Energy Audits:

Central Falls School District

Central Falls, RI 02863

Energy Audit Sponsored by:

Northeast Energy Efficiency Partnerships
And
Rhode Island State Energy Office

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Disclaimer

The information contained within this report is based upon a walk-through assessment of the facility on the date of the audit. I have based my findings and suggestions on what I observed at the time, data I was provided with, studies performed by potential vendors, and in some cases what was provided to me anecdotally. The suggested courses of action are my opinion and in no way am I guaranteeing energy savings, installation, or performance.

Section 1 - Executive Summary

1.1 Introduction

This report details the recommendations and conclusions of energy audits conducted at seven Central Falls School District schools and the administration building. The initial site visit was conducted on May 18, 2006 and subsequent audits were conducted on a weekly basis until the final school was visited on June 26, 2006. During this time, Alan R Mulak P.E., an independent consulting engineer representing Northeast Energy Efficiency Partnerships and the Rhode Island Department of Education, met with Frank Knot, Supervisor of Buildings, Grounds, and Transportation and Richard Currier, Maintenance Supervisor.

This study breaks out each facility separately and all are contained within. Each section includes recommendations for Energy Conservation Measures (ECM) addressing the electric, gas and oil usage in the facilities. Details of the findings and recommendations are contained in their respective sections of this report.

A summary table showing energy savings, cost savings, implementation costs, and simple payback period for the recommended energy conservation measure considered is shown in the four sections that follow. Equipment specifications also known as “cut sheets” on recommended technologies have been included in the appendix. The cut sheets are included to offer an idea of the type of technology recommend…not the specific product.

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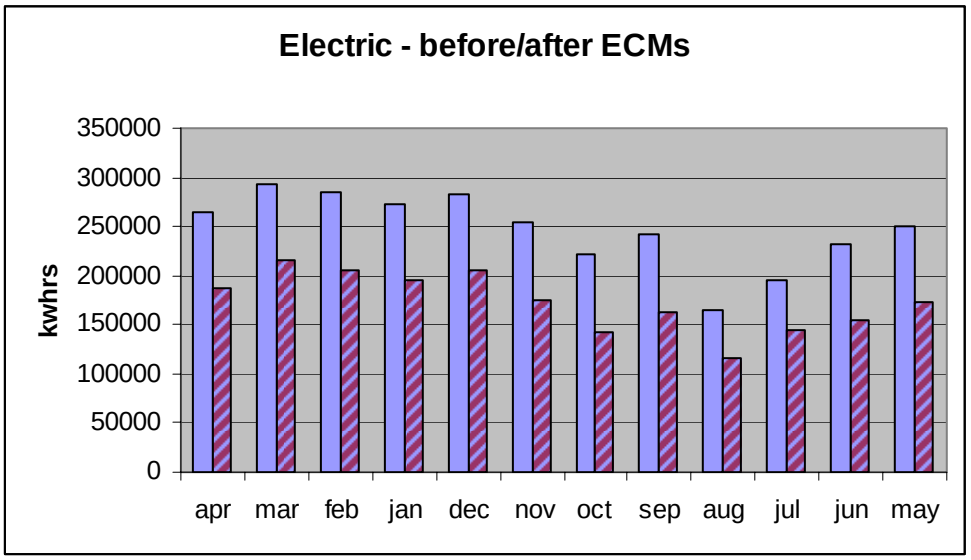
1.2 Recommended Energy Conservation Measures (ECMs)

The following table lists the recommended ECMs for all facilities and summarizes measures at the bottom of the table. A brief description of the measures is contained in the following paragraphs of this section.

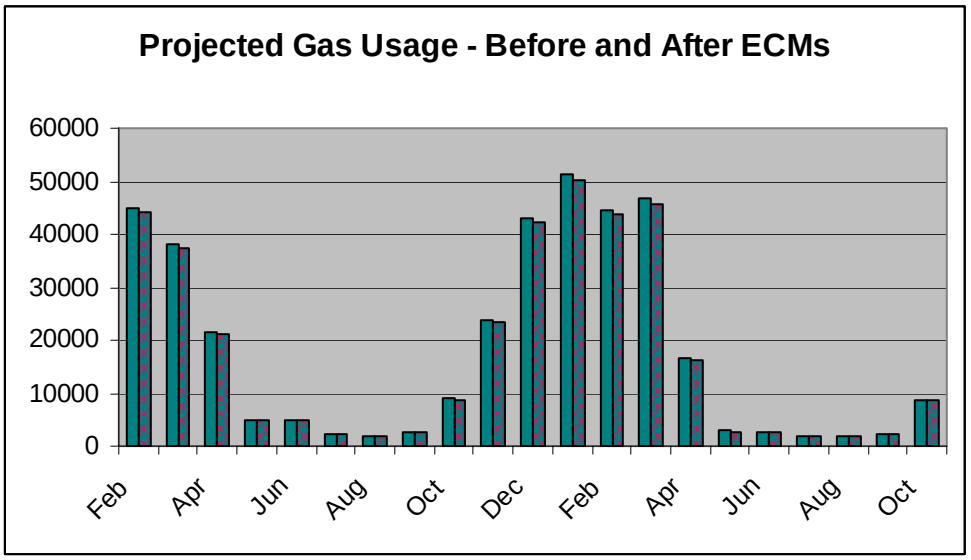
Table 1: Summary of Recommended Energy Efficiency Measures

Measure	Annual Energy Savings (kwhr)	Demand Savings (KW)	Gas Savings (Therms)	Oil Savings (gallons)	Installed cost	Annual Cost Savings	Utility Rebate	Simple Payback (years)
ECM-1: Upgrade Lighting	194969	74	0	0	$127,060	$ 31,204	$ 98,468	0.9
ECM-2: Occupancy Sensors	142597	0	0	0	$ 27,720	$ 22,815	$ 22,176	0.2
ECM-3: Vendor Misers	30172	0	0	0	$ 3,800	$ 4,828	$ 3,040	0.2
ECM-4: Programmable / Setback T'stats	0	0	24969	890	$ 34,750	$ 39,099	$ -	0.9
ECM-5: Boiler in Feinstein	0	0	-4953	9335	$ 50,000	$ 1,906	$ -	26.2
ECM-6: RTUs on roof of High School	506000	253	-1000	0	$173,000	$ 79,213	$ 2,870	2.1
ECM-6: Cooler / Freezer Economizers	5000	0	0	0	$ 6,000	$ 800	$ 4,800	1.5
ECM-7: Electric Motors	4422	0	0	0	$ 950	$ 708	$ 314	0.9
ECM-8: Tankless Water Heaters	0	0	2163	178	$ 9,600	$ 3,574	$ -	2.7
Totals	883160	327	21179	10402	$432,880	$184,145	$131,668	1.6

The following tables graphically indicate the projected savings in energy and demand if all the ECMs are installed:



Annually, this would be an estimated 30% savings in electric energy.



Annually, this would be an estimated 11% savings in gas usage.

