

ECM-10 Install Demand Controlled Ventilation

[illegible]

Subtotal	\$ 41,621
10% OH, 10% Profit	\$ 4,162
10% Contingency	\$ 4,162
Total	\$ 49,940

Appendix M

ECM-11 Unit Ventilator Repair

New Jersey BPU Energy Audits
CHA #19860
Building: Kingwood Township School

ECM-11 Unit Ventilator Repair

Building Footprint	67,519 SF	Ex Occupied Cing Temp.	72 °F	Ex Occupied Htg Temp.	72 °F
#2 Oil Heat Content	140,000 btu/gal	Ex Unoccupied Cing Temp.	80 °F	Ex Unoccupied Htg Temp.	66 °F
Building Balance Temp.	65 °F	Occupied Cooling UA	(32,744) btu/hr/°F	Occupied Heating UA	12,815 btu/hr/°F
Internal Gains	503,940 btu/h	Unoccupied Cooling UA	(20,421) btu/hr/°F	Unoccupied Heating UA	12,815 btu/hr/°F
Unoc Internal Gain factor	0.03	Cooling Occ Enthalpy Setpoint	26 Btu/lb		
Ave Occ Internal Gain Factor	0.7	Cooling Unocc Enthalpy Setpoint	26 Btu/lb		
Boiler Seasonal Efficiency	80%	Percent sf Cooling	57%		

Proposed Cooling Energy is equal to Existing Cooling energy above the existing occupied cooling temperature.
The economizer will bring in outside air to cool the space instead of generating cooling with electricity.

					EXISTING LOADS							
					Occupied			Unoccupied			Existing Cooling Energy kWH	Proposed Cooling Energy kWH
Avg Outdoor Air Temp. Bins °F	Avg Outdoor Air Enthalpy	Existing Equipment Bin Hours	Occupied Equipment Bin Hours	Unoccupied Equipment Bin Hours	Envelope Load BTUH	Ventilation Load BTUH	Internal Gain BTUH	Unoccupied Envelope Load BTUH	Ventilation Load BTUH	Internal Gain BTUH		
A		B	C	D	E	F	G	H	I	J		
100	49.1	0	0	0	-916,825	-3,265,610	-352,758	-408,422	-625,280	-15,118	0	0
95	42.5	3	1	2	-753,106	-2,332,579	-352,758	-306,317	-446,629	-15,118	783	783
90	39.5	34	10	24	-589,388	-1,908,474	-352,758	-204,211	-365,424	-15,118	7,154	7,154
85	36.6	131	39	92	-425,669	-1,498,505	-352,758	-102,106	-286,925	-15,118	21,048	21,048
80	34.0	500	149	351	-261,950	-1,130,947	-352,758	0	0	-15,118	44,296	44,296
75	31.6	620	185	435	-98,231	-791,663	-352,758	0	0	-15,118	39,417	39,417
70	29.2	664	198	466	25,629	67,857	-352,758	0	0	-15,118	9,740	0
65	27.0	854	254	600	89,703	237,499	-352,758	12,815	6,496	-15,118	1,085	0
60	24.5	927	276	651	153,777	407,141	-352,758	76,888	38,979	-15,118	0	0
55	21.4	600	179	421	217,851	576,783	-352,758	140,962	71,461	-15,118	0	0
50	18.7	610	182	428	281,924	746,425	-352,758	205,036	103,943	-15,118	0	0
45	16.2	611	182	429	345,998	916,067	-352,758	269,110	136,425	-15,118	0	0
40	14.4	656	195	461	410,072	1,085,709	-352,758	333,183	168,907	-15,118	0	0
35	12.6	1023	304	719	474,145	1,255,351	-352,758	397,257	201,389	-15,118	0	0
30	10.7	734	218	516	538,219	1,424,994	-352,758	461,331	233,871	-15,118	0	0
25	8.6	334	99	235	602,293	1,594,636	-352,758	525,404	266,353	-15,118	0	0
20	6.8	252	75	177	666,367	1,764,278	-352,758	589,478	298,835	-15,118	0	0
15	5.5	125	37	88	730,440	1,933,920	-352,758	653,552	331,317	-15,118	0	0
10	4.1	47	14	33	794,514	2,103,562	-352,758	717,626	363,799	-15,118	0	0
5	2.6	22	7	15	858,588	2,273,204	-352,758	781,699	396,282	-15,118	0	0
0	1.0	13	4	9	922,661	2,442,846	-352,758	845,773	428,764	-15,118	0	0
-5	0.0	0	0	0	986,735	2,612,488	-352,758	909,847	461,246	-15,118	0	0
-10	-1.5	0	0	0	1,050,809	2,782,130	-352,758	973,920	493,728	-15,118	0	0
TOTALS		8,760	2,607	6,153							123,524	112,699

Existing Building Ventilation & Infiltration (occ) 31,415 cfm
Existing Building Ventilation & Infiltration (unocc) 6,015 cfm

Savings	10,826	\$1,083
	(kWH)	(\$)

