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November 5, 2012

FirstEnergy County and Local Government Audit Program
Energy Audit Final Report

For

Bellaire Court Apartments
State College Borough
729 Bellaire Ave.
State College, Pa 16801

Introduction

On November 5, 2012 Premier Power Solutions, LLC (PPS) performed an energy audit and conditions assessment of the State College Bellaire Court. This audit was conducted under the FirstEnergy County and Local Government Audit Program by Jason Greenblatt, who has 10 years experience in conducting commercial and residential energy audits.

Existing conditions and energy-related information were collected in order to analyze and facilitate the implementation of energy conservation measures (ECMs) for the building. Twelve months of building energy data was entered into ENERGY STAR Portfolio Manager so a baseline benchmark rating could be obtained for the building. PPS selected (5) appropriate ECMs, estimated the energy-savings for each ECM, the estimated cost to implement, the measure along with a rebate if applicable and the simple payback for the ECM.

The apartment building was built in 1970 and consists of 14,928 square feet of conditioned space. One hundred percent of the structure is heated and sixty percent is cooled. The structure brick faced block construction. The roof construction is two feet O.C trussed with asphalt shingle. The building has double and single paned windows and door systems that are in good condition and operates 168 hours per week, 52 weeks per year and has a peak occupancy rate of 40 people.

The goal of this energy audit is to provide sufficient information to make decisions regarding the implementation of the most appropriate and most cost effective energy conservation measures for the building.

Energy Consumption

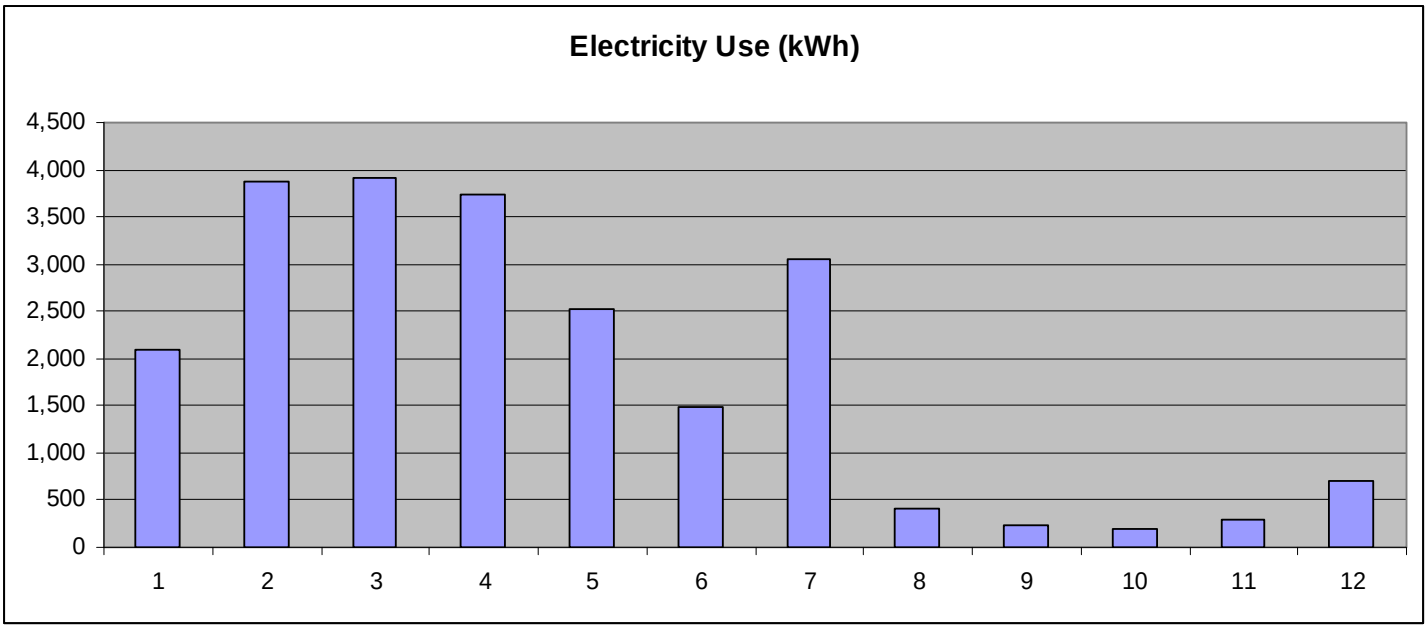
Energy usage and cost analysis

PPS analyzed utility bills for a 12-month period from West Penn Power for electricity. The apartment complex currently does not use natural gas.

