screening



7 Project Funding / Incentives

The NJCEP is able to provide the incentive programs described below, and others, because of the Societal Benefits Charge (SBC) Fund. The SBC was created by the State of New Jersey's 1999 Electricity Restructuring Law which requires all customers of investor-owned electric and gas utilities to pay this charge on their monthly energy bills. As a contributor to the fund you were able to participate in the LGEA program and are also eligible to utilize the equipment incentive programs. Also available through the NJBPU are some alternative financing programs described later in this section. Please refer to Figure 22 for a list of the eligible programs identified for each recommended ECM.

Figure 22 - ECM Incentive Program Eligibility

Energy Conservation Measure		SmartStart Prescriptive	SmartStart Custom	Direct Install
ECM 1	Install LED Fixtures	x		x
ECM 2	Retrofit Fixtures with LED Lamps	x		x
ECM 3	Install LED Exit Signs			x
ECM 4	Install Occupancy Sensor Lighting Controls	x		x
ECM 5	Install VFD on Variable Air Volume (VAV) HVAC			x
ECM 6	Install Low-Flow Domestic Hot Water Devices			x

SmartStart is generally well suited for implementation of individual or small sets of measures, with the flexibility to install projects at your own pace using in-house staff or a preferred contractor. Direct Install (DI) caters to small to mid-size facilities to bundle measures and simplify participation, but requires the use of pre-approved contractors. The Pay for Performance (P4P) program is a "whole-building" energy improvement program designed for larger facilities and requires implementation of multiple measures meeting minimum savings thresholds, as well as use of pre-approved consultants. The Large Energy Users Program (LEUP) is available to New Jersey's largest energy users giving them flexibility to install as little or as many measures, in a single facility or several facilities, with incentives capped based on the entity's annual energy consumption; applicants can use in-house staff or preferred contractor.

Generally, the incentive values provided throughout the report assume the SS program is utilized because it provides a consistent comparison of available incentives.

Brief descriptions of all relevant alternative financing and incentive programs are located in the sections below. You may also check the following website for further information, including most current program availability, requirements, and incentive levels: www.njcleanenergy.com/ci.

7.1 SmartStart

SmartStart program is comprised of New Construction and Retrofit components that offer incentives for installing prescriptive and custom energy efficiency measures at your facility. Routinely the program adds, removes or modifies incentives for various energy efficiency equipment based on national/market trends, new technologies or changes in efficiency baselines.

Prescriptive Equipment Incentives Available:

Electric Chillers
Electric Unitary HVAC
Gas Cooling
Gas Heating
Gas Water Heating
Ground Source Heat Pumps
Lighting
Lighting Controls
Refrigeration Doors
Refrigeration Controls
Refrigerator/Freezer Motors
Food Service Equipment
Variable Frequency Drives

All customer sizes and types may be served by this program. This program provides an effective mechanism for securing incentives for individual projects that may be completed at once or over several years.

Incentives

The prescriptive path provides fixed incentives for specific energy efficiency measures whereas the custom measure path provides incentives for unique or specialized technologies that are not addressed through prescriptive offerings.

Since your facility is an existing building, only the Retrofit incentives have been applied in this report. Custom Measure incentives are calculated at $0.16/kWh and $1.60/therm based on estimated annual savings, capped at the lesser of 50% of the total installed incremental project cost, or a buy down to a one year payback. Program incentives are capped at $500,000 per electric account and $500,000 per natural gas account, per fiscal year.

How to Participate

To participate in the SmartStart program you will need to submit an application for the specific equipment to be installed. Many applications are designed as rebates, although others require application approval prior to installation. Applicants may work with a contractor of their choosing and can also utilize internal personnel, which provides added flexibility to the program. Using internal personnel also helps improve the economics of the ECM by reducing the labor cost that is included in the tables in this report.

Detailed program descriptions, instructions for applying and applications can be found at: www.njcleanenergy.com/SSB.