New Jersey BPU Energy Audits
CHA #19860
Building: Kingwood Township School

ECM-11 Unit Ventilator Repair

Multipliers	
Material:	0.98
Labor:	1.21
Equipment:	1.07

	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
									\$0	
Split System Unit Ventilators to be connect and controlled by ddc	17	ea	\$ 2,800			\$ 47,600	\$ -	\$ -	\$47,600	
Unit Ventilators connect and control by DDC	10	ea	\$ 2,900			\$ 29,000	\$ -	\$ -	\$29,000	
Repair dampers, seals, and actuators	27	ea	\$ 250	\$ 320		\$ 6,588	\$ 10,420	\$ -	\$17,008	
						\$ -	\$ -	\$ -	\$0	
Programming	27	ea		\$ 400		\$ -	\$ 13,025	\$ -	\$13,025	
						\$ -	\$ -	\$ -	\$0	
						\$ -	\$ -	\$ -	\$0	
						\$ -	\$ -	\$ -	\$0	

Subtotal	\$106,633
10% OH, 10% Profit	\$ 10,663
10% Contingency	\$ 10,663
Total	\$ 127,960

Appendix N

ECM-12 Increase Roof Insulation

New Jersey BPU Energy Audits
CHA #19860
Building: Kingwood Township School

ECM-12 Increase Roof Insulation

Existing Roof Area 67,519 sf
Existing U-value 0.06 Btu/hr/(sf°F)
Proposed U-value 0.03 Btu/hr/(sf°F)
#2 Oil Heat Content 140,000 Btu/lb
Cooling EER 10.00

16.28 Existing R
31.28 Proposed R

Existing Cooling

Existing Cooling Load Temp Diff. 73 F
Existing Max. Roof Cooling Load 302,757 Btu/hr

Existing Heating

Existing Heating Load Temp Diff. 72 F
Existing Max. Roof Heating Load 298,610 Btu/hr

Existing Heating Total 662,936,135 Btu/yr
Proposed Heating Total 345,031,978 Btu/yr
Savings 317,904,157 Btu/yr
Input 2,271 Gallons

Proposed Cooling

Proposed Cooling Load 157,573 Btu/hr

Proposed Heating

Proposed Heating Load 155,415 Btu/hr

Existing Cooling Total 11,080,473 BTU/yr
Proposed Cooling Total 5,766,947 BTU/yr
Savings 531 kWh

Occupied Cooling Setpoint 72 F
Unoccupied Cooling Setpoint 77 F

Occupied Heating Setpoint 72 F
Unoccupied Heating Setpoint 68 F

Percent sf Cooling 57%

Avg Outdoor Air Temp. Bins °F	Existing Equipment Bin Hours	Occupied Equipment Bin Hours	Unoccupied Equipment Bin Hours	Occupied				Unoccupied				Existing Cooling Load BTU/yr	Existing Heating Load (Btu/yr)	Proposed Cooling Load BTU/yr	Proposed Heating Load (Btu/yr)
				Existing Heat Gain	Proposed Heat Gain	Existing Heat Loss	Proposed Heat Loss	Existing Heat Gain	Proposed Heat Gain	Existing Heat Loss	Proposed Heat Loss				
				(Btu/hr)	(Btu/hr)	(Btu/hr)	(Btu/hr)	(Btu/hr)	(Btu/hr)	(Btu/hr)	(Btu/hr)				
100	0	0	0	116,126	60,439	0	0	96,219	50,078	0	0	0	0.0	0.0	0.0
95	3	1	2	95,389	49,646	0	0	75,482	39,285	0	0	244,220	0.0	127,106.9	0.0
90	34	10	24	74,652	38,854	0	0	54,745	28,493	0	0	2,062,778	0.0	1,073,594.0	0.0
85	131	39	92	53,916	28,061	0	0	34,008	17,700	0	0	5,231,241	0.0	2,722,653.7	0.0
80	500	149	351	33,179	17,268	0	0	13,272	6,907	0	0	9,598,173	0.0	4,995,468.6	0.0
75	620	185	435	12,442	6,476	0	0	0	0	0	0	2,295,859	0.0	1,194,903.7	0.0
70	664	198	466	0	0	8,295	4,317	0	0	0	0	0	1,639,194.2	0.0	853,135.6
65	854	254	600	0	0	29,032	15,110	0	0	4,147	2,159	0	9,866,566.4	0.0	5,135,156.7
60	927	276	651	0	0	49,768	25,902	0	0	24,884	12,951	0	29,932,969.1	0.0	15,578,923.8
55	600	179	421	0	0	70,505	36,695	0	0	45,621	23,744	0	31,816,166.2	0.0	16,559,053.3
50	610	182	428	0	0	91,242	47,488	0	0	66,358	34,537	0	44,995,879.7	0.0	23,418,571.7
45	611	182	429	0	0	111,979	58,280	0	0	87,095	45,329	0	57,739,824.4	0.0	30,051,289.7
40	656	195	461	0	0	132,715	69,073	0	0	107,831	56,122	0	75,595,684.9	0.0	39,344,557.2
35	1,023	304	719	0	0	153,452	79,866	0	0	128,568	66,915	0	139,101,522.8	0.0	72,396,828.4
30	734	218	516	0	0	174,189	90,659	0	0	149,305	77,707	0	115,025,809.2	0.0	59,866,373.8
25	334	99	235	0	0	194,926	101,451	0	0	170,042	88,500	0	59,267,533.6	0.0	30,846,401.7
20	252	75	177	0	0	215,663	112,244	0	0	190,779	99,293	0	49,942,493.7	0.0	25,993,088.2
15	125	37	88	0	0	236,399	123,037	0	0	211,515	110,085	0	27,365,161.6	0.0	14,242,481.8
10	47	14	33	0	0	257,136	133,829	0	0	232,252	120,878	0	11,263,930.1	0.0	5,862,429.1
5	22	7	15	0	0	277,873	144,622	0	0	252,989	131,671	0	5,728,687.4	0.0	2,981,554.7
0	13	4	9	0	0	298,610	155,415	0	0	273,726	142,463	0	3,654,711.8	0.0	1,902,132.6
-5	0	0	0	0	0	319,347	166,207	0	0	294,462	153,256	0	0.0	0.0	0.0
-10	0	0	0	0	0	340,083	177,000	0	0	315,199	164,049	0	0.0	0.0	0.0
TOTALS	8,760	2,607	6,153									19,432,272	662,936,135	10,113,727	345,031,978