Electricity - The borough presently purchases electricity (generation/transmission) from First Energy Solutions for 6.3 cents per kWh and 2.01 cents per kWh for distribution from West Penn Power. They signed a 29 month fixed price contract that started January 1st 2011 and will end June of 2013. The period of time analyzed for this audit was from August 2011 to July 2012. The apartment complex used a total of 22,571 kWh over that 12-month period at a total cost of $1,876 (8.31 cents per kWh). Generation and transmission was $1,422 and distribution charges were $454.

The following chart shows electricity usage for the maintenance building based on utility bills from August 2011 through July 2012.

Bellaire Court Electric Usage



Energy Benchmarking

The building information and utility data were entered into the U.S. Environmental Protection Agency's (EPA*) Energy Star Portfolio Manager* Energy benchmarking system. A rating of N/A was given to the building. The building was benchmarked against a database of other apartment complexes from around the country.

PPS has assisted State College in creating an *Energy Star Portfolio Manager* account which will allow the borough to share the facility's information and allow future data to be added and tracked using the benchmarking tool.

Summary Energy Performance Report

Facilities included: Individually selected from main Portfolio
Located in:
Date Generated: 2/7/13

Number of facilities: 1

	Year ending 7/2012
Total Floorspace (sq. ft.)	14,982
Average Rating	N/A
Number of Facilities with a Rating	0
Number of Non-ratable Facilities*	1
Total Site Energy Use (kBtu)	77,012
Total Weather Normalized Source Energy Use (kBtu)	257,221
Average Weather Normalized Source Energy Intensity (kBtu/Sq. Ft.)	17.2
Average Site Energy Intensity (kBtu/Sq. Ft.)	5.1
Total Site Electric Use (kWh)	22,571
Total Site Natural Gas Use (Therms)	0
Average Actual Annual Source Energy Intensity (kBtu/Sq. Ft.)	17.2

*Non-ratable buildings are defined as buildings that currently are ineligible to receive the ENERGY STAR rating due to its operating characterisitcs and/or building type.

The *Summary Energy Performance Report* provides benchmarking information for both Source and Site Energy Use. Site Energy is the energy consumed by the building at the building site only. Source Energy includes the Site Energy Use as well as all of the losses to create and distribute the energy to the building. For electricity, it includes the energy, primarily in the form of coal, used by the electric power plants in the building's electric generation region to generate the electricity used by Belleaire Court as well as the transmission and distribution losses between the electric generation plant and the complex. Source Energy is used to

calculate the building's Energy Star rating. The EPA has determined that Source Energy is the most comparable unit for evaluation purposes and overall global impact. The Source Energy is also used to calculate the building's carbon footprint which is available in *Portfolio Manager*.

The *Summary Energy Performance Report also* provides information on the building's Energy Intensity. Energy Intensity is a measure of a building's annual energy utilization per square foot of building. This calculation is completed by converting all utility usage consumed by a building for one year, to British Thermal Units (BTU) and dividing this number by the building square footage. Energy intensity is a good measure of a building's energy use and is utilized regularly for comparison of energy performance for similar building types. The Oak Ridge National Laboratory (ORNL) Buildings Technology Center under a contract with the U.S. Department of Energy maintains a Benchmarking Building Energy Performance Program. The ORNL website determines how a building's energy use compares with similar facilities throughout the U.S. and in a specific region or state.