At the summary level, the energy saving recommendations for all facilities are as follows:

1. Computerized Operation and Maintenance and PM System.

   The existing system needs to be fully populated and utilized. A PM system would capture all maintenance tasks from the details of routine daily cleaning to schedule overhauls of major HVAC equipment. The O&M portion of an automated system would keep track of tasks, products, special notes, and other pertinent data needed to maximize efficiency and productivity. One automated system to examine is produced by www.schooldude.com/. This easy to use system, originally designed for use by school building operators, has expanded to service all types of facilities, included municipal buildings. It has components connecting all major components of O&M and is recommended for consideration. Typically, the major components of a PM system would contain features such as:

   - Maintenance work order issuance and tracking on a regular schedule. Details of routine maintenance would be listed on daily work orders. Items such as cleaning, proper handling of potentially hazardous cleaning materials, checking operation of vent fans, replacing burn-out lamps and ballast, etc would all be included in any PM system chosen.
   - Inventory verification/update re the scheduling of work orders. Updated parts, costs, and material lists would be added to and maintained on the PM system. Inventory would be maintained by automatically issuing reorder slips for items used.
   - Provides "reminder" services via coordination with existing calendars. This generally operates off "run-time" set points which yield work orders for equipment after a given number of run hours. These set points are available from the equipment specifications and tracked by completed work orders.
   - Coordinates with existing maintenance/payroll/inventory control formats. All PM systems connect to purchasing, accounting, and payroll.
   - Reminders to service steam traps, filters, and seasonal maintenance. All PM systems have a module for seasonal work such as storm window maintenance, cooling and heating system "tune-ups and check-ups," filter changes, etc.

   Benefits from a PM system would include:
   - Elimination of reliance upon one source of direction.
   - Ease of tracking total PM costs by building component system
   - Extends the life of equipment and building assets
   - Improves building comfort
   - Reduces the O&M costs (vs. not performing PM tasks)
   - An excellent memory!

   It takes at least two full years to create a useful, populated data base of PMs for an O&M staff to utilize. The time to start is ASAP.

2. T8 Lamps with Electronic Ballasts.

Fluorescent lighting has improved over time. Switching from standard T12 (1-1/2 inch diameter) fluorescent tubes with magnetic ballasts to thinner T8 tubes with electronic ballasts will save over 40 percent in electricity usage. Ballasts are an essential part of fluorescent lamps. Magnetic ballasts are now being phased out in favor of more energy-efficient electronic ballasts Electronic ballasts have different starting characteristics depending on the specific use. These include rapid start, instant start, and program start varieties. Rebates from Narragansett Electric Company (NGRID) may be available for selected equipment with pre-approved applications.

3. Install T5 "High Bay" Fixtures.

In the gymnasiums of many schools, replace the existing Metal Halide fixtures with T-5, High Output lamps and appropriate ballasts as shown at right. This is new technology and the benefits of T-5s over traditional HID fixtures are well documented. In addition to the energy savings, the improvement in light quality will be significant. In several locations (Memorial Intermediate School being the worst case), existing Metal Halide lamps are nearing the end of their life and have faded to roughly 65% of their original light output. Along with the T5 fixtures, a ceiling mounted occupancy sensor is an absolute must and will essentially double the energy savings. Rebates from Narragansett Electric Company (NGRID) may be available for selected equipment with pre-approved applications.

4. Occupancy Sensors.

All classrooms, rest rooms, and offices should have an occupancy sensor similar to the one shown at right. These are proven energy savers. There are a number of varieties and manufacturers of these devices but the most important criteria should be two sources of detection – IR and UV – which most quality devices employ.

Rebates from Narragansett Electric Company (NGRID) may be available for selected equipment with pre-approved applications.

5. Controls for vending machines.

Vending machine controls power down vending machines when the area surrounding it is unoccupied and automatically re-powers the vending machine when the area is reoccupied. Additionally, these controls monitor the ambient temperature while the vending machine is powered down. Using this information, these controls automatically power up the vending machine at appropriate intervals, independent of occupancy, to ensure that the vended product stays cold.

These inexpensive devices should be installed on all vending machines.

Rebates from Narragansett Electric Company (NGRID) may be available for selected equipment with pre-approved applications.

6. Cooler and Freezer Economizers.

The recommended walk in cooler and freezer economizers regulates the speed of the evaporator fan motors to meet the exact needs of the refrigeration cycle and runs the fans at full speed only as needed. This lowers energy costs and extends the life of the perishables and the equipment. Further, there is a system add-on which utilizes outdoor air when the winter temperatures are equal to those required for safe food storage. This add-on would be particularly beneficial for any coolers adjacent to exterior walls. These systems should be installed in all walk-in cooler / freezer equipment.

Rebates from Narragansett Electric Company (NGRID) may be available for selected equipment with pre-approved applications.

7. Replace Incandescent Bulbs with Compact Fluorescent Bulbs.

Throughout all facilities, traditional and ceiling mounted "spot" light incandescent fixtures and bulbs are everywhere. These generally range from 120 to 65 watt incandescent. All these lamps are inefficient, short-lived resulting in undue labor expenses, and generate an excessive amount of heat causing the cooling and ventilation systems to work harder than necessary. All of these problems add up to "very expensive." Compact fluorescent lamps (CFLs) have evolved to a level where they are warm in color, are dimmable, use about ¼ the energy, give off ¼ of the heat given off by incandescent, and last 28 times longer, greatly reducing labor and maintenance.

Rebates are not available for screw in CFLs.

8. Premium Efficiency Motors.

Virtually all of the electric motors currently in use are of standard efficiency. Premium efficiency motors are generally 5 to 10% more efficiency which results in a significant reduction in electric expenses. Motors such as those on the boiler circulation pumps which are 81% efficient run about 3000 hours per year. The cost of replacement with premium efficiency motors will be realized in energy savings in roughly two years.

Rebates from Narragansett Electric Company (NGRID) may be available for selected equipment with pre-approved applications.

Note: the greatest savings from this ECO will be realized when existing motors are replaced upon burnout, not via wholesale replacement.

9. Programmable Setback Thermostats.

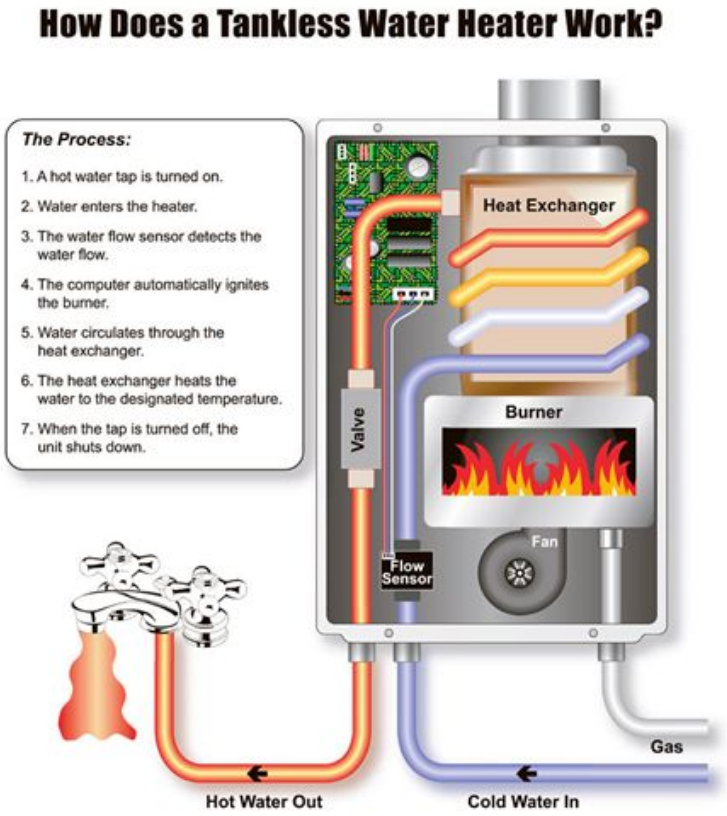
There is an Energy Management System in place at the High School but it is reported to be under utilized. For the balance of the facilities, the only significant energy controls in place are the facility operators. Heating, cooling, ventilation, and lighting are all operating without automatic controls. This practice becomes problematic and expensive when systems are inadvertently left "on" during "off" time periods. Frequently in facilities without automated controls, exhaust fans, heating and cooling devices, and other equipment are not controlled and run 24/7 even during periods when they could be turned off. Even a simple EMS will eliminate this uncontrolled practice.