New Jersey BPU Energy Audits
CHA #19860
Building: Kingwood Township School

ECM-12 Increase Roof Insulation

Multipliers	
Material:	0.98
Labor:	1.21
Equipment:	1.07

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
						\$ -	\$ -	\$ -	\$ -	
Addition of 3" R-15	67,519	sf	\$ 1.47	\$ 0.440		\$ 96,871	\$ 35,828	\$ -	\$ 132,699	
						\$ -	\$ -	\$ -	\$ -	
NOTE: This ECM does not include a roof replacement. This is the cost for insulation only.						\$ -	\$ -	\$ -	\$ -	
						\$ -	\$ -	\$ -	\$ -	
						\$ -	\$ -	\$ -	\$ -	
						\$ -	\$ -	\$ -	\$ -	
						\$ -	\$ -	\$ -	\$ -	
						\$ -	\$ -	\$ -	\$ -	
						\$ -	\$ -	\$ -	\$ -	
						\$ -	\$ -	\$ -	\$ -	
						\$ -	\$ -	\$ -	\$ -	
						\$ -	\$ -	\$ -	\$ -	
						\$ -	\$ -	\$ -	\$ -	

\$ 132,699	Subtotal
\$ 26,539.83	20% Contingency
\$ 13,269.91	10% Contractor O&P
\$ -	Engineering
\$ 172,509	Total

Appendix O

ECM-13 All ECMs Associated with DDC Upgrade

New Jersey BPU Energy Audits
CHA #19860
Building: Kingwood Township School

ECM-13 All ECMs Associated with DDC Upgrade

This ECM will include all savings associated with a full DDC system upgrade.

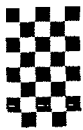
	Item	Savings			
		Elec. kWh	Gallon Oil	Clg kWh	\$
ECM-2	Schedule Night Setback and Shutdown	86,033	4,415		\$ 26,827
ECM-10	Install Demand Controlled Ventilation		2,888	4,949	\$ 9,080
ECM-11	Unit Ventilator Repair			10,826	\$ 1,786

Total Savings **\$ 37,693**

Multipliers	
Material:	0.98
Labor:	1.21
Equipment:	1.07

Description	QTY	UNIT	UNIT COSTS			SUBTOTAL COSTS			TOTAL COST	REMARKS
			MAT.	LABOR	EQUIP.	MAT.	LABOR	EQUIP.		
									\$ -	
B-17 RTU connect and control by DDC	1	ea	\$ 6,500			\$ 6,500	\$ -	\$ -	\$ 6,500	
Split System Unit Ventilators to be connect and controlled by ddc	17	ea	\$ 2,800			\$ 47,600	\$ -	\$ -	\$ 47,600	
Cafeteria Heating Unit connect and control by DDC	1	ea	\$ 7,800			\$ 7,800	\$ -	\$ -	\$ 7,800	
Gym Heating Unit connect and control by DDC	1	ea	\$ 9,200			\$ 9,200	\$ -	\$ -	\$ 9,200	
Unit Ventilators connect and control by DDC	10	ea	\$ 2,900			\$ 29,000	\$ -	\$ -	\$ 29,000	
Exhaust Fan connect and control on D DC	10	ea	\$ 650			\$ 6,500	\$ -	\$ -	\$ 6,500	
Unit Ventilator repair - fix dampers, seals, and actuators	27	ea	\$ 250	\$ 320		\$ 6,588	\$ 10,420	\$ -	\$ 17,008	
						\$ -	\$ -	\$ -	\$ -	
Programming	40	ea		\$ 400		\$ -	\$ 19,296	\$ -	\$ 19,296	
Carbon Dioxide Sensor	40	ea	\$ 250	\$ 100		\$ 9,760	\$ 4,824	\$ -	\$ 14,584	
	40	ea	\$ 50	\$ 120		\$ 1,952	\$ 5,789	\$ -	\$ 7,741	
									\$ -	

\$ 165,229	Subtotal
\$ 16,523	10% Contingency
\$ 16,523	10% Contractor O&P
	0% Engineering
\$ 198,274	Total



AUTOMATIC TEMPERATURE CONTROL SERVICES INC.