The *Summary Energy Performance Report* shows the Total Site Energy Use for Belleaire Court as 77,012 kBTUs where "k" is 1000 BTUs. The Average Site Energy Intensity is 5.1 kBTUs/Sq. Ft. Compare that with the Total Weather-Normalized Source Energy Use of 257,221 kBTUs. Weather-normalized means that the energy use was corrected to account for annual temperature variations that deviate from the 20-year average temperature database for the region. This allows better comparisons of energy use from one year to the next. The Average Weather-Normalized Source Energy Intensity is 17.2 kBTUs/Sq. Ft. compared to the non-normalized Actual Source Energy intensity of 17.2 kBTUs/Sq. Ft.

Description of Base Systems & Facility Overview

Building Envelope - The exterior of the building is vinyl siding, insulated with R-19 vinyl faced fiberglass insulation. The roof is 2 foot O.C. trussed with asphalt shingle and fiberglass insulation. The windows are double and single pane and are in good condition. The man doors are steel insulated and double paned glass.

Lighting – The lighting throughout the building is compact fluorescent. Lighting is not controlled through a building management system and no occupancy sensors exist. The outdoor lighting consists of (4) 175 watt HPS wall packs.

HVAC – The common areas of the building are heated by through the wall electric heaters. None of the common space in the building is air conditioned. All the rooms that were checked had reasonably low CO_2 levels, indicating that ventilation was sufficient.

Dedicated Ventilation Systems – There is no dedicated ventilation system.

Executive Summary

On November 5th 2012, Premier Power Solutions, LLC (PPS) performed an energy audit and conditions assessment of the Bellaire Court Apartments located in State College, Pennsylvania. This audit was conducted under the FirstEnergy County and Local Government Audit Program by Jason Greenblatt who has ten years experience conducting commercial and residential audits.

The goal of this energy audit is to provide sufficient information to make decisions regarding the implementation of the most appropriate and most cost effective energy conservation measures for the building.

Existing conditions and energy-related information were collected in order to analyze and facilitate the implementation of energy conservation measures (ECMs) for the building. Twelve months of building energy data were entered into ENERGY STAR Portfolio Manager so a baseline benchmark rating could be obtained for the building.

(5) ECMs were selected for the apartment building:

- Change (4) 175 watt outdoor HPS lights to 26 watt LED fixtures. The monetary savings for this project would be $217 and save 2,610 kWh. The cost of the project is estimated at $1,000 dollars and has a simple payback of 4.6 years. These savings are based upon the following assumptions.

  149 watts saved x (4) fixtures = 596 watts saved x .001 = 0.596 kW x 4,380 hrs = 2,610 kWh saved x .0831 electricity cost = $217 savings

- Air seal with silicone acrylic latex caulking and minimal expanding foam around the windows and doors to eliminate air infiltration. The estimated savings in electricity annually would be 1,228 kWh and save $102 annually. The cost would be about $30 in materials. This project would have a simple payback of .3 years. These savings are based on the following assumptions.

  24,550 kWh usage x 5% savings = 1,228 kWh saved X .0831 = $102 savings

- Increase ventilation to reduce moisture in storage area to reduce the amount of time the dehumidifiers operate. This would save $234 dollars with a reduction in consumption by 2,818 kWh. This project would cost $600 and have a payback of 2.6 years. These savings are based on the following assumptions.

965 watts saved x (2) units = 1,930 watts saved x .001 = 1.93 kW x 1,460 hrs = 2,818 kWh saved x .0831 electricity cost = $234 savings

- Install (2) LED exit signs to replace 28 watt units. This would save an additional 403 kWh with a dollar savings of $34. The cost to complete would be $60 after act 129 rebates and have a payback of 1.8 years. These savings are based on the following assumptions.

  23 watts saved x (2) fixtures = 46 watts saved x .001 = .046 kW x 8,760 hrs = 403 kWh saved x .0831 electricity cost = $34 savings

- Replace old water heater with Hybrid Super Efficient Rheem Water Heater. This replacement would save 2,857 kWh and $237 annually. This project would cost $750 and have a simple payback of 3.16 years.

  4.5 kW (current heater) x 1,460 hrs = 6,570 kWh x .55 = 3,713 kWh (usage of Rheem)

  6,570 kWh – 3,713 kWh = 2,857 kWh saved x .0831 electricity cost = $237 savings

Here is a summary list of the (5) ECMs that were selected for this building along with a description, expected life of the measure, annual energy and peak demand reduction, labor, material and total costs, Act 129 incentives and the simple payback .