Rebates from Narragansett Electric Company (NGRID) may be available for selected equipment with pre-approved applications.

10. Tankless Hot Water Heaters

Replace existing hot water heaters with tankless DHW units. Installing a tankless water heater would eliminate the need to keep the existing electric hot water tanks "on" 24/7. These economical devices would easily handle the domestic hot water needs of the facility.

A popular product, the Rinnai Continuum is up to 50 percent more energy efficient than a traditional natural gas water heater and up to 70 percent more efficient than an electric water heater. Unlike antiquated hot water tanks that heat and reheat the same water 24 hours a day, these products utilize on-demand water heater technology which is more efficient because it only heats water when it is needed. When a hot water source is opened, these products sense the demand and start delivering continuous hot water. When the hot water source is closed, the tankless water heating unit shuts off. That means no more heating water when you don't need to.



Note: the greatest savings from this ECO will be realized when the existing electric hot water heaters are replaced at the end of their useful life, not via wholesale replacement.

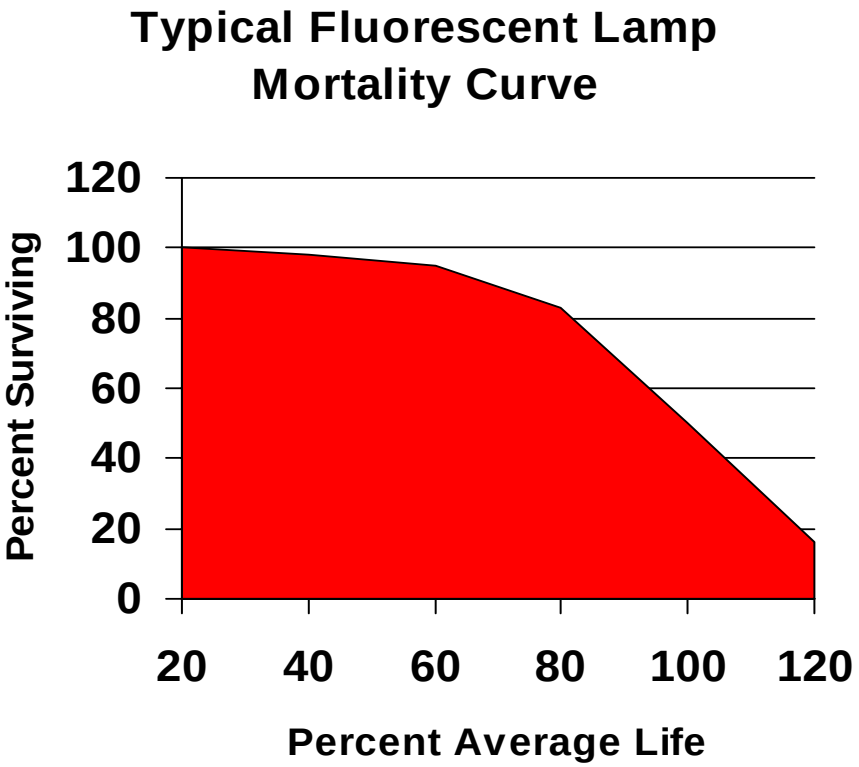
Currently, the gas company does not offer rebates.

11. Lighting “group” relamping

In 2007, the existing lighting throughout many of the facilities that were relamped with T8s five years ago will have passed the critical 75% point of the rated life.

Studies have demonstrated the economic wisdom of conducting a group relamping at this point, thus avoiding increased labor expenses involved with changing random burnouts of ever increasing frequency after the 75% point.

See the graph below.



All CFLs should also be changed at the same time. The recommended replacement lamp/ballast would be a “super” T8.

Rebates from Narragansett Electric Company (NGRID) may be available for selected equipment with pre-approved applications.

12. BOC training for O&M staff.

The Building Operator Certification training program is perfect for hands-on facility operators. It is offered in Rhode Island infrequently but somewhere in Southern New England every year. Central Falls facility operators would gain a great deal of practical knowledge by attending plus would be provided with valuable resources for more efficient facility operations. It can be offered on site and modified for regional issues if the minimum number of students sign up, extending invitations to surrounding communities. More details can be found on the Northeast Energy Efficiency Partnership (NEEP) website at www.neep.org.

Without modifications or customization, the basic course consists of eight full days of training on the following topics:

- **101 - Building Overview**
- **102 – Energy Conservation**
- **103a – HVAC Systems**
- **103b – HVAC Controls**
- **104 – Lighting**
- **106 – Indoor Air Quality**
- **107 – Electrical systems**
- **111 – Energy Management Planning**

In the past, Narragansett Electric Company (NGRID) provided some support for this training program.

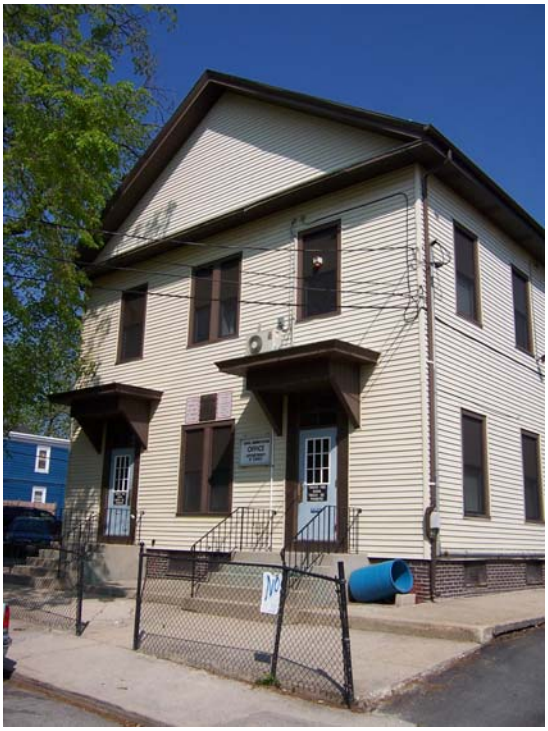
13. Full Condensing Boilers

Currently, a variety of gas and oil fired boilers serve the schools in Central Falls. The aging oil fired boiler in Feinstein School shown at right should be replaced ASAP. Other boilers are almost new and others and somewhere in between. At the end of their useful lives, all boilers should be replaced with full condensing hydronic gas fired models. Boilers manufactorered and sold by Viessmann or Buderus are recommended.

Currently, the gas company does not offer rebates.

Section 2 – Energy Conservation Measures by Facility

2.1 Administration Building, 21 Hedley Avenue



Date of energy audit: May 18, 2006

This two story wood frame building houses the administrators of the Central Falls School District. From an energy standpoint, it operates from 7 to 6, 50 weeks per year. Heat and hot water are provided by the same boiler…a Weil McClain #582 located in the basement. The doors and windows are efficient and in excellent condition. There is minimal insulation in the attic and the roof leaks. Otherwise, the building is in excellent shape. Lighting is primarily T8s and exits are LED. There are 7 window mounted AC units.

There are no automated controls of lighting, heat, or AC.