7.2 Direct Install

Overview

Direct Install (DI) is a turnkey program available to existing small to mid-sized facilities with a peak electric demand that did not exceed 200 kW in any of the preceding 12 months. You will work directly with a pre-approved contractor who will perform a free energy assessment at your facility, identify specific eligible measures, and install those measures. Energy efficiency measures may include lighting and lighting controls, refrigeration, HVAC, motors, variable speed drives and controls.

Incentives

The program pays up to 70% of the total installed cost of eligible measures, up to $125,000 per project. Direct Install participants will also be held to a fiscal year cap of $250,000 per entity.

How to Participate

To participate in the DI program you will need to contact the participating contractor assigned to the county where your facility is located; a complete list is provided on the DI website identified below. The contractor will be paid the program incentive directly which will pass on to you in the form of reduced material and implementation costs. This means up to 70% of eligible costs are covered by the program, subject to program caps mentioned above, and the remaining 30% of the cost is your responsibility to the contractor.

Since DI offers a free assessment, LGEA applicants that do not meet the audit program eligibility requirements, but do meet the DI requirements, may be moved directly into this program.

Detailed program descriptions and applications can be found at: www.njcleanenergy.com/DI.

8 Energy Purchasing and Procurement Strategies

8.1 Retail Electric Supply Options

In 1999, New Jersey State Legislature passed the Electric Discount & Energy Competition Act (EDECA) to restructure the electric power industry in New Jersey. This law deregulated the retail electric markets, allowing all consumers to shop for service from competitive electric suppliers. The intent was to create a more competitive market for electric power supply in New Jersey. As a result, utilities were allowed to charge Cost of Service and customers were given the ability to choose a third party (i.e. non-utility) energy supplier.

Energy deregulation in New Jersey has increased energy buyers' options by separating the function of electricity distribution from that of electricity supply. So, though you may choose a different company from which to buy your electric power, responsibility for your facility's interconnection to the grid and repair to local power distribution will still reside with the traditional utility company serving your region.

If your facility is not purchasing electricity from a third party supplier, consider shopping for a reduced rate from third party electric suppliers. If your facility is purchasing electricity from a third party supplier, review and compare prices at the end of the current contract or every couple years.

A list of third party electric suppliers, who are licensed by the state to provide service in New Jersey, can be found online at: **www.state.nj.us/bpu/commercial/shopping.html**.

8.2 Retail Natural Gas Supply Options

The natural gas market in New Jersey has also been deregulated. Most customers that remain with the utility for natural gas service pay rates that are market-based and that fluctuate on a monthly basis. The utility provides basic gas supply service (BGSS) to customers who choose not to buy from a Third Party Supplier for natural gas commodity.

A customer's decision about whether to buy natural gas from a retail supplier is typically dependent upon whether a customer seeks budget certainty and/or longer-term rate stability. Customers can secure longer-term fixed prices by signing up for service through a third party retail natural gas supplier. Many larger natural gas customers may seek the assistance of a professional consultant to assist in their procurement process.

If your facility is not purchasing natural gas from a third party supplier, consider shopping for a reduced rate from third party natural gas suppliers. If your facility is purchasing natural gas from a third party supplier, review and compare prices at the end of the current contract or every couple years.

A list of third party natural gas suppliers, who are licensed by the state to provide service in New Jersey, can be found online at: **www.state.nj.us/bpu/commercial/shopping.html**.

