Long Island Power Authority

Energy Audit Report

for

Deer Park Schools
Memorial School

February 26, 2008

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1 Executive Summary

This report presents the findings of an energy survey conducted on February 7, 2008 by Bill Conn for:

Deer Park Schools Memorial School
41 Homer Ave
Deer Park, NY 11729
631-274-4080

Facility contact person: Kirk Gostkowski
LIPA account number(s): 724-12-5795-17
Gas 724-12-5800-00

Long Island Power Authority (LIPA) conducts energy surveys at no charge to its customers. The surveys promote LIPA's message of safeguarding the environment, reducing dependence on foreign oil and delaying the need to build costly new power plants. This can be achieved through the wiser and more efficient use of energy.

The annual energy costs at this facility are as follows:

Electricity	$26,483
Natural Gas	$13,790
Total	$40,273

The potential annual energy cost savings are shown below in Table 1-1.

Table 1-1
Energy Cost Reduction Opportunities (ECRO's)

Description	Potential Rebate*	Cost After Rebate	Annual Savings	Payback with Rebate	% of Annual Energy Cost
Upgrade the Lighting		$92	$80	1.2 years	0.2%
Install Lighting Controls	$35	$145	$73	2.0 years	0.2%
Improve Temperature Control	$100	$360	$3,862	0.1 years	9.6%
Upgrade the HVAC		$910	$687	1.3 years	1.7%
Totals	**$135**	**$1,507**	**$4,702**	**0.3 years**	**11.7%**

1 Executive Summary

* **NOTE**: Rebates are subject to caps, changes and eligibility requirements. In addition, there may be other rebates that apply. Prior to purchasing any equipment you must contact your LIPA representative or the audit program administrator, John Pratnicki, at (631) 755-5390 for assistance in the pre-approval process and in determining your potential rebate amount.
The estimated demand and energy savings are shown below in Table 1-3. The information in this table corresponds to the recommendations in Table 1-1.

Table 1-3
Estimated Energy Savings

Recommendation	Total kW Reduction	Total Annual kWh Reduction	Total Annual Therms Reduced
Upgrade the Lighting	0.2	415	
Install Lighting Controls		482	
Improve Temperature Control		3,146	2,639
Upgrade the HVAC		4,378	
Totals	**0.2**	**8,421**	**2,639**

The remainder of the report is organized as follows: Section 2 explains the details of the Energy Cost Reduction Opportunities, Section 3 shows the historical energy usage and costs for this facility. Section 4 gives an equipment inventory and discusses the building characteristics (architectural, mechanical, electrical, etc.), and Section 5 is the methodology used to survey and analyze your facility.

1 Executive Summary

Auditor's Comments

In many buildings the most cost effective measure will be temperature control during unoccupied periods. The temperature is currently being setback at night but there may be opportunities to optimize these savings.

Each zone should have a temperature control schedule and the heat set back 15 minutes before the end on occupancy. Programmable thermostats will allow adequate warm up time in the morning.

Setting back the heat more aggressively at night will also reduce the operating hours on the blower fan.

The usage appears relatively high for the connected load. It is difficult to evaluate without exact run-time data on the Publications equipment. It may be helpful to determine that the furnace for the Community Center is not on the Community Centers electric meter.

The operation of heating, cooling and ventilation fans is a significant load. The operating schedule and sequence of operation for fans should be verified. After normal hours of occupancy heating/ cooling fans should only run as needed.

Exhaust fans should be on a 7-day timer.

At some point, It may be better to utilize one larger cooling system for the Publications area since this area is conditioned 24 hours/day. A larger unit would allow more precise temperature control and an automatic reset of temperature during unoccupied hours where only dehumidification is required.

Before any major or long-term investments are made, the customer should consider the long term plans for the facility. The windows are old but appear to be integral to a wall component that includes steel panels and the windows. If the facility is to be retained replacement windows could be evaluated. A better choice may be to replace entire wall panels and reduce the window area.

1 Executive Summary

Energy Star Rating

The Environmental Protection Agency's Energy Star Portfolio Manager program rates buildings by their energy efficiency. This rating is adjusted for building use and location. This is a voluntary program established to help facility managers establish baselines for energy consumption and measure progress.

A comparative rating is not available for this type of building due to the diversity of use.

However your building performance can be tracked if you chose to monitor your performance over time.

One-year period ending May 2007

Gross Floor Area (ft^2)	13,500
Energy Cost $/year	$40,273
Energy Cost ($/$ft^2$/year)	$2.98
Energy Intensity kBtu/ft_2 *	111
CO_2 Emissions (tons/year) **	163

* Btu = British Thermal Unit kBtu = 1,000 Btu

A Btu is the amount of energy required to raise one pound of water one degree Fahrenheit.