Recommended ECMs:

1. Super T8 retrofit replacing remaining T12s.
2. Replace incandescent ceiling fixtures with HWCFLs.
3. Install occupancy sensors in all offices and restrooms.
4. Install Vendor Mizers or equivalent on vending machine.
5. Install tankless gas fired DHW heater, thus replacing boiler generated DHW system. This would require gas service to be brought into the building.
6. Replace existing Honeywell thermostats with programmable, setback T'stats.

Suggested Energy Conservation Opportunities (ECOs) for future consideration:

1. Repair roof then install adequate ventilation, then bring attic insulation up to code (R-38).
2. Replace aging boiler with full condensing, HE gas fired boiler.
3. In one year, perform a group relamping of all T8 lamps/ballasts wherein Super T8s are installed.

Scope: The specified lighting is obsolete & inefficient.

	Count	Total Est. Cost $	Energy Savings kwhr	Demand Savings KW	Annual Savings $	Utility Rebate $	Simple Payback (years)
1. Replace existing T12s with T8 systems.	13	$ 1,465.00	1703	1	$ 272.53	$ 1,172.00	1.1
2. Replace existing incandescent bulbs/fixtures with HWCFLs/fixtures.	4	$ 300	781	0.3	$ 125	$ 240	0.5
Totals:		**$ 1,765**	**2484**	**1**	**$ 398**	**$ 1,412**	**0.9**

Description: There are no lighting controls in the facility.

Recommendation: Install switch mounted occupancy sensors in all infrequently used rooms.

	Count	Total Est Cost $	Energy Savings kwhr	Annual Savings $	Utility Rebate $	Simple Payback (years)
Install switch mounted, dual function occupancy sensors in specified areas.	8	$ 110.00	1561	$ 249.79	$ 88.00	0.1
Totals	**8**	**$ 110.00**	**1561**	**$ 249.79**	**$ 88.00**	**0.1**

Description: There are no controls on vending machines.

Recommendation: Install Vendor Miser

	Count	Total Est Cost $	Energy Savings kwhr	Est. Annual Savings $	Utility Rebate $	Simple Payback (years)
	1	$200.00	1588	$254.00	$160.00	0.2
Totals	**1**	**$200.00**	**1588**	**$254.00**	**$160.00**	**0.2**

Description:	The existing policy of generating DHW from the boiler is inefficient, especially in non-heating months.
Recommendation:	Install tankless DHW heater

	Count	Total Est Cost $	Energy Savings gallons	Annual Savings $	Utility Rebate $	Simple Payback (years)
	1	$900.00	63	$ 117.03	$0.00	7.7
Totals	**1**	**$900.00**	**63**	**$117.03**	**$0.00**	**7.7**

Description:	The existing thermostats are not programmable nor can they be setback.
Recommendation:	Install SB/P t'stats

	Count	Total Est Cost $	Energy Savings gallons	Annual Savings $	Utility Rebate $	Simple Payback (years)
	4	$1,000.00	316	$ 585.16	$0.00	1.7
Totals	**4**	**$1,000.00**	**316**	**$585.16**	**$0.00**	**1.7**

2.2 Central Falls High School, 24 Summer Street

Date of energy audit: May 18, 2006

This three story brick and block building houses the High School of the Central Falls School District. From an energy standpoint, it operates from 6a to 10p during the school year and 7a-4p during the summer.

The building is essentially two facilities, the old section of 1929 vintage and the "new" section, built in 1974. There is an EMS which offers some degree of control for HVAC. Due to actuator failures, some of the controls have been over ridden. Heat and hot water are provided by a variety of sources. In the new section, electric unit ventilators heat the perimeter of the building while ancient RTUs handle the center or core areas. These RTUs are failing and need to be replaced. Hot water comes from the gym penthouse where two 20 year old Lockvar gas fired boilers generate hot water. Additionally, the kitchen (very new) has its own DHW boiler. For the old section, heat is steam heat generated via two boilers in the basement. A separate DHW tank is in the same area. The doors and windows are in reasonable shape. Lighting is primarily T8s and exits are LED. The gym and library are illuminated via metal halide sources. The Auditorium is lit by 300w incandescent bulbs.

There are no automated controls of lighting in the facility.

Recommended ECMs:

1. Remove existing 23 Nisbett electric unit ventilators (shown at right). Recommend the installation of ductwork in the ceiling connecting to the two new RTUs on the roof, over the core classrooms. This ductwork will provide heat and ventilation.
2. Provide controls for the HVAC in the perimeter classrooms, replacing existing T'stats.
3. Replace existing 2 RTUs which serve the core of the facility with HE RTUs. **Further study is required to properly size this equipment**. This is far more than an energy project. The need for ventilation in this space is severe. Further, these RTUs should be able to provide heat and ventilation for the 23 perimeter classrooms as well. There may be rebate and grant funding available for this project.
4. Replace incandescent bulbs in auditorium with CFLs. These CFLs must be dimmable.
5. Replace gym HID fixtures with T5HOs and controls.
6. Install occupancy sensors in all offices, classrooms, and restrooms.
7. Install Vendor Mizers or equivalent on vending machines.
8. Install tankless gas fired DHW heaters in all bathrooms and locker rooms, thus replacing existing boilers and electric hot water tanks.
9. Install economizers in walk in coolers and freezers.

Suggested Energy Conservation Opportunities (ECOs) for future consideration:

1. In one year, perform a group relamping of all T8 lamps/ballasts wherein Super T8s are installed.
2. With the group relamping, retrofit the remaining T12s scattered about the HS to Super T8s.

Description:	See below
Recommendation:	See below

	Count	Total Est Cost $	Energy Savings kwhr	Demand Savings KW	Annual Savings $	Utility Rebate $	Simple Payback (years)
RTUs	2	$120,000.00	0	0	$ (1,750.00)	$0.00	-68.6
Ductwork		$30,000.00	0	0	$ -	$0.00	0.0
Removal of U.V.s		$23,000.00	506000	253	$80,962.53	$2,870.00	0.2
Totals	**2**	**$173,000.00**	**506000**	**253**	**$79,212.53**	**$2,870.00**	**2.1**

Description:	The existing two RTUs servings the core classrooms are obsolete and in an advanced state of disrepair. Further, they do not provide adequate ventilation. The existing 23 Nesbitt unit heat/ventilators in the perimeter classrooms are in disrepair, spare parts are not available, and are expensive to operate.
Recommendation:	Replace with High Efficiency HVAC units. Size large enough to provide heat and ventilation to the perimeter classrooms as well. Provide ductwork to perimeter classrooms. Remove old RTUs and 23 Nesbitt unit heat/ventilators

Scope: The specified lighting is obsolete and inefficient.

	Count	Total Est. Cost $	Energy Savings kwhr	Demand Savings KW	Annual Savings $	Utility Rebate $	Simple Payback (years)
1. Replace existing incandescent bulbs/fixtures with HWCFLs/fixtures.	18	$ 1,350	11595	4.4	$ 1,856	$ -	0.7
2. Replace Gym HIDs with T5HOs	24	$ 14,400	14003	5.3	$ 2,241	$ 11,520	1.3
Totals:		**$ 15,750**	**25597**	**10**	**$ 4,097**	**$ 11,520**	**1.0**

Description:	There are no lighting controls in the facility.					
Recommendation:	Install switch mounted occupancy sensors in all classrooms and offices.					
	Count	Total Est Cost $	Energy Savings kwhr	Annual Savings $	Utility Rebate $	Simple Payback (years)
Install switch mounted, dual function occupancy sensors in specified areas.						
	63	$ 6,930.00	22353	$ 3,576.55	$5,544.00	0.4
Totals	**63**	**$ 6,930.00**	**22353**	**$ 3,576.55**	**$5,544.00**	**0.4**

Description:	There are no controls on vending machines.					
Recommendation:	Install Vendor Miser					
	Count	Total Est Cost $	Energy Savings kwhr	Est. Annual Savings $	Utility Rebate $	Simple Payback (years)
	6	$1,200.00	9528	$1,524.00	$960.00	0.2
Totals	**6**	**$1,200.00**	**9528**	**$1,524.00**	**$960.00**	**0.2**

Description:	All the various means of heating hot water for DHW purposes is inefficient.					
Recommendation:	Install tankless DHW heaters.					
	Count	Total Est Cost $	Energy Savings thems	Annual Savings $	Utility Rebate $	Simple Payback (years)
	6	$5,400.00	2163	$ 3,244.35	$0.00	1.7
Totals	**6**	**$5,400.00**	**2163**	**$3,244.35**	**$0.00**	**1.7**

Description:	Currently, the walk in cooler fans run continuously even though the airflow is only required about half the time.
Action:	Install controllers that slow the fans when full airflow is not needed.
Recommendation:	Install a Fansaver 4000 or equivalent.