207 Blackford Avenue • PO Box 310
Middlesex, NJ 08846
Phone (732)560-0900 Fax (732)560-9699

May 12, 2009

CHA

Attn: Mr. Jake Hanson
2001 RT 46 Suite 107
Parsippany, NJ

Fax: 518-458-1735

Re: Kingwood School

Jaite,

- 1) On May 4th, Eric Carr and myself did a survey on Kingwood School and the following is my report.

Unit B-17 – Unit serves Eric office, unit is cooling only with economizer
To place unit on Johnson Building Automation = \$6500

- 2) 17 split systems serving classroom cooling only
To place on Johnson Building Automation = \$2800 each

- 3) Cafeteria unit heating only
To place on Johnson Building Automation = \$7800

- 4) Gym unit heating only (pneumatic controls) recommend replacing pneumatic control w/ddc and tie into building automation = \$9200

- 5) Ten univents to be retrofitted with ddc controls = \$2900 each

- 5) Exhaust fans on light switch (10) needs to be tied into building automation = \$6500

- 7) Parking Lights – on photo cell, needs to be put on building automation for weekends, holidays = \$1500

Presently the Johnson System controls the new wing, its RTU's plus several univents. By placing the remaining equipment under the building automation, the school can take advantage of weekends, holidays, and night setback to achieve additional savings.

If there are any questions, please give me a call.

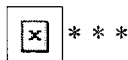
Sincerely Yours,
Kevin O'Rourke



Appendix P

Photovoltaic (PV) Rooftop Solar Power Generation

AC Energy & Cost Savings





Station Identification	
City:	Newark
State:	New_Jersey
Latitude:	40.70° N
Longitude:	74.17° W
Elevation:	9 m
PV System Specifications	
DC Rating:	50.0 kW
DC to AC Derate Factor:	0.770
AC Rating:	38.5 kW
Array Type:	Fixed Tilt
Array Tilt:	40.7°
Array Azimuth:	180.0°
Energy Specifications	
Cost of Electricity:	14.0 ¢/kWh

Results			
Month	Solar Radiation (kWh/m ² /day)	AC Energy (kWh)	Energy Value (\$)
1	3.36	4139	579.46
2	4.05	4469	625.66
3	4.58	5422	759.08
4	4.84	5299	741.86
5	5.30	5838	817.32
6	5.33	5506	770.84
7	5.27	5561	778.54
8	5.25	5503	770.42
9	5.06	5338	747.32
10	4.46	5027	703.78
11	3.15	3588	502.32
12	2.87	3460	484.40
Year	4.46	59150	8281.00

[Output Hourly Performance Data](#)
[Output Results as Text](#)

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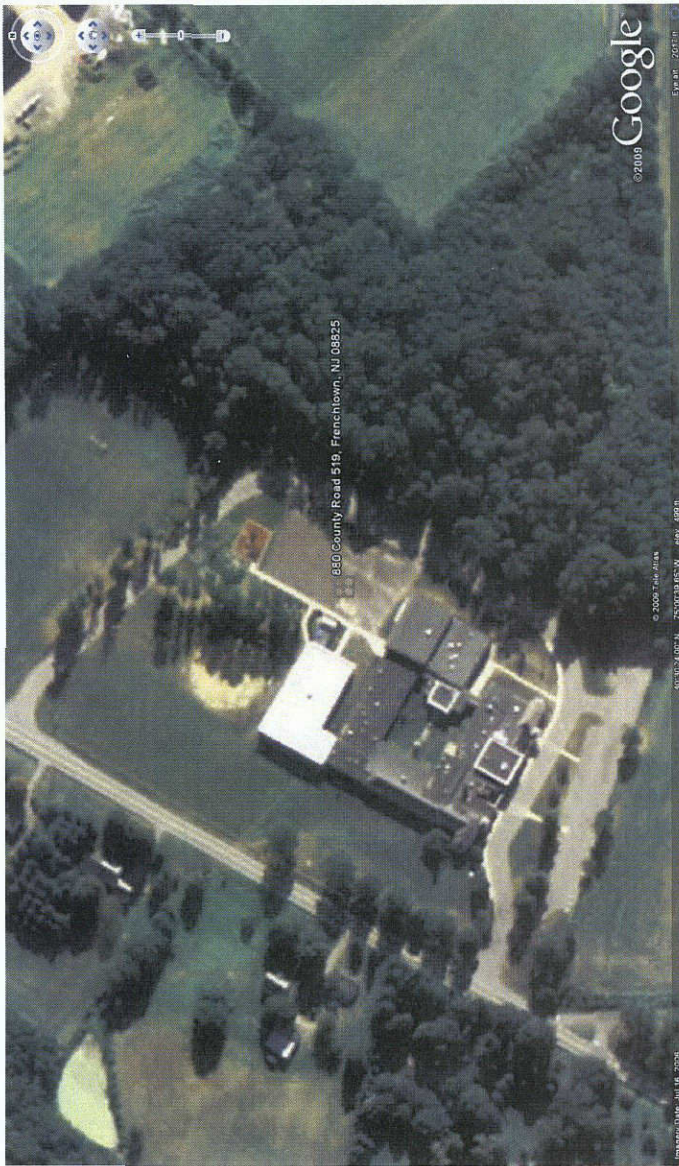
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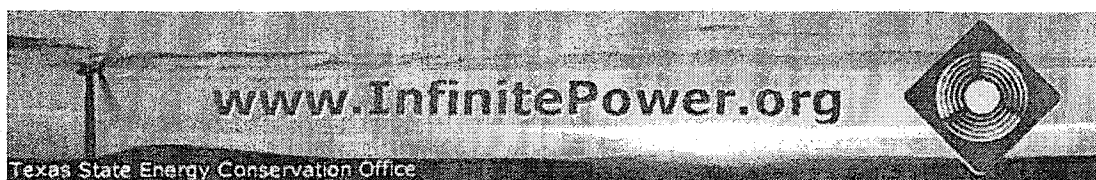
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Appendix Q