** Total Carbon Dioxide emissions attributed to your energy use as calculated by the EPA

Energy Star Portfolio Manager http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager

1 Executive Summary

Audit Disclaimer

This audit has been conducted and prepared by LIPA for the sole purpose of presenting energy cost reduction opportunities for you. This report is not intended for any other purpose. The data used in this audit was provided by your organization and was not independently verified by us.

While the recommendations in this report have been reviewed for technical accuracy, LIPA is not liable if projected savings are not actually achieved. The recommendations are based on an analysis of conditions observed at the time of the audit and information provided by your organization. Estimated savings are computed on the basis of research by government agencies and engineering groups. Actual savings will depend on many factors including conservation measures implemented, seasonal variations in fuel price and weather, and specific energy use practices of the building occupants.

Costs are based on average local costs for materials and labor. It is strongly suggested that you contact a qualified contractor prior to implementing any of the recommendations outlined in this report. Many items are not included in our costs, such as removal and disposal of the existing equipment, bringing the new equipment installation up to code, asbestos abatement, lighting ballast PCB and lamp mercury handling, etc.

We hope that this report is helpful and that you will implement the energy savings measures that we recommended. If you have any questions, please contact Stacey Wagner at (631) 755-5358 or your LIPA representative.

2 Energy Cost Reduction Opportunities

Upgrade the Lighting

Install Compact Fluorescent Lighting

Compact fluorescent lamps (CFL's) were created to be replacements for the standard incandescent lamps that are common to table lamps, spot lights, hi-hats, bathroom vanity lighting, etc. The light output of the CFL has been designed to look like the incandescent lamp. The color rendering index (CRI) of the CFL is much higher than standard fluorescent lighting, and therefore provides a much "truer" light. In some instances, this is still not the desired ambiance, but in most cases the significant energy savings and the "near incandescent" effect is welcomed.

The CFL buyer should spend some time shopping around, since the CFL is available in a myriad of shapes and sizes depending on the specific application. But for almost any application, there is a lamp that fits the need. Typical replacements are: a 13-Watt CFL for a 60-Watt incandescent lamp, an 18-Watt CFL for a 75-Watt incandescent lamp, and a 25-Watt CFL for a 100-Watt incandescent lamp.

The CFL is also available for a number of "brightness colors" that is indicated by the Kelvin rating. A 2700K CFL is the "warmest" color available and is closest in color to the incandescent lamp. Then there is a 3000K, a 3500K, and a 4100K. The 4100K would be the "brightest" or "coolest" output. It would be wise to see an example of each before making a purchase, and even to see a sample of the lamp you are buying since Kelvin ratings vary between manufacturers.

A CFL can be chosen to screw right into your existing fixtures, or to be hardwired into your existing fixtures, or a new CFL fixture could be purchased.

NOTE: fluorescent ballasts that are to be used in cold locations need to be specified as such. These "cold temperature" ballasts can be rated as low as zero degrees Fahrenheit.

The following table lists the details of the lighting upgrade. Applicable areas and the recommended action are shown. The first column identifies the line number that corresponds to the detailed lighting inventory at the end of this report.

It is strongly suggested that you contact a qualified contractor prior to implementing any of the recommendations outlined in this report. Many items are not included in our costs, such as removal and disposal of the existing equipment, bringing the new equipment installation up to code, asbestos abatement, lighting ballast PCB and lamp mercury handling, etc. In addition, the costs shown in this section are the basic costs you would incur if you were to install the project on your own. If you decide to use a contractor, then you most likely will see costs about 20-30% higher, plus the miscellaneous costs mentioned previously.

2 Energy Cost Reduction Opportunities

Upgrade the Lighting - Details

Line # - Area	Action	Cost and Savings
16 - Rest Rooms	For the existing 2 round fixtures, each using 2, 60-Watt, incandescent lamps, retrofit with 15-Watt compact fluorescent screw-in lamps. (New qty: 4)	Cost After Rebates: $92 Annual Savings: $80 Payback: 1.2 years.

Total Fixtures	
Unaffected Qty:	169
Affected Qty:	2
Total Existing Qty:	171

Totals	
Potential Rebate:	
Cost After Rebate:	$92
Annual Savings:	$80
Payback:	1.2 years

2 Energy Cost Reduction Opportunities

Improve Temperature Control

It is the intention of almost all facilities to keep the thermostat set at the most economical position while providing an appropriate climate for the occupants. However, due to thermostat problems, too many people with access to the thermostat, or faulty setback equipment, many control systems fall short of the optimum energy cost savings.

Install Digital Thermostats

By installing digital thermostats you eliminate most of the impediments to significant energy cost savings. Digital thermostats can be purchased with password capability, or key capability, or other deterrent. And in addition to the savings found through consistent setpoints, they can be programmed to more extreme unoccupied temperatures with a warm-up schedule that prepares the building for occupancy.