Energy Conservation Measure 1

Replace (4) 175 Watt Outdoor HPS Lights with 26 Watt LED Wall Packs

LED lamps have a CRI of 80+ providing excellent color retention. Because of the uniform beam, intensity and color temperature are consistent, no yellow rings or color shadows are produced. A universal operating position allows fixture placement in any direction needed with no loss of light output as in conventional HID models. LEDs also have a dimming capability for light harvesting and further energy savings. The cost of this project would be $1,000 and would save 2,610 kWh resulting in a dollar savings of $217. This ECM would have a payback of 4.6 years.

Energy Conservation Measure 2

Air Seal with Silicone Acrylic Latex Caulking and Minimal Expanding Foam

Air sealing of the windows and doors will help stop air infiltration into the common areas of the complex. This job can be done by Borough staff. A general estimate is that air sealing can save 5% of energy use. This small job would provide an annual savings of 1,228 kWh with a dollar savings of $102. The cost of the project would be $30 and have a simple payback of .3 years.

Energy Conservation Measure 3

Install Ventilation Fans in Storage Areas

The ventilation fan includes an adjustable dehumidistat for automatic operation and (2) 90 CFM fans which can easily be reversed to exhaust air, supply fresh air or provide a balanced air exchange. Built-in dampers prevent unwanted air infiltration and the units use a simple plug-in electrical connection. With addition of common plug-in "lamp timer", unit can be scheduled to run on a timed basis rather than via the included dehumidistat control. These units would save 2,818 kWh annually in electricity with a dollar savings of $234. The cost of the project is estimated at $600 with a payback of 2.6 years.

Energy Conservation Measure 4

Replace Exit Signs with LED Models

Replacing old 28 watt exit signs with new LED models will provide a brighter light and reduce maintenance costs of bulb replacement. With LED's 100,000 hour life, the bulbs should only need to be replaced every 11 years. This would save an additional 403 kWh with a dollar savings of $34. The cost to complete would be $60 after act 129 rebates and have a payback of 1.8 years.

Energy Conservation Measure 5

Replace Water Heater

The Rheem Hybrid Electric Water Heater features heat pump technology that makes it over TWICE as efficient as standard electric water heaters. When temperatures allow, the water heater runs on a heat pump. In the State College region it is expected that the water heater will run on the heat pump 60% of the time and the electric heating elements will only be used 40% of the time. The annual savings would be 2,857 kWh and $237. The project would cost $750 and have a payback of 3.16 years.

Audit Data & Reports

Building Characteristics

Building Data	State College Boro (Bellaire Court)
Building ID	Bellaire Court
Date of Audit	11/5/12
Street Address	729 Bellaire Ave
City/State/Zip	State College, Pa 16801
Roof Accessible w/o Ladder, Y/N	Yes
Floor Plan Dwg Available, Y/N	No
Design Data	
Lat./Long	40 Deg47'58.41"N 77Deg 77'50.50.77"W
Elevation Above Sea Level	1072 Ft
Orientation of Building Front	Southwest
Design HDD/CDD (Base 65^0F)	5736/826
Current Ambient Temp/Humidity/CO_2 Level	41.2 Deg F/26.2 % R.H./542 PPM
ENERGY STAR Data	
Gross Floor Area, Sq. Ft.	14,928 Sq Ft
% of Total Area Heated	100%
% of Total Area Cooled	60%
Open Weekends, Y/N	Yes
Number of PCs	15
Cooking Facilities, Y/N	Yes
No. of Walk-In Coolers/Freezers	0
Building Type, Based on 51% of Conditioned Space, Primary/Secondary/Admin/Other	Other/Apt Bldg
Number of Conditioned Floors Above Grade	1
Number of Conditioned Floors Below Grade	1
Year of Construction, Based on 51%	1970
Building Description	
Roof Construction/Insulation/Area	2Ft O.C Trussedl/Asphalt Shingle /Fiberglass
Wall Construction/Insulation	Block/Brick Faced
Glazing Type - Sgl/Dbl Pane - Blinds	Double/Yes
Glazing Area - % of Exposed Wall Area	20%
Ceiling or Open to Deck?	Ceiling
Ceiling Height	8 Ft
General Lighting Type	Flourescent
Type of Heating System	Electric
Type of Cooling System	Window Units