Appendix A: Equipment Inventory & Recommendations

Lighting Inventory & Recommendations

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Hallway	2	Exit Signs: Incandescent	None	14	8,760	Fixture Replacement	No	2	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	158	0.0	$20.82	$215.11	$0.00	10.33
Hallway	14	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	No	14	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,860	0.56	2,240	0.0	$294.43	$1,052.80	$210.00	2.86
Office Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	Yes	3	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,002	0.15	606	0.0	$79.73	$341.60	$65.00	3.47
Closet	1	U-Bend Fluorescent - T8: U T8 (32W) - 1L	Wall Switch	39	2,860	Relamp	No	1	LED - Linear Tubes: (1) U-Lamp	Wall Switch	17	2,860	0.02	73	0.0	$9.56	$39.73	$0.00	4.16
Janitorial	1	Linear Fluorescent - T12: 2' T12 (20W) - 2L	Wall Switch	50	2,860	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	2,860	0.03	107	0.0	$14.02	$48.20	$0.00	3.44
Room1	1	Exit Signs: Incandescent	None	14	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	79	0.0	$10.41	$107.56	$0.00	10.33
Room1	9	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	Yes	9	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,002	0.46	1,819	0.0	$239.18	$792.80	$155.00	2.67
Bathroom	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	2,860	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	2,860	0.02	94	0.0	$12.32	$63.20	$0.00	5.13
Cheater Room	3	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	Yes	3	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,002	0.15	606	0.0	$79.73	$341.60	$65.00	3.47
Boys Bathroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,002	0.10	404	0.0	$53.15	$266.40	$50.00	4.07
Girls Bathroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,002	0.10	404	0.0	$53.15	$266.40	$50.00	4.07
Room7(Steger Room)	8	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	Yes	8	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,002	0.41	1,617	0.0	$212.60	$717.60	$140.00	2.72
Room7(Steger Room)	1	Exit Signs: Incandescent	None	14	8,760	Fixture Replacement	No	1	LED Exit Signs: 2 W Lamp	None	6	8,760	0.01	79	0.0	$10.41	$107.56	$0.00	10.33
Bathroom	2	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	Yes	2	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,002	0.10	404	0.0	$53.15	$266.40	$50.00	4.07
Zweig Familly Room	11	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	Yes	11	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,002	0.56	2,224	0.0	$292.33	$943.20	$185.00	2.59
Bathroom	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	Yes	1	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,002	0.05	202	0.0	$26.58	$191.20	$35.00	5.88
Bathroom	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	2,860	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	2,860	0.02	94	0.0	$12.32	$63.20	$0.00	5.13
Laurie Foundation Room	9	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	Yes	9	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,002	0.46	1,819	0.0	$239.18	$792.80	$155.00	2.67
Bunevich Room	11	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	Yes	11	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,002	0.56	2,224	0.0	$292.33	$943.20	$185.00	2.59
Inez Caon Room	9	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	Yes	9	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,002	0.46	1,819	0.0	$239.18	$792.80	$155.00	2.67
Bathroom	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	2,860	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	2,860	0.02	94	0.0	$12.32	$63.20	$0.00	5.13
Room12	7	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	Yes	7	LED - Linear Tubes: (3) 4' Lamps	Occupancy Sensor	44	2,002	0.36	1,415	0.0	$186.03	$642.40	$125.00	2.78
Bathroom	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	2,860	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	2,860	0.02	94	0.0	$12.32	$63.20	$0.00	5.13
Closet	1	Linear Fluorescent - T12: 2' T12 (20W) - 2L	Wall Switch	50	2,860	Relamp	No	1	LED - Linear Tubes: (2) 2' Lamps	Wall Switch	17	2,860	0.03	107	0.0	$14.02	$48.20	$0.00	3.44
Stairway	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	2,860	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	2,860	0.02	94	0.0	$12.32	$63.20	$0.00	5.13