Install Lock Boxes over the Thermostats

Excessive tampering of the thermostats causes inefficient cycling of the heating and cooling equipment, ineffective modulation of the occupied room temperature, and inconsistent setback/setforward settings. To avoid these problems lock boxes should be installed over the thermostats. Special lock boxes for thermostats have holes in them to allow room air to enter the box, but they limit control of the thermostat to those people with keys. This can result in a significant amount of energy cost savings at a very low initial cost.

The following tables show the existing setpoints for each area of the facility and also the recommended or "proposed" setpoints (shown in the shaded rows). It should be noted that the temperature setpoints in the facility may have varied greatly over the past twelve months. The information shown below for the "existing conditions" is based on data collected at the site and is adjusted up or down depending upon the amount of energy used over the past twelve months.

Zone 1		Occupied Periods		Days/	Heating Profile		Cooling Profile	
		From	To	Week	Occupied	Unocc	Occupied	Unocc
Offices & Maintenace Shops	*existing*	7:00 AM	12:00 AM	5	70	64	74	85
	proposed	7:00 AM	12:00 AM	5	70	55	74	85
	existing			2		64		
	proposed			2		55		

2 Energy Cost Reduction Opportunities

Zone 1 Summary - Offices & Maintenace Shops	
Annual Heating Cost Savings (gas):	$2,715
Number of Thermostats Required:	1
Number of Lock Boxes Required:	1
Total Materials:	$135
Total Labor:	$95
Total Installation Cost:	$230
Payback:	0.1 years

Zone 2		Occupied Periods		Days/	Heating Profile		Cooling Profile	
		From	To	Week	Occupied	Unocc	Occupied	Unocc
Publications Area	*existing*	7:00 AM	8:00 PM	5	70	64	74	74
	proposed	7:00 AM	8:00 PM	5	70	55	78	78
	existing			2		64	74	74
	proposed			2		55	78	78

Zone 2 Summary - Publications Area	
Annual Heating Cost Savings (gas):	$642
Annual Cooling Cost Savings:	$505
Number of Thermostats Required:	1
Number of Lock Boxes Required:	1
Total Materials:	$135
Total Labor:	$95
Total Installation Cost:	$230
Payback:	0.2 years

2 Energy Cost Reduction Opportunities

Upgrade the HVAC

HVAC stands for heating, ventilation, and air conditioning. All of this equipment requires periodic maintenance that includes equipment adjustments and part replacements. By replacing parts it is possible to keep most HVAC equipment operating well beyond its economic life. At some point, however, the efficiency of the old equipment must be compared to newer models that incorporate the latest designs and state-of-the-art technologies. Based on energy savings alone, an investment in new equipment is often cost effective. But the analysis must go further to include maintenance savings, as well. This report is an "energy" report and considers only the portion of savings due to energy-efficiency. The recommendations that follow are suggestions to improve the efficiency of the HVAC systems.

Install Timeclocks on the Fans

Ventilation fans often run more often than necessary. This is due to over-designing and/or lack of or improperly used controls. The table below concerning timeclocks shows the existing and proposed operating hours.

Fan Timeclocks	**Qty**	**Capacity**	**Units**	**Existing Hours**		**Proposed Hours**	
Equipment Description				**Winter**	**Summer**	**Winter**	**Summer**
York Rooftop Unit #1	1	1.5	HP	100	168	80	70
Exhaust Fan	1	0.25	HP	168	168	70	70
	Energy Cost Savings:			***$687***			
	Material Cost:			***$350***			
	Labor Cost:			***$560***			
	Total Cost:			***$910***			
	Payback (years):			***1.3***			

3 Historical Energy Usage and Costs

Table 3-2 and Figure 3-1 represents the electrical energy usage for the surveyed building from Dec-07 to Nov-08. LIPA provides electricity to the facility under Rate 281. This electric rate has a component for consumption that is measured in kilowatt-hours (kWh). It is measured by multiplying the wattage of the equipment times the hours that it operates. For example, a 1,000-Watt lamp operating for 5 hours would measure 5,000 Watt-hours. Since one kilowatt is equal to 1,000 Watts, the measured consumption would be 5 kWh. This rate has another component for Peak Demand that is measured in kilowatts (kW). Following the example above, if your facility had nothing else in it except for the 1,000-Watt lamp, then your monthly Peak Demand would be 1.0 kW. Your meter averages your demand constantly over 15 or 30-minute intervals (depending upon the utility and the specific rate). At the end of the month you are charged for the highest "average" and this is called your Peak Demand. Based on these definitions of consumption and Peak Demand it can be shown that keeping equipment off whenever it is not in use will reduce your consumption, while not operating equipment simultaneously will reduce your Peak Demand.