Building Schedule

Preliminary Building Use	
Average Hours/Week	168
Average Weeks/Year	52
After Hours Cleaning Y/N	No

Overall Building Schedule #1

Building Schedule During Months of								
Days	**Mon**	**Tues**	**Wed**	**Thurs**	**Fri**	**Sat**	**Sun**	**Hol**
Hours Open	16	16	16	16	16	16	16	16
Hours Closed	8	8	8	8	8	8	8	8
Peak No. of Occupants	40	40	40	40	40	40	40	40
Avg. No. of Occupants When Open	25	25	25	25	25	25	25	25

Overall Building Schedule #2

Building Schedule During Months of			June- Aug					
Days	**Mon**	**Tues**	**Wed**	**Thurs**	**Fri**	**Sat**	**Sun**	**Hol**
Hours Open								
Hours Closed								
Peak No. of Occupants								
Avg. No. of Occupants When Open								

Electric Utility Data

	Meter Read Dates		No.	Total	Peak	Peak	Total
	From	To	Days	KWh	KW	KVAR	$
1	7/1/12	7/31/2012	31	3,054			
2	6/1/2012	6/30/2012	30	1,495			
3	5/1/2012	5/31/2012	31	2,531			
4	4/1/2012	4/30/2012	30	3,740			
5	3/1/2012	3/31/2012	31	3,919			
6	2/1/2012	2/28/2012	28	3,866			
7	1/1/2012	1/31/2012	31	2,101			
8	12/1/2011	12/31/2011	31	701			
9	11/1/2011	11/30/2011	30	303			
10	10/1/2011	10/31/2011	31	201			
11	9/1/2011	9/30/2011	30	244			
12	8/1/2011	8/31/2011	31	416			
13	7/1/2011	7/31/2011	31	1,979			
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
		Totals	**396**	**24550**		**0**	**0**

Natural Gas Utility Data

No Gas at Site

	Meter Read Dates		No.	Total	"E" If	Total
	From	To	Days	CCF	Estimate	$
1	7/1/12	7/31/2012	31	N/A		
2	6/1/2012	6/30/2012	30	N/A		
3	5/1/2012	5/31/2012	31	N/A		
4	4/1/2012	4/30/2012	30	N/A		
5	3/1/2012	3/31/2012	31	N/A		
6	2/1/2012	2/28/2012	28	N/A		
7	1/1/2012	1/31/2012	31	N/A		
8	12/1/2011	12/31/2011	31	N/A		
9	11/1/2011	11/30/2011	30	N/A		
10	10/1/2011	10/31/2011	31	N/A		
11	9/1/2011	9/30/2011	30	N/A		
12	8/1/2011	8/31/2011	31	N/A		
13	7/1/2011	7/31/2011	31	N/A		
14						
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17						
18						
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21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
		Totals	396	0		0

Types of Energy-Using HVAC Equipment

Building ID	State College Boro (Bellaire Courts)
Primary Cooling	
Centrifugal Chiller	No
Reciprocating Chiller	No
Screw Chiller	No
Absorption Chiller	No
Package DX	No
Window Units	No
Air Cooled Heat Rejection	No
Water Cooled Heat Rejection	No
Primary Heating	
Hot Water Boiler	No
Electric Fan Coil	Yes
Furnace Gas Forced Air	No
Ground Source Heat Pump	No
Air Source Heat Pump	No
Recirculating Water Source Heat Pump	No
AHU/Terminal Systems	
Single Zone	Yes
Multi-Zone	Yes
Dual Duct	No
Variable Air Volume	No
Reheat	No
Fan Coil Units	Yes
Unit Ventilators	No
Packaged Terminal Air Conditioners	No
Steam/Hot Water Radiators/Convectors	No
Above System(s) w/Economizer	No
Dedicated Outdoor Air System	No
Other	
Cogeneration	No
Energy Monitoring and Control System	No
On-site Generation	No
Energy Recovery	No
Humidifiers/Dehumidifiers	Yes
Swimming Pool Heaters/Dehumidifiers	No
Other (Define)	No
Exhaust Systems	
Fume Hoods, Constant Volume	No
Fume Hoods, VAV	No
Kitchen Hoods	No
Restroom	No
Locker Room	No
General	No