Solar Thermal Heating


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SOLAR WATER HEATING CALCULATOR

RENEWABLE ENERGY
 THE INFINITE POWER
 OF TEXAS

Water heating is a major energy consumer. Although the energy consumed daily is often less than for air conditioning or heating, it is required year round, making it a good application of solar energy.

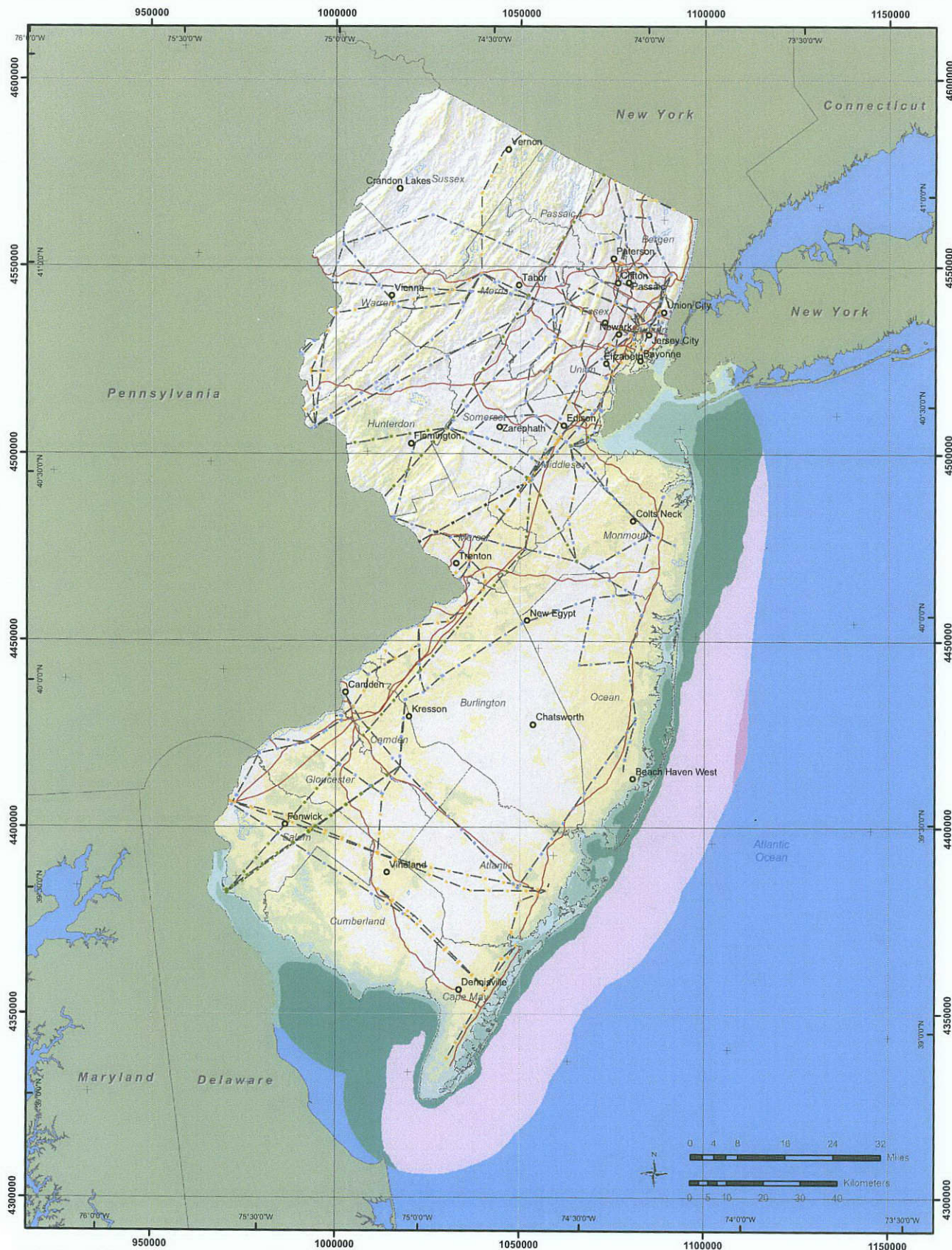
Use this calculator to explore the energy usage of your water heater, and to estimate whether a solar water heater could save you money.