Energy Calculations:	Count	Total Est. Cost $	Energy Savings kwhr	Annual Savings $	Utility Rebate $	Simple Payback (years)
Fansaver 4000	2	$6,000.00	5000	$ 800.00	$4,800.00	1.5
Totals		**$ 6,000**	**5000**	**$ 800**	**$ 4,800**	**1.5**

2.3 Veterans Memorial Elementary School, 150 Fuller Ave

Date of energy audit: June 12, 2006

This three story brick and block building houses the grades 1 thru 5 of the Central Falls School District. From an energy standpoint, it operates from 6a to 10p during the school year and 7a-4p during the summer.

The 63,100 square foot building is sixteen years old. Heat and hot water are provided by gas equipment, the DHW tank being relatively new. The forced hot water heat is provided by 8 Hydro-therms, 16 years old. Water is circulated by two standard efficiency Baldor motors. Three 5 ton Trane units take care of heat and ventilation for the center core areas of the building.

The doors and windows are in reasonable shape. Lighting is primarily T12's and some of the exits are LED. The gym is illuminated via metal halide sources.

There are no automated controls of lighting in the facility.

Recommended ECMs:

- Replace all fluorescent lighting with Super T8s
- Replace all HID MH lighting with T5HOs.
- Install occupancy sensors in all offices, classrooms, and restrooms.
- Install Vendor Mizers or equivalent on vending machines.
- Replace existing Honeywell thermostats with new setback T'stats

Suggested Energy Conservation Opportunities (ECOs) for future consideration:

- Upon the end of life of the existing DHW tank, install tankless gas fired DHW heaters in all bathrooms, kitchen, and other point of use areas.
- Upon burnout, replace circ pump motors with NEMA premium efficiency models.
- When the Hydro therms begin to fail, replace with full condensing gas fired boilers.
- Replace the RTUs with HE units when they fail.

Scope: The specified lighting is obsolete and inefficient.

	Count	Total Est. Cost $	Energy Savings kwhr	Demand Savings KW	Annual Savings $	Utility Rebate $	Simple Payback (years)
1. Replace existing T12s with T8 systems.	566	$ 64,395	119861	45	$ 19,183.25	$ 51,516	0.7
2. Replace existing incandescent bulbs/fixtures with HWCFLs/fixtures.	16	$ 1,200	1563	0.6	$ 250	$ -	4.8
2. Replace Gym HIDs with T5HOs	15	$ 9,000	8752	3.3	$ 1,401	$ 7,200	1.3
Totals:		**$ 74,595**	**130176**	**49**	**$ 20,834**	**$ 58,716**	**0.8**

Description: There are no lighting controls in the facility.

Recommendation: Install switch mounted occupancy sensors in all infrequently used rooms.

	Count	Total Est Cost $	Energy Savings kwhr	Annual Savings $	Utility Rebate $	Simple Payback (years)
Install switch mounted, dual function occupancy sensors in specified areas.	47	$ 5,170	31330	$ 5,012.83	$ 4,136.00	0.2
Totals	**47**	**$ 5,170**	**31330**	**$ 5,012.83**	**$ 4,136.00**	**0.2**

Description: There are no controls on vending machines.

Recommendation: Install Vendor Miser

	Count	Total Est Cost $	Energy Savings kwhr	Est. Annual Savings $	Utility Rebate $	Simple Payback (years)
	4	$800.00	6352	$1,016.00	$640.00	0.2
Totals	4	$800.00	6352	$1,016.00	$640.00	0.2

Description:	The existing thermostats are not programmable nor can they be setback.
Recommendation:	Install SB/P t'stats

	Count	Total Est Cost $	Energy Savings thems	Annual Savings $	Utility Rebate $	Simple Payback (years)
	30	$7,500.00	1835	$2,752.65	$0.00	2.7
Totals	**30**	**$7,500.00**	**1835**	**$2,752.65**	**$0.00**	**2.7**

2.4 Cowden Street School, 325 Cowden Street

Date of energy audit: June 12, 2006

This three story brick and block building houses the grades 1 thru 5 of the Central Falls School District and the Outreach and Registration offices. From an energy standpoint, it operates from 6a to 10p during the school year and 7a-4p during the summer.

The 18,700 square foot building was built in 1889 but is in good shape. Heat and hot water are provided by gas equipment, the DHW tank being relatively new. The forced hot water heat is provided a new Thermific Boiler, reported to be in excellent shape and operating very well. Water is circulated by two standard efficiency Baldor 7.5 HP motors. One 5 ton York RTU units take care of cooling and ventilation for the registration offices. The registration offices have been recently renovated with suspended T8 fixtures.

The doors and windows are in reasonable shape. Lighting is primarily T8's and some of the exits are LED. The gym is illuminated via metal halide sources.

There are no automated controls of lighting in the facility.

Recommended ECMs:

- Replace all HID MH lighting with T5HOs.
- Install occupancy sensors in all offices, classrooms, and restrooms.
- Install Vendor Mizers or equivalent on vending machines.
- Replace existing Honeywell thermostats with new setback T'stats

Suggested Energy Conservation Opportunities (ECOs) for future consideration:

- In one year, perform a group relamping of all T8 lamps/ballasts wherein Super T8s are installed.
- Upon the end of life of the existing DHW tank, install tankless gas fired DHW heaters in all bathrooms, kitchen, and other point of use areas.
- Upon burnout, replace circ pump motors with NEMA premium efficiency models.