Utility Service Audit Form

Electric Utility	
Electric Utility Company	**West Penn Power**
Account Number	**12904017322001**
Generation and Transmission Supplier	**First Energy Solutions**
Service Voltage	**208/120**
MDP Size in Amps	200
Meter Location	Back Side of Bldg
Meter Number	N/A
Power Factor Penalty	N/A
Secondary Transformer KVA/Temp Rating	N/A
Annual KWh	24,550
Annual Peak Demand	
Annual Load Factor	
Building Electrical Efficiency, KWh/Sq Ft/Yr	

Natural Gas Utility	
Natural Gas Utility	N/A
Account Number	N/A
Commodity Supplier	N/A
Meter Capacity, CFH	N/A
Meter Location	N/A
Meter Number	N/A
Annual Natural Gas Usage, CCF	N/A
Building Gas Usage Efficiency, kBTU/SF/Yr	N/A

Building Energy Utilization Index, kBTU/SF/Yr	

Current Environmental Conditions

Building ID	State College Boro (Bellaire Court)			
Date -	11/5/2012			
Control of Indoor Air Pollutants	**Yes/No**			
Cooking Hoods to Code & Functional	N/A			
Restroom Exhausts to Code & Functional	Yes			
Mechanical Room Exhaust to Code & Functional	Yes			
Combustion Equipment Properly Vented?	N/A			
Ventilation Verification via CO^2 Readings in PPM	**Low**	**High**	**Avg**	
Outside Ambient	404	410	407	
Thermal Conditions				
Control Mode	Cooling	Heating		
Average Temp/Humidity Readings	DB^0F	WB^0F	%RH	DP^0f
Outside Ambient		42	35%	36
Illumination				
Average Light Levels in Foot-Candles	Horiz	Vert		

Building Space Types

Building ID	State College Boro (Bellaire Court)
Offices	No
Bathrooms	Yes
Computer	No
Laboratories & Science Facilities	No
Administrative Areas	No
Gymnasium	No
Libraries	No
Auditorium	No
Home Economics Room	No
Cafeteria	No
Kitchen	Yes
Auto Repair Shop	No
Wood/Metal Shops	No
Locker Rooms	No
Ice Rink	No
Natatorium	No
School Store	No

Space Function and System Summary

Space Data	State College Boro (Bellaire Court)	State College Boro (Bellaire Court)
Space ID	Bellaire Court	Belleaire Court
Function Type	Sun Room	Storage Room
Floor Area, Sq Ft	330Sq Ft	448 Sq Ft
Space Usage		
Hours/ Week	40	40
Weeks/Year	52	52
Lighting		
Quantity/Type	(3) 26watt CFL	(3) 26 watt CFL
Condition	New	New
% Lamps Out	0	0
Spacing	10 Ft	10 Ft
Light Level, FC	106.9	21.2
Bi-Level Switching	No	No
Occupancy Sensor	No	No
Daylight Control	No	No
BMS Control	No	No
LED Exit Sign(s)	No	No
HVAC Type		
Primary Cooling		
Primary Heating	Fan Coil Units	Fan Coil Units
Condition	Good	Good
Room Control	Yes	No
Room Temp Setting	No	No
BMS Control	No	No
Room Temp	61.2 Deg F	61 Deg F
Humidity	41.10%	27.50%
CO_2 Level	574 PPM	630 PPM
Glazing		
Number/Size	(2)6'8"x6'4" (2)2'11"x6'5"	N/A
Type	Double and SinglePane	N/A
Orientation	(2)North (2) West (1) East	N/A
Condition	Good	N/A
Seals	Good	N/A
Shading	No	N/A