Rates used in this report reflect the most current rate structure available. Table 3-1 shows the annualized rate structure:

Table 3-1
Rate Structure for Rate 281

Description	Summer	Winter	Average
Demand Charge	$9.99/kW	$8.88/kW	$9.25/kW
Energy Charge	$0.1605/kWh	$0.1456/kWh	$0.1506/kWh

Figure 3-2 is a pie chart reflecting the electrical end-uses and their contribution to the total electricity usage. Table 3-3 is the electrical end-use in data format.

Table 3-4 and Figure 3-3 on the following pages show the natural gas energy usage for the surveyed building from Dec-07 to Nov-08. Gas is supplied by Keyspan. The annual usage and cost are 10,839 CCF and $13,790, respectively. This yields an average cost $1.27230 / CCF.

Figure 3-4 is a pie chart reflecting the gas end-uses and their contribution to the total gas usage. Table 3-5 is the gas end-use in data format.

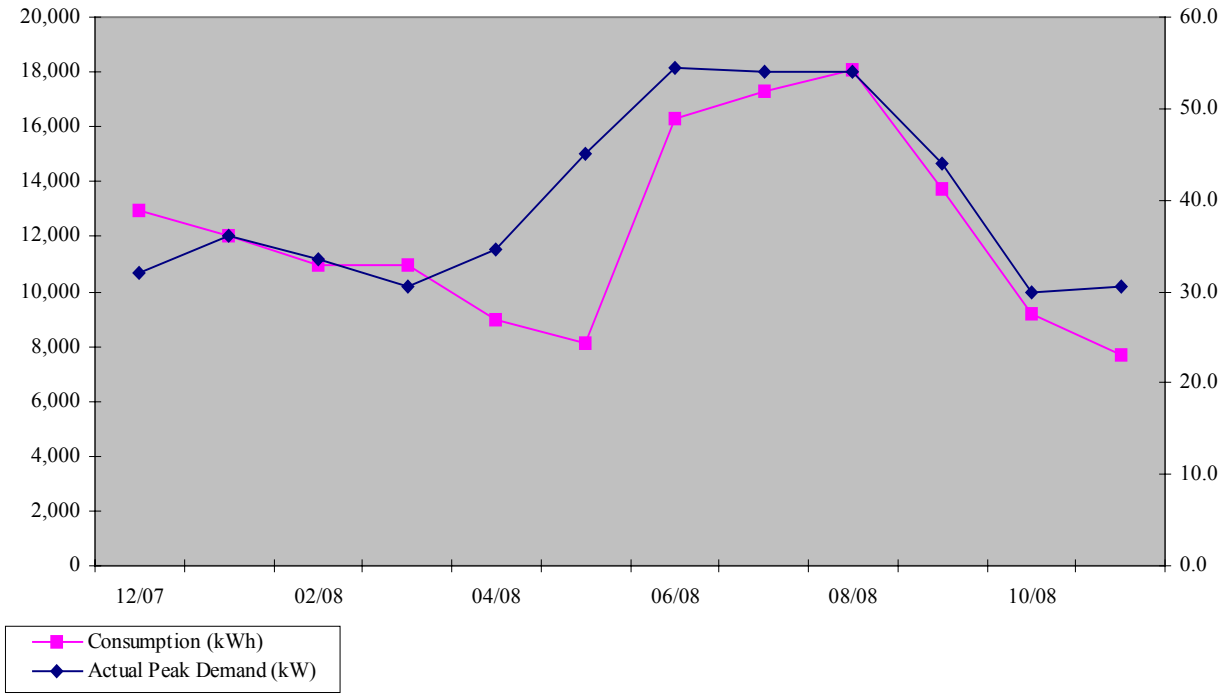
Table 3-2

3 Historical Energy Usage and Costs

Electricity Billing Data

Month of Use	Days in Month	Consumption kWh	Peak Demand		Total Bill
			Actual	Billed	
12/07	39	12,960	32.0	42.0	$2,342
01/08	28	12,040	36.0	42.0	$2,043
02/08	27	10,960	33.5	42.0	$1,858
03/08	31	10,960	30.5	42.0	$1,912
04/08	33	9,000	34.5	42.0	$1,672
05/08	24	8,120	45.0	51.0	$1,553
06/08	33	16,280	54.5	54.5	$3,106
07/08	28	17,320	54.0	54.0	$3,162
08/08	35	18,080	54.0	54.0	$3,412
09/08	33	13,760	44.0	44.0	$2,485
10/08	30	9,160	30.0	38.0	$1,616
11/08	22	7,720	30.5	38.0	$1,322
Totals	***363***	***146,360***			***$26,483***