Scope:	The specified lighting is obsolete and inefficient.						
	Count	Total Est. Cost $	Energy Savings kwhr	Demand Savings KW	Annual Savings $	Utility Rebate $	Simple Payback (years)
1. Replace existing HIDs on 3rd floor with T5HOs							
	4	$ 2,400	2334	1	$ 373.51	$ 1,920.00	1.3
2. Replace existing incandescent bulbs/fixtures with HWCFLs/fixtures.							
	19	$ 1,425	1856	0.7	$ 297	$ -	4.8
Totals:		**$ 3,825**	**4190**	**2**	**$ 671**	**$ 1,920**	**2.8**

Description:	There are no lighting controls in the facility.						
Recommendation:	Install switch mounted occupancy sensors in all infrequently used rooms.						
	Count	Total Est Cost $	Energy Savings kwhr	Annual Savings $	Utility Rebate $	Simple Payback (years)	
Install switch mounted, dual function occupancy sensors in specified areas.							
	12	$ 1,320	2112	$ 338	$ 1,056	0.8	
Totals	**12**	**$ 1,320**	**2112**	**$ 338**	**$ 1,056**	**0.8**	

Description:	There are no controls on vending machines.					
Recommendation:	Install Vendor Miser					
	Count	Total Est Cost $	Energy Savings kwhr	Est. Annual Savings $	Utility Rebate $	Simple Payback (years)
	4	$800.00	6352	$1,016.00	$640.00	0.2
Totals	**4**	**$800.00**	**6352**	**$1,016.00**	**$640.00**	**0.2**

Description:	The circ pump motors are old and inefficient						
Recommendation:	Replace upon burnout						
	Count	Total Est Cost $	Energy Savings kwhr	Demand Savings KW	Annual Savings $	Utility Rebate $	Simple Payback (years)
	2	$950.00	4422	2	$707.52	$313.50	0.9
Totals	**2**	**$950.00**	**4422**	**2**	**$707.52**	**$313.50**	**0.9**

Description:	The existing thermostats are not programmable nor can they be setback.						
Recommendation:	Install SB/P t'stats						
	Count	Total Est Cost $	Energy Savings thems		Annual Savings $	Utility Rebate $	Simple Payback (years)
	12	$3,000.00	1626		$2,438.70	$0.00	1.2
Totals	**12**	**$3,000.00**	**1626**		**$2,438.70**	**$0.00**	**1.2**

2.5 Ella Risk Elementary School, 949 Dexter Street

Date of energy audit: June 28, 2006

This three story brick and block elementary school was constructed in 1999 and is in excellent shape. From an energy standpoint, it operates from 6a to 10p during the school year and 7a-4p during the summer.

The 51,243 square foot building is heated via gas hot water. The forced hot water heat is provided via two new Thermific Boilers, reported to be in excellent shape and operating very well. Water is circulated by two standard efficiency Baldor 7.5 HP motors. There is a split system AC unit in place to provide cooling to the offices. Hot water is provided via a separate boiler and stored in a tank located in the boiler room.

The doors and windows are excellent shape. Lighting is primarily T8's and of the exits are LED. The multipurpose room is illuminated via metal halide sources.

There are no automated controls of lighting in the facility.

Recommended ECMs:

- Replace all HID MH lighting with T5HOs.
- Install occupancy sensors in all offices, classrooms, and restrooms.

Suggested Energy Conservation Opportunities (ECOs) for future consideration:

- In one year, perform a group relamping of all T8 lamps/ballasts wherein Super T8s are installed.
- Upon the end of life of the existing DHW tank, install tankless gas fired DHW heaters in all bathrooms, kitchen, and other point of use areas.
- Upon burnout, replace circ pump motors with NEMA premium efficiency models.

Scope: The specified lighting is obsolete and inefficient.

	Count	Total Est. Cost $	Energy Savings kwhr	Demand Savings KW	Annual Savings $	Utility Rebate $	Simple Payback (years)
1. Replace existing HIDs with T5s							
	15	$ 9,000	8752	3	$ 1,400.65	$ 7,200.00	1.3
Totals:		**$ 9,000**	**8752**	**3**	**$ 1,401**	**$ 7,200**	**1.3**

Description: There are no lighting controls in the facility.

Recommendation: Install switch mounted occupancy sensors in all infrequently used rooms.

	Count	Total Est Cost $	Energy Savings kwhr	Annual Savings $	Utility Rebate $	Simple Payback (years)
Install dual function occupancy sensors in specified areas.						
	33	$ 3,630	21954	$ 3,512.68	$ 2,904.00	0.2
Totals	**33**	**$ 3,630**	**21954**	**$ 3,512.68**	**$ 2,904.00**	**0.2**

2.6 Captain Hunt Elementary School, 12 Kendall Street

Date of energy audit: June 28, 2006

This one story brick and block elementary school (some areas are two floors) was constructed in 1999 and is in excellent shape. From an energy standpoint, it operates from 6a to 10p during the school year and 7a-4p during the summer.

The 17,458 square foot building is heated via gas hot water. The forced hot water heat is provided via two new Thermific Boilers, reported to be in excellent shape and operating very well. Water is circulated by two standard efficiency Baldor 7.5 HP motors. Hot water is provided via a separate gas fired hot water tank which is located in the boiler room.

The doors and windows are excellent shape. Lighting is primarily T8's and of the exits are LED. There are some T12 U tubes and even a few T12s mixed in with the T8s.

There are no automated controls of lighting in the facility.

Recommended ECMs:

- Replace all T12 lamps and ballasts with Super T8 systems.
- Install occupancy sensors in all offices, classrooms, and restrooms.
- Replace existing Honeywell thermostats with new setback T'stats

Suggested Energy Conservation Opportunities (ECOs) for future consideration:

- In one year, perform a group relamping of all T8 lamps/ballasts wherein Super T8s are installed.
- Upon the end of life of the existing DHW tank, install tankless gas fired DHW heaters in all bathrooms, kitchen, and other point of use areas.
- Upon burnout, replace circ pump motors with NEMA premium efficiency models.

Scope: The specified lighting is obsolete and inefficient.

	Count	Total Est. Cost $	Energy Savings kwhr	Demand Savings KW	Annual Savings $	Utility Rebate $	Simple Payback (years)
1. Replace existing T12Us with T8s or Biax	22	$ 1,650	2381	1	$ 381.11	$ 1,320.00	0.9
Totals:		**$ 1,650**	**2381**	**1**	**$ 381**	**$ 1,320**	**0.9**

Description: There are no lighting controls in the facility.

Recommendation: Install switch mounted occupancy sensors in all infrequently used rooms.

	Count	Total Est Cost $	Energy Savings kwhr	Annual Savings $	Utility Rebate $	Simple Payback (years)
Install dual function occupancy sensors in specified areas.	12	$ 1,320	11880	$ 1,900.80	$ 1,056.00	0.1
Totals	**12**	**$ 1,320**	**11880**	**$ 1,900.80**	**$ 1,056.00**	**0.1**

Description: The existing thermostats are not programmable nor can they be setback.

Recommendation: Install SB/P t'stats

	Count	Total Est Cost $	Energy Savings thems	Annual Savings $	Utility Rebate $	Simple Payback (years)
	12	$3,000.00	1633	$2,449.65	$0.00	1.2
Totals	**12**	**$3,000.00**	**1633**	**$2,449.65**	**$0.00**	**1.2**

2.7 Feinstein School, 405 Broad Street

Date of energy audit: June 28, 2006

This three story brick and block elementary school was constructed in 1976 and is in excellent shape for its age. From an energy standpoint, it operates from 6a to 10p during the school year and 7a-4p during the summer.

The 23,202 square foot building is heated via oil hot water. The forced hot water heat is provided via an ancient Smith Boilers, reported to be in failing condition. Water is circulated by two standard efficiency Baldor 5 HP motors. Hot water is provided via a separate oil fired hot water tank which is located in the boiler room.

The doors and windows are excellent shape. Lighting is primarily T8's and of the exits are LED. There are some T12 U tubes and even a few T12s mixed in with the T8s.

There are no automated controls of lighting in the facility.

Recommended ECMs:

- Replace all T12 lamps and ballasts with Super T8 systems.
- Install occupancy sensors in all offices, classrooms, and restrooms.
- Install Vendor Misers or equivalent on vending machines.
- Replace existing Honeywell thermostats with new setback T'stats.
- Replace aging oil boiler and hot water heater with a full condensing gas fired hydronic boiler and tankless water heater for DHW use.

Suggested Energy Conservation Opportunities (ECOs) for future consideration:

- In one year, perform a group relamping of all T8 lamps/ballasts wherein Super T8s are installed.
- Upon burnout, replace circ pump motors with NEMA premium efficiency models.