Water Heater Characteristics			
Physical		Thermal	
Diameter (feet)	3.5	Water Inlet Temperature (Degrees F)	58
Capacity (gallons)	480	Ambient Temperature (Degrees F)	70
Surface Area (calculated - sq ft)	92.58	Hot Water Temperature (Degrees F)	135
Effective R-value	4969	Hot Water Usage (Gallons per Day)	450
Energy Use			
11850		Heat Delivered in Hot Water (BTU/hr)	
1.211		Heat loss through insulation (BTU/hr)	

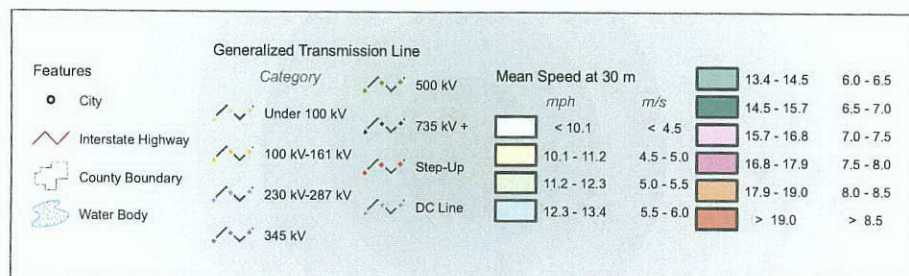
Gas vs. Electric Water Heating		
Gas		Electric
0.8305	Overall Efficiency	0.9799
0.8306	Conversion Efficiency	0.98
14270 BTU/hr	Power Into Water Heater	12090 BTU/hr
Cost		
\$0 /Therm	Utility Rates	\$0 /kWh
\$0	Yearly Water Heating Cost	\$0
How Does Solar Compare?		
Solar Water Heater Cost: \$26490		Percentage Solar: 70
Infinity years for gas	Payback Time for Solar System	Infinity years for electric

Appendix R

Wind



Wind Resource of New Jersey *Mean Annual Wind Speed at 30 Meters*



AWS Truewind

Projection: Transverse Mercator,
UTM Zone 17 WGS84

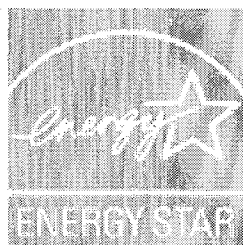
Spatial Resolution of Wind Resource Data: 200m
This map was created by AWS Truewind using the MesoMap system and historical weather data. Although it is believed to represent an accurate overall picture of the wind energy resource, estimates at any location should be confirmed by measurement.

The transmission line information was obtained by AWS Truewind from the Global Energy Decisions Velocity Suite. AWS does not warrant the accuracy of the transmission line information.

AWS Truewind, LLC

Appendix S

EPA Energy Star Portfolio Manager Report



STATEMENT OF ENERGY PERFORMANCE

Kingwood Township School

Building ID: 1740364
 For 12-month Period Ending: November 30, 2008¹
 Date SEP becomes ineligible: N/A

Date SEP Generated: May 12, 2009

Facility
 Kingwood Township School
 880 County Route 519
 Frenchtown, NJ 08825

Facility Owner
 Kingwood Township School
 880 County Road 519
 Frenchtown, NJ 08825

Primary Contact for this Facility
 Eric Carr
 880 County Road 519
 Frenchtown, NJ 08825

Year Built: 1948
Gross Floor Area (ft²): 67,519

Energy Performance Rating² (1-100) 28

Site Energy Use Summary³

Electricity (kBtu)	2,268,642
Fuel Oil (No. 2) (kBtu)	2,740,664
Natural Gas (kBtu) ⁴	0
Total Energy (kBtu)	5,009,306

Energy Intensity⁵

Site (kBtu/ft ² /yr)	78
Source (kBtu/ft ² /yr)	157

Emissions (based on site energy use)
 Greenhouse Gas Emissions (MtCO₂e/year)

565

Electric Distribution Utility
 Jersey Central Power & Lt Co

National Average Comparison

National Average Site EUI	64
National Average Source EUI	129
% Difference from National Average Source EUI	22%
Building Type	K-12 School

Stamp of Certifying Professional
Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Meets Industry Standards⁶ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	N/A
Acceptable Thermal Environmental Conditions	N/A
Adequate Illumination	N/A

Certifying Professional
 N/A

Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Natural Gas values in units of volume (e.g. cubic feet) are converted to kBtu with adjustments made for elevation based on Facility zip code.
5. Values represent energy intensity, annualized to a 12-month period.
6. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

ENERGY STAR® Data Checklist for Commercial Buildings

In order for a building to qualify for the ENERGY STAR, a Professional Engineer (PE) must validate the accuracy of the data underlying the building's energy performance rating. This checklist is designed to provide an at-a-glance summary of a property's physical and operating characteristics, as well as its total energy consumption, to assist the PE in double-checking the information that the building owner or operator has entered into Portfolio Manager.