Figure 3-1
Electricity Usage Profile

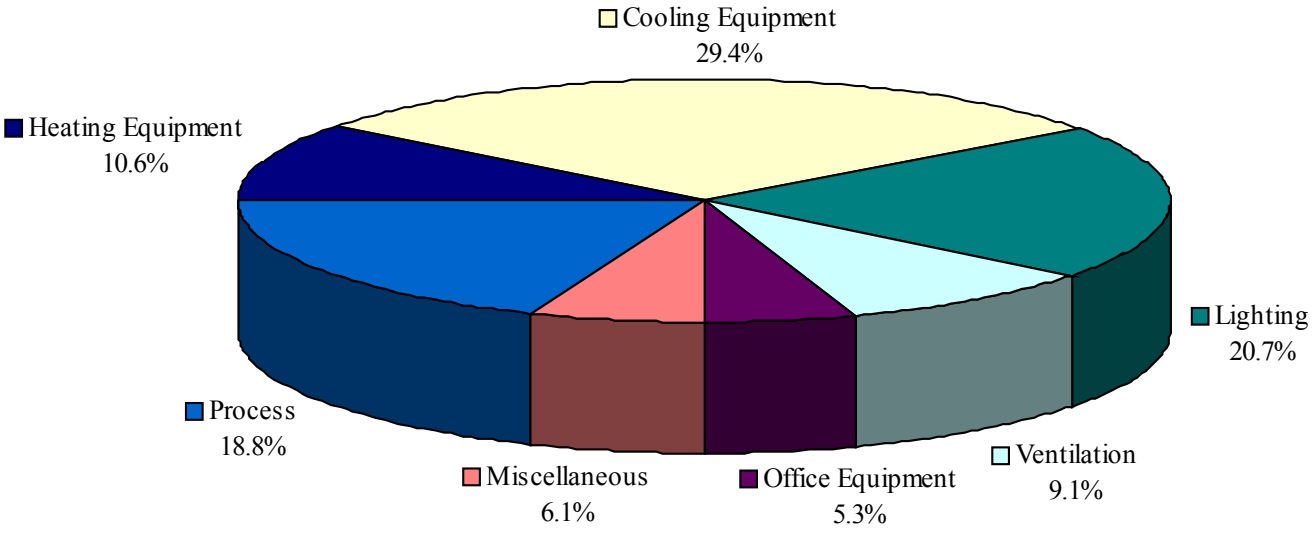


3 Historical Energy Usage and Costs

Table 3-3
Electricity End Use

End Use	Percent of Total
Heating Equipment	10.6%
Cooling Equipment	29.4%
Lighting	20.7%
Ventilation	9.1%
Office Equipment	5.3%
Miscellaneous	6.1%
Process	18.8%
TOTAL	100.0%

Figure 3-2
Electricity End Use



3 Historical Energy Usage and Costs

Table 3-4
Natural Gas Billing Data

Date	Days per Month	Consumption (CCF)	Total Bill
12/07	33	1,464	$2,138
1/08	31	2,506	$3,579
2/08	30	2,260	$3,356
3/08	31	1,749	$2,608
4/08	27	515	$756
5/08	30	195	$290
6/08	33	191	$224
7/08	28	147	$74
8/08	35	185	$92
9/08	23	128	$63
10/08	34	383	$168
11/08	28	1,116	$442
Totals	***363***	***10,839***	***$13,790***