Lighting Inventory & Recommendations

	Existing Conditions					Proposed Conditions							Energy Impact & Financial Analysis						
Location	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Fixture Recommendation	Add Controls?	Fixture Quantity	Fixture Description	Control System	Watts per Fixture	Annual Operating Hours	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Stairway	1	Compact Fluorescent: Wall Sconce 2x26 4-PIN	Wall Switch	52	2,860	Fixture Replacement	No	1	LED - Fixtures: Downlight Solid State Retrofit	Wall Switch	26	2,860	0.02	84	0.0	$11.05	$63.65	$5.00	5.31
Stairway	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,860	0.04	160	0.0	$21.03	$75.20	$15.00	2.86
Elevator Room	1	Linear Fluorescent - T8: 4' T8 (32W) - 2L	Wall Switch	62	2,860	Relamp	No	1	LED - Linear Tubes: (2) 4' Lamps	Wall Switch	29	2,860	0.03	107	0.0	$14.02	$58.50	$10.00	3.46
Back Stairway	1	U-Bend Fluorescent - T8: U T8 (32W) - 2L	Wall Switch	62	2,860	Relamp	No	1	LED - Linear Tubes: (2) U-Lamp	Wall Switch	33	2,860	0.02	87	0.0	$11.47	$63.20	$0.00	5.51
Back Stairway	1	Linear Fluorescent - T8: 4' T8 (32W) - 3L	Wall Switch	93	2,860	Relamp	No	1	LED - Linear Tubes: (3) 4' Lamps	Wall Switch	44	2,860	0.04	160	0.0	$21.03	$75.20	$15.00	2.86
Back Stairway	2	Compact Fluorescent: Wall Sconce 2x26 4-PIN	Wall Switch	52	2,860	Fixture Replacement	Yes	2	LED - Fixtures: Downlight Solid State Retrofit	Occupancy Sensor	25	2,002	0.06	223	0.0	$29.32	$243.30	$20.00	7.62
Exterior Perimeter Light	5	Metal Halide: LED Flood Light 120W	Daylight Dimming	120	1,430	None	No	5	Metal Halide: LED Flood Light 120W	Daylight Dimming	120	1,430	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Exterior Perimeter Light	2	Halogen Incandescent: Recessed PAR38 90W	Daylight Dimming	90	1,430	Fixture Replacement	No	2	LED - Fixtures: Downlight Solid State Retrofit	Daylight Dimming	13	1,430	0.13	249	0.0	$32.71	$127.30	$10.00	3.59
Exterior Perimeter Light	2	Metal Halide: Wall Pack 150W	Daylight Dimming	150	1,430	Fixture Replacement	No	2	LED - Fixtures: Outdoor Wall-Mounted Area Fixture	Daylight Dimming	40	1,430	0.18	355	0.0	$46.73	$781.35	$200.00	12.44
Parking Lot	4	Metal Halide: Pole Light 250W	Daylight Dimming	250	1,430	Fixture Replacement	No	4	LED - Fixtures: Outdoor Pole/Arm-Mounted Area/Roadway Fixture	Daylight Dimming	40	1,430	0.68	1,357	0.0	$178.44	$7,811.97	$400.00	41.54
Parking Lot	11	Metal Halide: pole Light 400W	Daylight Dimming	400	1,430	Fixture Replacement	No	11	LED - Fixtures: Outdoor Pole/Arm-Mounted Area/Roadway Fixture	Daylight Dimming	146	1,430	2.27	4,515	0.0	$593.53	$21,482.92	$1,100.00	34.34
Parking Lot	4	Metal Halide: LED Flood Light 120W	Daylight Dimming	120	1,430	None	No	4	Metal Halide: LED Flood Light 120W	Daylight Dimming	120	1,430	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Motor Inventory & Recommendations

		Existing Conditions						Proposed Conditions				Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	Motor Quantity	Motor Application	HP Per Motor	Full Load Efficiency	VFD Control?	Annual Operating Hours	Install High Efficiency Motors?	Full Load Efficiency	Install VFDs?	Number of VFDs	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Roof Top	Bathroom	1	Exhaust Fan	0.3	72.0%	No	2,745	No	72.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof Top	RTU	4	Other	2.0	75.0%	No	2,745	No	75.0%	Yes	4	3.56	10,375	0.0	$1,363.97	$10,915.41	$0.00	8.00
Roof Top	RTU	8	Other	0.3	75.0%	No	2,745	No	75.0%	No		0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Electric HVAC Inventory & Recommendations

		Existing Conditions				Proposed Conditions								Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Install High Efficiency System?	System Quantity	System Type	Cooling Capacity per Unit (Tons)	Heating Capacity per Unit (kBtu/hr)	Cooling Mode Efficiency (SEER/EER)	Heating Mode Efficiency (COP)	Install Dual Enthalpy Economizer?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Roof Top RTU1	Laurie Fondation Classroom	1	Packaged Terminal AC	7.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof Top RTU2	Steger Classroom	1	Packaged Terminal AC	7.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof Top RTU3	Bunevich Classroom	1	Packaged Terminal AC	7.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Roof Top RTU4	Zweiz Familly Classroom	1	Packaged Terminal AC	7.50		No							No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Fuel Heating Inventory & Recommendations