Please complete and sign this checklist and include it with the stamped, signed Statement of Energy Performance.

NOTE: You must check each box to indicate that each value is correct, OR include a note.

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Building Name	Kingwood Township School	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	K-12 School	Is this an accurate description of the space in question?		☐
Location	880 County Route 519, Frenchtown, NJ 08825	Is this address accurate and complete? Correct weather normalization requires an accurate zip code.		☐
Single Structure	Single Facility	Does this SEP represent a single structure? SEPs cannot be submitted for multiple-building campuses (with the exception of acute care or children's hospitals) nor can they be submitted as representing only a portion of a building		☐
Kingwood Township School (K-12 School)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	67,519 Sq. Ft.	Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.		☐
Open Weekends?	No	Is this building normally open at all on the weekends? This includes activities beyond the work conducted by maintenance, cleaning, and security personnel. Weekend activity could include any time when the space is used for classes, performances or other school or community activities. If the building is open on the weekend as part of the standard schedule during one or more seasons, the building should select ?yes? for open weekends. The ?yes? response should apply whether the building is open for one or both of the weekend days.		☐
Number of PCs	160	Is this the number of personal computers in the K12 School?		☐
Number of walk-in refrigeration/freezer units	2	Is this the total number of commercial walk-in type freezers and coolers? These units are typically found in storage and receiving areas.		☐
Presence of cooking facilities	Yes	Does this school have a dedicated space in which food is prepared and served to students? If the school has space in which food for students is only kept warm and/or served to students, or has only a galley that is used by teachers and staff then the answer is "no".		☐
Percent Cooled	60 %	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	100 %	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐

Months	12 (Optional)	Is this school in operation for at least 8 months of the year?	☐
High School?	No	Is this building a high school (teaching grades 10, 11, and/or 12)? If the building teaches to high school students at all, the user should check 'yes' to 'high school'. For example, if the school teaches to grades K-12 (elementary/middle and high school), the user should check 'yes' to 'high school'.	☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Jersey Central Power & Lt Co

Fuel Type: Electricity		
Meter: Main Electricity (kWh) Space(s): Entire Facility		
Start Date	End Date	Energy Use (kWh)
10/17/2008	11/18/2008	49,680.00
09/19/2008	10/16/2008	51,680.00
08/19/2008	09/18/2008	37,040.00
07/21/2008	08/18/2008	45,040.00
06/19/2008	07/20/2008	62,960.00
05/19/2008	06/18/2008	61,200.00
04/17/2008	05/18/2008	55,120.00
03/18/2008	04/16/2008	60,320.00
02/18/2008	03/17/2008	66,160.00
01/18/2008	02/17/2008	64,560.00
12/15/2007	01/17/2008	60,960.00
Main Electricity Consumption (kWh)		614,720.00
Main Electricity Consumption (kBtu)		2,097,424.64
Total Electricity Consumption (kBtu)		2,097,424.64
Is this the total Electricity consumption at this building including all Electricity meters?		☐

Fuel Type: Fuel Oil (No. 2)		
Meter: #2 Fuel Oil (Gallons) Space(s): Entire Facility		
Start Date	End Date	Energy Use (Gallons)
11/01/2008	11/30/2008	2,500.00
10/01/2008	10/31/2008	0.00
09/01/2008	09/30/2008	0.00
08/01/2008	08/31/2008	0.00
07/01/2008	07/31/2008	0.00
06/01/2008	06/30/2008	1,500.00
05/01/2008	05/31/2008	0.00
04/01/2008	04/30/2008	7,403.20
03/01/2008	03/31/2008	2,675.00
02/01/2008	02/29/2008	1,406.00

01/01/2008	01/31/2008	4,092.00
#2 Fuel Oil Consumption (Gallons)		19,576.20
#2 Fuel Oil Consumption (kBtu)		2,740,664.08
Total Fuel Oil (No. 2) Consumption (kBtu)		2,740,664.08
Is this the total Fuel Oil (No. 2) consumption at this building including all Fuel Oil (No. 2) meters?		☐

Additional Fuels	
Do the fuel consumption totals shown above represent the total energy use of this building? Please confirm there are no additional fuels (district energy, generator fuel oil) used in this facility.	☐

Certifying Professional

(When applying for the ENERGY STAR, this must be the same PE that signed and stamped the SEP.)

Name: _____ Date: _____

Signature: _____

Signature is required when applying for the ENERGY STAR.

FOR YOUR RECORDS ONLY. DO NOT SUBMIT TO EPA.

Please keep this Facility Summary for your own records; do not submit it to EPA. Only the Statement of Energy Performance (SEP), Data Checklist and Letter of Agreement need to be submitted to EPA when applying for the ENERGY STAR.