Description:	The existing thermostats are not programmable nor can they be setback.
Recommendation:	Install SB/P t'stats

	Count	Total Est Cost $	Energy Savings gallons	Annual Savings $	Utility Rebate $	Simple Payback (years)
	14	$3,500.00	573	$1,060.79	$0.00	3.3
Totals	**14**	**$3,500.00**	**573**	**$1,060.79**	**$0.00**	**3.3**

Description:	There are no controls on vending machines.
Recommendation:	Install Vendor Miser

	Count	Total Est Cost $	Energy Savings kwhr	Est. Annual Savings $	Utility Rebate $	Simple Payback (years)
	2	$400.00	3176	$508.00	$320.00	0.2
Totals	**2**	**$400.00**	**3176**	**$508.00**	**$320.00**	**0.2**

Scope:	The specified lighting is obsolete and inefficient.

	Count	Total Est. Cost $	Energy Savings kwhr	Demand Savings KW	Annual Savings $	Utility Rebate $	Simple Payback (years)
1. Replace existing T12Us with T8s or Biax							
	33	$ 2,475	3572	1	$ 571.67	$ 1,980.00	0.9
Totals:		**$ 2,475**	**3572**	**1**	**$ 572**	**$ 1,980**	**0.9**

Description:	There are no lighting controls in the facility.
Recommendation:	Install dual sensing occupancy sensors in all infrequently used rooms.

	Count	Total Est Cost $	Energy Savings kwhr	Annual Savings $	Utility Rebate $	Simple Payback (years)
Install dual function occupancy sensors in specified areas.						
	14	$ 1,540	6653	$ 1,064.45	$ 1,232.00	0.3
Totals	**14**	**$ 1,540**	**6653**	**$ 1,064.45**	**$ 1,232.00**	**0.3**

Description:	Replace oil DHW with gas tankless
Recommendation:	Install tankless DHW heaters.

	Count	Total Est Cost $	Energy Savings gallons	Annual Savings $	Utility Rebate $	Simple Payback (years)
	1	$900.00	115	$ 212.16	$0.00	4.2
Totals	**1**	**$900.00**	**115**	**$212.16**	**$0.00**	**4.2**

Description:	Existing boiler is aging and inefficient
Recommendation:	Replace with FC Gas fired

	Count	Total Est Cost $	Energy Savings gallons	Gas usage therms	Cost of gas $	Annual Savings $	Utility Rebate $	Simple Payback (years)
	1	$70,000.00	9335	4953	$7,429.02	$9,334.95	$0.00	36.7
Totals	**1**	**$70,000.00**	**9335**	**4953**	**$7,429.02**	**$9,334.95**	**$0.00**	**36.7**

2.8 Robertson Elementary School, 135 Hunt Street

Date of energy audit: June 28, 2006

This three story brick and block elementary school was constructed in 1998 and is in excellent shape. From an energy standpoint, it operates from 6a to 10p during the school year and 7a-4p during the summer.

The 28,335 square foot building is heated via gas hot water. The forced hot water heat is provided via two new Thermific Boilers, reported to be in excellent shape and operating very well. Water is circulated by two standard efficiency Baldor 7.5 HP motors. Hot water is provided via a separate gas fired hot water tank which is located in the boiler room.

The doors and windows are excellent shape. Lighting is primarily T8's and of the exits are LED.

There are no automated controls of lighting in the facility.

Recommended ECMs:

- Install occupancy sensors in all offices, classrooms, and restrooms.
- Replace existing Honeywell thermostats with new setback T'stats

Suggested Energy Conservation Opportunities (ECOs) for future consideration:

- In one year, perform a group relamping of all T8 lamps/ballasts wherein Super T8s are installed.
- Upon the end of life of the existing DHW tank, install tankless gas fired DHW heaters in all bathrooms, kitchen, and other point of use areas.
- Upon burnout, replace circ pump motors with NEMA premium efficiency models.

Description:	The existing thermostats are not programmable nor can they be setback.
Recommendation:	Install SB/P t'stats

	Count	Total Est Cost $	Energy Savings therms	Annual Savings $	Utility Rebate $	Simple Payback (years)
	22	$5,500.00	1361	$2,041.65	$0.00	2.7
Totals	**22**	**$5,500.00**	**1361**	**$2,041.65**	**$0.00**	**2.7**

Description:	There are no lighting controls in the facility.
Recommendation:	Install dual sensing occupancy sensors in all infrequently used rooms.

	Count	Total Est Cost $	Energy Savings kwhr	Annual Savings $	Utility Rebate $	Simple Payback (years)
Install dual function occupancy sensors in specified areas.						
	18	$ 1,980	12830	$ 2,052.86	$ 1,584.00	0.2
Totals	**18**	**$ 1,980**	**12830**	**$ 2,052.86**	**$ 1,584.00**	**0.2**

2.8 Calcutt Middle School, 112 Washington Street

Date of energy audit: June 28, 2006

This two story brick and block middle school was constructed in 1976 and a significant addition was constructed in 1999. The facility is in excellent shape. From an energy standpoint, it operates from 6a to 10p during the school year and 7a-4p during the summer.

The 89,600 square foot building is heated via gas hot water. In the old section, the forced hot water heat is provided via 4 twelve year old Hydrotherms reported to be operating well and in good shape. The new section uses two new Thermific Boilers (shown at left), reported to be in excellent shape and operating very well. Water is circulated by four standard efficiency Baldor 7.5 HP motors. Hot water is provided via a separate gas fired hot water tank which is located in the boiler room.

The doors and windows are excellent shape. Lighting is primarily T8's and of the exits are LED. The gym has uplight 400w Metal Halides which do not provide enough light.

There are no automated controls of lighting in the facility.

Recommended ECMs:

- Replace gym MH lighting with T5HOs.
- Install occupancy sensors in all offices, classrooms, and restrooms.
- Replace existing Honeywell thermostats with new setback T'stats
- Install Vendor Misers or equivalent on vending machines.

Suggested Energy Conservation Opportunities (ECOs) for future consideration:

- In one year, perform a group relamping of all T8 lamps/ballasts wherein Super T8s are installed.
- Upon the end of life of the existing DHW tank, install tankless gas fired DHW heaters in all bathrooms, kitchen, and other point of use areas.
- Upon burnout, replace circ pump motors with NEMA premium efficiency models.

Scope: The specified lighting is obsolete and inefficient.

	Count	Total Est. Cost $	Energy Savings kwhr	Demand Savings KW	Annual Savings $	Utility Rebate $	Simple Payback (years)
1. Replace existing MH with T5s	30	$ 18,000	17503	7	$ 2,801.31	$ 14,400	1.3
Totals:		**$ 18,000**	**17503**	**7**	**$ 2,801**	**$ 14,400**	**1.3**

Description: There are no lighting controls in the facility.

Recommendation: Install dual sensing occupancy sensors in all infrequently used rooms.

	Count	Total Est Cost $	Energy Savings kwhr	Annual Savings $	Utility Rebate $	Simple Payback (years)
Install dual function occupancy sensors in specified areas.						
	45	$ 4,950	32076	$ 5,132.16	$ 3,960.00	0.2
Totals	**45**	**$ 4,950**	**32076**	**$ 5,132.16**	**$ 3,960.00**	**0.2**

Description: There are no controls on vending machines.