Figure 3-3 Natural Gas Usage Profile

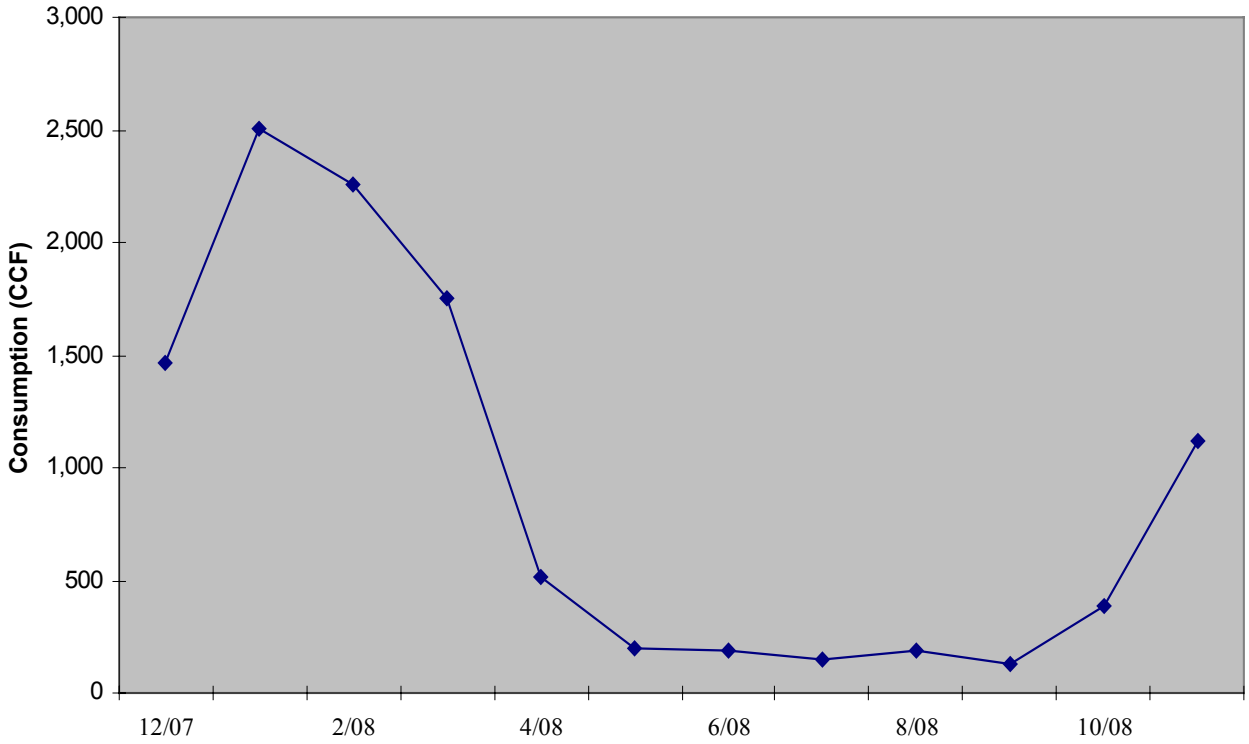
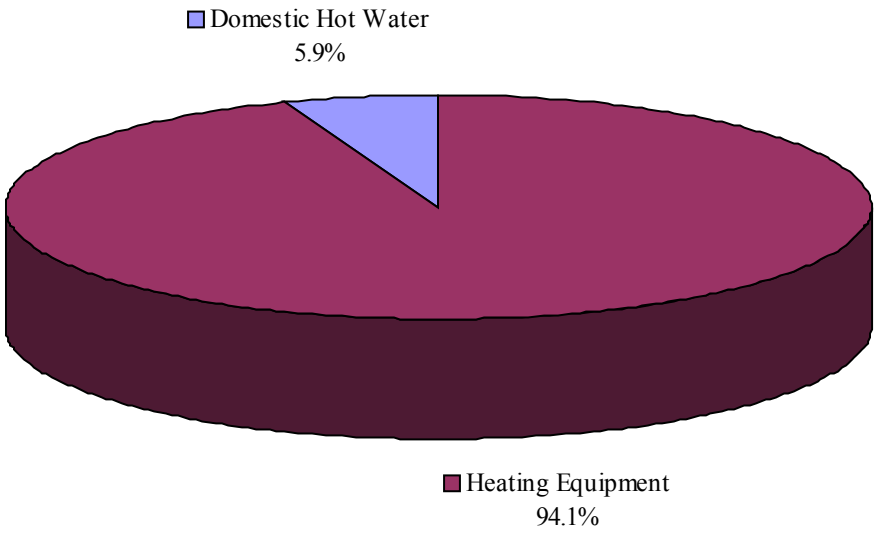


Table 3-5
Natural Gas End Use

End Use	Percent of Total
Heating Equipment	94.1%
Domestic Hot Water	5.9%
TOTAL	100%

Figure 3-4
Natural Gas End Use



4 Equipment Inventory

Building Characteristics

Facility Name:	Deer Park Schools Memorial School
Total Square Footage:	13,500
Building Type:	School Support Services

Building Construction						
Description	**Age (yrs)**	**Wall Type**	**Wall Insulation**	**Roof Type**	**Roof Insulation**	**Window Type**
Former School with large amount of window area.	50	Steel panels and windows	Minimal	Flat	Minimum	Single Pane Jalousie type

A relatively high percentage of wall construction consists of steel panels with single pane jalousie windows. If window replacement is evaluated, it may be better to replace the entire wall section and install fewer windows.

Equipment Inventory

Equipment denoted by an asterisk indicates an estimate of the equipment ratings due to equipment inaccessibility, worn nameplates, or a lack of nameplates. The Miscellaneous Equipment table ends with a column that shows that line's contribution to the total respective fuel bill (electricity, gas, oil, etc.)