Space Function and System Summary

Space Data	State College Boro (Community Room)
Space ID	Community Room
Function Type	Community Room
Floor Area, Sq Ft	416 Sq Ft
Space Usage	
Hours/ Week	40
Weeks/Year	52
Lighting	
Quantity/Type	(3) 26 watt CFL's
Condition	Good
% Lamps Out	0
Spacing	6 Ft
Light Level, FC	32.2
Bi-Level Switching	No
Occupancy Sensor	No
Daylight Control	No
BMS Control	No
LED Exit Sign(s)	No
HVAC Type	
Primary Cooling	
Primary Heating	Fan Coil Units
AHU/Terminal Syster	31 Multi Zone
Condition	Good
Room Control	No
Room Temp Setting	No
BMS Control	No
Room Temp	62.2
Humidity	26%
CO_2 Level	760PPM
Glazing	
Number/Size	(10) 4'10"x4'9"
Type	Double
Orientation	West
Condition	Good
Seals	Good
Shading	None

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11 Reciproca
12 Screw Ch
13 Absorptic
14 Package I
15 Split DX
16 Air-Coole
17 Water-Cc

gal Chiller	20 Hot Water Boiler
ating Chiller	21 Steam Boiler
ıiller	22 Furnace
ɔn Chiller	23 Ground-Source Heat Pump
DX	24 Air-Source Heat Pump
	25 Recirculating Water Source Heat Pump
ed Heat Rejection	
ɔoled Heat Rejection	
	30 Single Zone
	31 Multi Zone
	32 Dual Duct
	33 Variable Air Volume
	34 Reheat
	35 Fan Coil Units
	36 Unit Ventilators
	37 Packaged Terminal Air Conditioners
	38 Steam/Hot Water Radiators/Convectors
	39 Above System(s) w/Economizer

Space Function and System Summary

Space Data	State College Boro (Storage #2)
Space ID	Storage #2
Function Type	Storage #2
Floor Area, Sq Ft	416 Sq Ft
Space Usage	
Hours/ Week	40
Weeks/Year	52
Lighting	
Quantity/Type	(3) 26watt CFL's
Condition	Good
% Lamps Out	0
Spacing	10Ft
Light Level, FC	18.7
Bi-Level Switching	No
Occupancy Sensor	No
Daylight Control	No
BMS Control	No
LED Exit Sign(s)	No
HVAC Type	
Primary Cooling	
Primary Heating	Fan Coil Units
AHU/Terminal Syster	31 Multi Zone
Condition	Good
Room Control	No
Room Temp Setting	No
BMS Control	No
Room Temp	60.4Deg F
Humidity	27%
CO_2 Level	580 PPM
Glazing	
Number/Size	N/A
Type	N/A
Orientation	N/A
Condition	N/A
Seals	N/A
Shading	N/A

10 Centrifug
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13 Absorptic
14 Package
15 Split DX
16 Air-Cool
17 Water-Cc

gal Chiller	20 Hot Water Boiler
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ıiller	22 Furnace
ɔn Chiller	23 Ground-Source Heat Pump
DX	24 Air-Source Heat Pump
	25 Recirculating Water Source Heat Pump
ed Heat Rejection	
ɔoled Heat Rejection	
	30 Single Zone
	31 Multi Zone
	32 Dual Duct
	33 Variable Air Volume
	34 Reheat
	35 Fan Coil Units
	36 Unit Ventilators
	37 Packaged Terminal Air Conditioners
	38 Steam/Hot Water Radiators/Convectors
	39 Above System(s) w/Economizer

Space Function and System Summary

Space Data	State College Boro (Bellaire Court)
Space ID	Bellaire Court
Function Type	Stairwell
Floor Area, Sq Ft	250 Sq Ft
Space Usage	
Hours/ Week	40
Weeks/Year	52
Lighting	
Quantity/Type	(4) 26 watt CFL's
Condition	Good
% Lamps Out	0
Spacing	10-15Ft
Light Level, FC	22
Bi-Level Switching	No
Occupancy Sensor	No
Daylight Control	No
BMS Control	No
LED Exit Sign(s)	No
HVAC Type	
Primary Cooling	
Primary Heating	Fan Coil Units
AHU/Terminal Syster	31 Multi Zone
Condition	Good
Room Control	No
Room Temp Setting	No
BMS Control	No
Room Temp	63.2Deg F
Humidity	28%
CO_2 Level	570 PPM
Glazing	
Number/Size	(1)5'9"x4'9"
Type	Double Pane
Orientation	NE
Condition	Good
Seals	Yes
Shading	No