Recommendation: Install Vendor Miser

	Count	Total Est Cost $	Energy Savings kwhr	Est. Annual Savings $	Utility Rebate $	Simple Payback (years)
	2	$400.00	3176	$508.00	$320.00	0.2
Totals	**2**	**$400.00**	**3176**	**$508.00**	**$320.00**	**0.2**

Description:	The existing thermostats are not programmable nor can they be setback.
Recommendation:	Install SB/P t'stats

	Count	Total Est Cost $	Energy Savings therms	Annual Savings $	Utility Rebate $	Simple Payback (years)
	45	$11,250.00	18514	$27,770.25	$0.00	0.4
Totals	**45**	**$11,250.00**	**18514**	**$27,770.25**	**$0.00**	**0.4**

Section 3 – Energy Star Award Application by Facility

3.1 ESB Introduction and Summary.

As part of the U.S. EPA Energy Star program, buildings can be benchmarked and compared against buildings across the country in the same categories using the Energy Star Portfolio Manager. An office building will be compared against other office buildings, a K-12 school against other K-12 schools and so on with the data adjusted for climate differences. Buildings that achieve a score of 75% or higher can as apply for an Energy Star rating / award as well. The plaque is shown at right. These awards carry enormous PR value wherein they demonstrate superior energy performance. The award is based upon comparison of energy consumption per unit area, normalized for climate conditions. All fuel data must be considered.

Even if a building cannot achieve Energy Star award status, the benchmarking score can be a very valuable tool as it guides the facility manager in his or her effort to improve the efficiency of the building. Obviously, a low score would be an indication that there may be work to be done. A score that improves over the years would be an indication that the efficiency efforts were paying off. A building that does not qualify for an award now may qualify later after the improvements are implemented. Portfolio Manager can be found at the following site:

http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager

From the EPA website: “Buildings achieving a rating of 75 or higher and professionally verified to meet current indoor environment standards are eligible to apply for the ENERGY STAR. Display the ENERGY STAR plaque to convey superior performance to tenants, customers, and employees. Highlighting the ENERGY STAR qualified buildings in your portfolio sends a positive message to lenders, appraisers, owners, investors, and potential tenants or customers. Rate the performance of your buildings on a scale of 1-100 relative to similar buildings nationwide using EPA's national energy performance rating system. The rating system accounts for the impacts of year-to-year weather variations, as well as building size, location, and several operating characteristics. Buildings rating 75 or greater may qualify for the ENERGY STAR.”

Not all building types can be benchmarked by Energy Star’s Portfolio Manager but the list is continually expanding. If your building does meet the current criteria, your utility representative would be happy to do the initial benchmarking upon receipt of the utility bills and heating oil/propane consumption data (if applicable).

Table 2: Summary of Energy Star Scores

Location	Size (SF)	Current Score	Score post ECMs (Estimated)	Percent Improvement	Comments
Central Falls High School 24 Summer Street	97,858	17	60	253%	Huge opportunity
Feinstein School 405 Broad Street	23,202	72	77	7%	
Veterans Memorial Elementary 150 Fuller Avenue	63,110	65	75	15%	
Robertson Elementary 135 Hunt Street	28,335	52	66	27%	
Ella Risk Elementary 949 Dexter Street	51,243	72	81	13%	
Cowden Street School 325 Cowden Street	18,700	15	See notes	See notes	Office skews results
Captain Hunt Elementary 12 Kendall Street	17,458	15	See notes	See notes	Mystery
Administration Building 21 Hedley Avenue	15,000	96	97	1%	**Eligible for award**
Calcutt Middle School 112 Washington Street	89,600	75	87	16%	**Eligible for award**

3.2 Administration Building

In an effort to receive an award, current data for the Administrative Building was input into EPAs Energy Star Building Portfolio Manager. The current score is 96! This facility is eligible for an Energy Star Award.

A second analysis was run, using after-ECM projections for savings. The score improved to 97%.

The score must be 75% to earn an award.

3.3 Central Falls High School

In an effort to receive an award, current data for the Central Falls High School was input into EPAs Energy Star Building Portfolio Manager. The current score is 17%.

A second analysis was run, using after-ECM projections for savings. The score improved to 60%. There is a huge opportunity for improvements in energy efficiency and comfort in this facility.

The score must be 75% to earn an award.

Suggestions to improve score:

1. The Nesbit Electric heaters/ventilators must be replaced with a more efficient means to heat and ventilate the perimeter classrooms.
2. The RTU (s) must be replaced with functioning, efficient, properly sized equipment.

3.4 Veterans Memorial Elementary School

In an effort to receive an award, current data for the Veterans Memorial Elementary School was input into EPAs Energy Star Building Portfolio Manager. The current score is 65%.

A second analysis was run, using after-ECM projections for savings. The score improved to 75% and would thus be eligible for an award.

The score must be 75% to earn an award.

Suggestions to improve score: move forward with the recommended ECMs and rerun analysis after one year.

3.5 Cowden Street School

In an effort to receive an award, current data for the Cowden Street School was input into EPAs Energy Star Building Portfolio Manager. The current score is 15%.

The reason for this very low score is the basement space being devoted to the Outreach and Registrations office activity, not related to the school. This energy intensive space should be analysed separately. Therefore, if desired by management, this facility must be re-entered as two different facilities use the space by space method of data entry.

3.6 Ella Risk Elementary School

In an effort to receive an award, current data for the Ella Risk Elementary School was input into EPAs Energy Star Building Portfolio Manager. The current score is 72%.

A second analysis was run, using after-ECM projections for savings. The score improved to 81%, thus being eligible for an award.

The score must be 75% to earn an award.

Suggestions to improve score: move forward with the recommended ECMs and rerun the analysis after one year.

3.7 Captain Hunt Elementary School

In an effort to receive an award, current data for the Captain Hunt Elementary School was input into EPAs Energy Star Building Portfolio Manager. The current score is 15%.

Several attempts to discover why the score is so low were made to no avail. This remains a mystery. Perhaps the answer lies in one of the following:

1. One story buildings are usually not as efficient as multi story structures.
2. The heating equipment might be oversized for this smallest of school facilities.

In any event, the suggested action is to move forward with the recommended ECMs then rerun the data in one year.

3.8 Feinstein School

In an effort to receive an award, current data for the Feinstein School was input into EPAs Energy Star Building Portfolio Manager. The current score is 72%.

A second analysis was run, using after-ECM projections for savings. The score improved to 77%, thus becoming eligible for an award.

The score must be 75% to earn an award.

Suggestions to improve score: move forward with the recommended ECMs and rerun the analysis after one year.

3.9 Robertson Elementary School

In an effort to receive an award, current data for the Robertson Elementary School was input into EPAs Energy Star Building Portfolio Manager. The current score is 52%.

A second analysis was run, using after-ECM projections for savings. The score improved to 66%.

The score must be 75% to earn an award.

Suggestions to improve score: move forward with the recommended ECMs and rerun the analysis after one year.

3.10 Calcutt Middle School

In an effort to receive an award, current data for the Calcutt Middle School was input into EPAs Energy Star Building Portfolio Manager. The current score is 75% thus eligible for an award.

A second analysis was run, using after-ECM projections for savings. The score improved to 87%.

The score must be 75% to earn an award.

Suggestions to improve score: move forward with the recommended ECMs and simultaneously, apply for the ESB award.

Appendix

Cut Sheets

Needed

1. Electric bills for kwhr and KW rates, SC&me vs. LC&me?

Super T8’s

T5 HO

Compact Fluorescent Lamps

Occupancy Sensors

High Efficiency RTUs

NEMA Premium Efficiency Motors

Full Condensing Boilers

Tankless “on demand” Water Heaters

School Dude O&M

Narragansett Electric Company Rebate Information

NEEP BOC Information