Heating Equipment				
Description	**Qty**	**Capacity**	**Fuel**	**Age (yrs)**
Sterling Rooftop Unit	1	350 MBH	gas	15
York Rooftop Unit #1	1	500 MBH	gas	10

Cooling Equipment			
Description	**Qty**	**Capacity**	**Age (years)**
York Rooftop Unit #1	1	15 Tons	10
Shop Areas	4	2 Tons	10
Publications	3	1.5 Tons	10
Publications	2	1 Tons	10

4 Equipment Inventory

Ventilation Equipment				
Description	**Qty**	**Capacity**	**Hrs/Wk Winter**	**Hrs/Wk Summer**
Sterling Rooftop Unit	1	2 HP	100	
York Rooftop Unit #1	1	1.5 HP	100	168
Exhaust Fan	1	0.25 HP	168	168

Domestic Hot Water Systems			
Description	**Qty**	**Capacity**	**Fuel**
Water Heater	1	75 MBH	gas

Miscellaneous Equipment						
Description	**Qty**	**Capacity**	**Fuel**	**Hrs/Wk Usage**	**% Fuel Usage**	**End-Use**
Miscellaneous Load	1	2 kW	elec	70	5.0%	Miscellaneous
Publications Plate Maker	1	1.4 kW	elec	15	0.8%	Process
Publications Press	1	3 kW	elec	35	3.7%	Process
Publications Folding Machine	1	1.5 kW	elec	30	1.6%	Process
Publications Collator	1	2 kW	elec	30	2.1%	Process
Publications Cutter	1	1 kW	elec	3	0.1%	Process
Publications Copier	1	1 kW	elec	35	1.2%	Process
Envelope Machine	2	1 kW	elec	30	2.1%	Process
Misc Publications Loads	1	2 kW	elec	40	2.8%	Process
Computers	12	0.15 kW	elec	70	4.5%	Office Equipment
Copiers- Office	4	0.4 kW	elec	10	0.6%	Office Equipment
Laser Printer	2	0.2 kW	elec	15	0.2%	Office Equipment
Miscellaneous Shop tools	6	1 kW	elec	20	4.3%	Process
Refrigerators	2	0.4 kW	elec	40	1.1%	Miscellaneous

4 Equipment Inventory

The second to the last column of the Miscellaneous Equipment Table shows the percentage of the total fuel usage (electricity, natural gas, or fuel oil) which corresponds with the pie charts on the previous pages. The "Hrs/Wk Usage" column values include the equipment load factor and duty cycling (i.e. an air compressor running at 80% capacity and cycling on 30% of the time during a 60 hour week would have an "Hrs/Wk Usage" value of 60*0.08*0.30 = 14 Hrs/Wk).

Lighting Equipment			
Line #	**Area**	**Description**	**Hrs/Wk Usage**
1	Exits	2 exit sign fixtures, each using LED technology.	168
2	Building & Grounds Office	9 recessed paracube 2X4 fixtures, each using 3,4' T8 lamps and electronic ballasts.	75
3	Maintenance Supervisor	9 recessed paracube 2X4 fixtures, each using 2, 4' T8 lamps and electronic ballasts.	75
4	Admin Assistant	3 recessed paracube 2X4 fixtures, each using 2, 4' T8 lamps and electronic ballasts.	50
5	Admin Assistant	1 surface-mounted wrap 1X4 fixture using 3,4' T8 lamps and electronic ballasts.	50
6	Storeroom	2 recessed paracube 2X4 fixtures, each using 2, 4' T8 lamps and electronic ballasts.	15
7	Security Room	8 recessed paracube 2X4 fixtures, each using 2, 4' T8 lamps and electronic ballasts.	50
8	Halls	22 surface-mounted wrap 1X4 fixtures, each using 2, 4' T8 lamps and electronic ballasts.	80
9	Large Storeroom	18 surface-mounted fixtures, each using 2, 4' T8 lamps and electronic ballasts.	10
10	Maintenance Office	9 recessed paracube 2X4 fixtures, each using 2, 4' T8 lamps and electronic ballasts.	45
11	Publications Office	4 surface-mounted wrap 1X4 fixtures, each using 2, 4' T8 lamps and electronic ballasts.	70
12	Publications Room	27 surface-mounted wrap 1X4 fixtures, each using 2, 4' T8 lamps and electronic ballasts.	60
13	Storeroom near Boiler Room	6 surface-mounted wrap 1X4 fixtures, each using 2, 4' T8 lamps and electronic ballasts.	5
14	Boiler Room	3 pendant-mounted lensed 1X4 fixtures, each using 4, 4' energy-efficient lamps and ballasts.	10

4 Equipment Inventory

Lighting Equipment			
Line #	**Area**	**Description**	**Hrs/Wk Usage**
15	Rest Rooms	6 surface-mounted wrap 1X4 fixtures, each using 2, 4' T8 lamps and electronic ballasts.	50
16	Rest Rooms	2 round fixtures, each using 2, 60-Watt, incandescent lamps.	50
17	Grounds Office	8 surface-mounted wrap 1X4 fixtures, each using 2, 4' T8 lamps and electronic ballasts.	50
18	Maintenance Shop	23 surface-mounted wrap 1X4 fixtures, each using 2, 4' T8 lamps and electronic ballasts.	50
19	Maintenance Shop	2 porcelain lampholder fixtures, each using 23-Watt, compact fluorescent, screw-in lamps .	50
23	Exterior	7 wall-mounted fixtures, each using 100-Watt high pressure sodium lamps.	85

5 Methodology

The first step in the energy analysis is the site survey. The auditor walks your entire site to inventory the building envelope (roof, windows, etc.), the heating, ventilation, and air conditioning equipment (HVAC), the lighting equipment, other facility-specific equipment, and to gain an understanding of how each facility is used.