		Existing Conditions			Proposed Conditions						Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Output Capacity per Unit (MBh)	Install High Efficiency System?	System Quantity	System Type	Output Capacity per Unit (MBh)	Heating Efficiency	Heating Efficiency Units	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Pump Room	Indoor Pool	1	Condensing Hot Water Boiler	124.00	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00

DHW Inventory & Recommendations

		Existing Conditions		Proposed Conditions						Energy Impact & Financial Analysis						
Location	Area(s)/System(s) Served	System Quantity	System Type	Replace?	System Quantity	System Type	Fuel Type	System Efficiency	Efficiency Units	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Mechanical Room	Main Building	1	Storage Tank Water Heater (> 50 Gal)	No						0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Low-Flow Device Recommendations

	Recommedation Inputs				Energy Impact & Financial Analysis						
Location	Device Quantity	Device Type	Existing Flow Rate (gpm)	Proposed Flow Rate (gpm)	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Boys Bathroom	1	Faucet Aerator (Lavatory)	3.50	1.00	0.00	0	10.2	$73.69	$7.17	$0.00	0.10
Girls Bathroom	2	Faucet Aerator (Lavatory)	2.50	1.00	0.00	0	12.2	$88.43	$14.34	$0.00	0.16
Room7 Bathroom	1	Faucet Aerator (Lavatory)	2.50	1.00	0.00	0	6.1	$44.21	$7.17	$0.00	0.16

Novelty Cooler Inventory & Recommendations

	Existing Conditions		Proposed Conditions	Energy Impact & Financial Analysis						
Location	Quantity	Cooler Description	Install Automatic Shutoff Control?	Total Peak kW Savings	Total Annual kWh Savings	Total Annual MMBtu Savings	Total Annual Energy Cost Savings	Total Installation Cost	Total Incentives	Simple Payback w/ Incentives in Years
Cheater Room	1	Small Freezer	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00
Zweig F. Room	1	Small Freezer	No	0.00	0	0.0	$0.00	$0.00	$0.00	0.00

Plug Load Inventory

	Existing Conditions			
Location	Quantity	Equipment Description	Energy Rate (W)	ENERGY STAR Qualified?
Office	2	Dell Desktop	110.0	Yes
Office	1	Printer	760.0	No
Cheater Room	1	Microwave	1,000.0	No
Cheater Room	1	Toaster	800.0	No
Zweig F. Room	1	Microwave	1,000.0	No
Zweig F. Room	1	Microwave	1,000.0	No
Bunevich Room	4	Dell Desktop	110.0	Yes

Appendix B: ENERGY STAR® Statement of Energy Performance

ENERGY STAR® Statement of Energy Performance

LEARN MORE AT energystar.gov

N/A

ENERGY STAR® Score[1]

Jewish Community Center - S, H & W Counties, Inc

Primary Property Type: Pre-school/Daycare
Gross Floor Area (ft²): 20,000
Built: 2008

For Year Ending: February 29, 2016
Date Generated: September 30, 2016

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address	Property Owner	Primary Contact
Jewish Community Center - S, H & W Counties, Inc 775 Talamini Rd Bridgewater, New Jersey 08807	________________ , (___)___-_____	____ ________ , (___)___-_____ ________________

Property ID: 5086498

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
175 kBtu/ft²

Annual Energy by Fuel

Electric - Grid (kBtu)	1,112,604 (32%)
Natural Gas (kBtu)	2,388,315 (68%)

Source EUI
300.1 kBtu/ft²

National Median Comparison

National Median Site EUI (kBtu/ft²)	85
National Median Source EUI (kBtu/ft²)	145.7
% Diff from National Median Source EUI	106%

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO2e/year)	149

Signature & Stamp of Verifying Professional

I ________________ (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: ______________________Date: ___________

Licensed Professional

____ ________
,
(___)___-_____
____

Professional Engineer Stamp
(if applicable)