Facility

Kingwood Township School
880 County Route 519
Frenchtown, NJ 08825

Facility Owner

Kingwood Township School
880 County Road 519
Frenchtown, NJ 08825

Primary Contact for this Facility

Eric Carr
880 County Road 519
Frenchtown, NJ 08825

General Information

Kingwood Township School	
Gross Floor Area Excluding Parking: (ft ²)	67,519
Year Built	1948
For 12-month Evaluation Period Ending Date:	November 30, 2008

Facility Space Use Summary

Kingwood Township School	
Space Type	K-12 School
Gross Floor Area(ft ²)	67,519
Open Weekends?	No
Number of PCs	160
Number of walk-in refrigeration/freezer units	2
Presence of cooking facilities	Yes
Percent Cooled	60
Percent Heated	100
Months ^a	12
High School?	No
School District ^a	Kingwood Township

Energy Performance Comparison

Performance Metrics	Evaluation Periods		Comparisons		
	Current (Ending Date 11/30/2008)	Baseline (Ending Date 11/30/2008)	Rating of 75	Target	National Average
Energy Performance Rating	28	28	75	N/A	50
Energy Intensity					
Site (kBtu/ft ²)	78	78	50	N/A	64
Source (kBtu/ft ²)	157	157	101	N/A	129
Energy Cost					
\$/year	\$ 170,436.66	\$ 170,436.66	\$ 109,449.11	N/A	\$ 139,953.83
\$/ft ² /year	\$ 2.52	\$ 2.52	\$ 1.62	N/A	\$ 2.07
Greenhouse Gas Emissions					
MtCO ₂ e/year	565	565	363	N/A	464
kgCO ₂ e/ft ² /year	8	8	5	N/A	7

More than 50% of your building is defined as K-12 School. Please note that your rating accounts for all of the spaces listed. The National Average column presents energy performance data your building would have if your building had an average rating of 50.

Notes:

o - This attribute is optional.

d - A default value has been supplied by Portfolio Manager.

Project Name:	Kingwood Township School
Project Number:	19860
Appendix T	
ECM-1	
Expected Measure Life:	15 years based on ASHRAE 2007 HVAC Applications Handbook
Lifetime Energy Savings:	244,500 kwh 82500 gallons of oil
ROI	0.85
ECM-2	
Expected Measure Life:	15 years based on ASHRAE 2007 HVAC Applications Handbook
Lifetime Energy Savings:	1,558,500 kwh 66000 gallons of oil
ROI	1.96
ECM-3	
Expected Measure Life:	15 years based on ASHRAE 2007 HVAC Applications Handbook
Lifetime Energy Savings:	195,000 kwh 0 gallons of oil
ROI	0.80
ECM-4	
Expected Measure Life:	25 years based on Fannie Mae Physical Needs Assessment Guidance to the Property Evaluator
Lifetime Energy Savings:	40,000 kwh 10000 gallons of oil
ROI	-0.30
ECM-5	
Expected Measure Life:	30 years based on Fannie Mae Physical Needs Assessment Guidance to the Property Evaluator
Lifetime Energy Savings:	468,000 kwh 48000 gallons of oil
ROI	1.34
ECM-5A	
Expected Measure Life:	30 years based on Fannie Mae Physical Needs Assessment Guidance to the Property Evaluator
Lifetime Energy Savings:	58,230 kwh 5970 gallons of oil
ROI	1.28
ECM-5B	
Expected Measure Life:	30 years based on Fannie Mae Physical Needs Assessment Guidance to the Property Evaluator
Lifetime Energy Savings:	58,230 kwh 5970 gallons of oil
ROI	-0.36
ECM-6	
Expected Measure Life:	25 years based on Fannie Mae Physical Needs Assessment Guidance to the Property Evaluator
Lifetime Energy Savings:	725,000 kwh 0 gallons of oil
ROI	15.80
ECM-7	
Expected Measure Life:	25 years based on Fannie Mae Physical Needs Assessment Guidance to the Property Evaluator
Lifetime Energy Savings:	1,020,000 kwh 0 gallons of oil
ROI	3.31
ECM-7a	
Expected Measure Life:	25 years based on Fannie Mae Physical Needs Assessment Guidance to the Property Evaluator
Lifetime Energy Savings:	325,000 kwh 0 gallons of oil
ROI	6.29
ECM-8	
Expected Measure Life:	25 years based on Fannie Mae Physical Needs Assessment Guidance to the Property Evaluator
Lifetime Energy Savings:	1,502,500 kwh 0 gallons of oil
ROI	4.27
ECM-9	
Expected Measure Life:	25 years based on ASHRAE 2007 HVAC Applications Handbook
Lifetime Energy Savings:	0 kwh 855000 gallons of oil
ROI	5.24
ECM-10	
Expected Measure Life:	15 years based on ASHRAE 2007 HVAC Applications Handbook
Lifetime Energy Savings:	75,000 kwh 43500 gallons of oil
ROI	1.73
ECM-11	
Expected Measure Life:	20 years based on ASHRAE 2007 HVAC Applications Handbook
Lifetime Energy Savings:	216,000 kwh 0 gallons of oil
ROI	-0.72
ECM-12	
Expected Measure Life:	50 years based on Fannie Mae Physical Needs Assessment Guidance to the Property Evaluator
Lifetime Energy Savings:	25,000 kwh 115000 gallons of oil
ROI	0.91