The collected data is then processed with a software package from The Daylight Savings Company in Goshen, NY (1-800-337-2192) that calculates the anticipated energy usage. The actual energy usage is entered directly from your utility bills. The anticipated energy usage is compared to the actual usage. If necessary, corrections are made to the site-collected data until the anticipated energy usage matches the actual usage. This process develops an end-use baseline for all of the fuels used at the facility. The baseline is used to calculate the energy savings for the measures that are recommended in this report.

The savings in this report are not duplicative. The savings for each recommendation may actually be higher if the individual recommendations were installed instead of the entire project. For example, the lighting module calculates the change in wattage and multiplies it by the new operating hours instead of the existing operating hours (if there was a change in the hours at all). The lighting controls module calculates the change in hours and multiplies it by the new system wattage instead of the existing wattage. Therefore, if you chose to install the recommended lighting system but not the lighting controls, the savings achieved with the new lighting system would actually be higher because there would have been no reduction in the hours of use.

The same principal follows for heating, cooling, and temperature recommendations - even with fuel switching. If there are recommendations to change the temperature settings to reduce fuel use, then the savings for the heating/cooling equipment recommendations are reduced, as well.

Our thermal module calculates the savings for temperature reductions using ASHRAE's modified bin method. The savings are calculated in "output" values –meaning energy, not fuel savings. To show fuel savings we multiply the energy values times the fuel conversion factor (these factors are different for electricity, natural gas, fuel oil, etc.) and also take into account the heating/cooling equipment efficiency. The temperature recommendation savings are lower when the heating/cooling equipment is more efficient or is using a cheaper fuel. Also, you may see natural gas savings in this report even if you do not currently have natural gas. This happens when fuel switching was recommended for your heating/cooling equipment and you have temperature reduction recommendations, as well.

Thermal recommendations (insulation, windows, pipe insulation etc.) are evaluated by taking the difference in the thermal load due to reduced heat transfer. Again, the "thermal load" is the thermal load after the other recommendations have been accounted for.
Lastly, installation costs are then applied to each recommendation and simple paybacks are calculated. Costs are derived from Means Cost Data, other industry publications, and local contractors and suppliers.

Line # - Area	Action	Material Cost	Labor Cost	Total Cost	Annual Savings	Payback	Rebate Each*	Total Rebate*	Cost After Rebate	Payback After Rebate
16 - Rest Rooms	For the existing 2 round fixtures, each using 2, 60-Watt, incandescent lamps, retrofit with 15-Watt compact fluorescent screw-in lamps. (New qty: 4)	$72	$20	$92	$80	1.2 years			$92	1.2 years

***Important Note**: Rebates are subject to caps, changes and eligibility requirements. In addition, there may be other rebates that apply. Prior to purchasing any equipment you must contact your LIPA representative or the audit program administrator, John Pratnicki, at 631-755-5390 for assistance in the pre-approval process and in determining your potential rebate amount.

Long Island Power Authority – Summary Energy Audit Report for:

Deer Park Schools Memorial School

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Site:
Deer Park Schools Memorial School
41 Homer Ave
Deer Park, NY 11729

LIPA main account number:
724-12-5795-17

Facility contact person: Kirk Gostkowski
Facility contact phone #: 631-274-4080

Annual Energy Costs:

Electricity	$26,483
Natural Gas	$13,790
Total	$40,273

Description	Potential Rebate*	Cost After Rebate	Annual Savings	Payback with Rebate	% of Annual Energy Cost
Upgrade the Lighting		$92	$80	1.2 years	0.2%
Install Lighting Controls	$35	$145	$73	2.0 years	0.2%
Improve Temperature Control	$100	$360	$3,862	0.1 years	9.6%
Upgrade the HVAC		$910	$687	1.3 years	1.7%
Totals	**$135**	**$1,507**	**$4,702**	**0.3 years**	**11.7%**

* **NOTE**: Rebates are subject to caps, changes and eligibility requirements. Contact your LIPA representative or the audit program administrator, John Pratnicki at (631) 755-5390 for assistance in determining your potential rebate amount.

Recommendation Highlights:

- Install new lighting products to increase the efficiency of your lighting fixtures.
- Install lighting controls in certain areas of your facility to reduce lighting use during unoccupied periods.
- Modify your temperature setpoints to reduce the energy use associated with heating and/or cooling your facility.
- Install new heating, ventilation, or air conditioning products to reduce the amount of energy required to condition your indoor environment.