10 Centrifug
11 Reciproca
12 Screw Ch
13 Absorptic
14 Package I
15 Split DX
16 Air-Cool
17 Water-Co

gal Chiller	20 Hot Water Boiler
ating Chiller	21 Steam Boiler
iller	22 Furnace
on Chiller	23 Ground-Source Heat Pump
DX	24 Air-Source Heat Pump
	25 Recirculating Water Source Heat Pump
ed Heat Rejection	
ooled Heat Rejection	
	30 Single Zone
	31 Multi Zone
	32 Dual Duct
	33 Variable Air Volume
	34 Reheat
	35 Fan Coil Units
	36 Unit Ventilators
	37 Packaged Terminal Air Conditioners
	38 Steam/Hot Water Radiators/Convectors
	39 Above System(s) w/Economizer

Air Distribution System

Air Handler Unit ID	State College Boro (Bellaire Court)
Manufacturer	N/A
Model	N/A
Type	N/A
Condition	N/A
Fan	
Type	N/A
Total CFM	N/A
Outside Air Temperature	N/A
Supply Temperature	N/A
Capacity Modulation Type	N/A
Chiller Control	
Occupied/Unoccupied	N/A
Time Schedule	N/A
Outside Air Temperature	N/A
Supply Temperature	N/A
Capacity Modulation Type	N/A
AHU Control	
Fan Control	N/A
Supply Air Temperature	N/A
Capacity Modulation Type	N/A
Ventilation Control	No
Damper, Fixed/Motorized	N/A
CO^2 Monitoring	No
Occupied/Unoccupied	No
Fan On/Off/Auto	No
Ventilation On/Off	No
Temperature Setback/Setup	No
Ductwork	
Sealing	N/A
Lining/Insulation	N/A
Condition	N/A
Exhaust Fans	N/A

Central Chiller Cooling System

Chiller		
Chiller ID	N/A	
Manufacturer	N/A	
Model	N/A	
Type	N/A	
Capacity, Tons	N/A	
Refrigerant	N/A	
Full Load, EER/COP	N/A	
IPLV, EER/COP	N/A	
Flow Rate, GPM	N/A	
Hot Water EWT/LWT	N/A	
Condition	N/A	
Chilled Water Pumps		
Pump ID	N/A	
Type	N/A	
Motor HP	N/A	
Condition	N/A	
Heat Rejection Unit		
Unit ID	N/A	
Manufacturer	N/A	
Model	N/A	
Type	N/A	
Fan HP	N/A	
Control Type	N/A	
Condition	N/A	
Cooling Tower Pumps		
Pump ID	N/A	
Type	N/A	
Motor HP	N/A	
Condition	N/A	
Distribution Piping		
Piping Material	N/A	
Insulation	N/A	
Overall Condition	N/A	

Central Heating System

Furnace		
Furnace ID	N/A	N/A
Manufacturer	Singer	Berko
Model	Wall Unit	Fan Coil
Type	Electric	Electric
Gas Forced Air	No	No
Input, MBH	N/A	N/A
Output, MBH	N/A	N/A
Furnace Efficiency, %	80%	80%
Steam Operating Pressure, PSIG	N/A	N/A
Hot Water EWT/LWT	N/A	N/A
Condition	Fair	Good
Pumps		
Pump ID	N/A	N/A
Manufacturer	N/A	N/A
Model	N/A	N/A
Type	N/A	N/A
Motor HP	N/A	N/A
Condition	N/A	N/A
Distribution Piping		
Piping Material	N/A	N/A
Insulation	N/A	N/A
Steam Traps	No	N/A
Overall Condition	N/A	N/A
Maintenance		
Inspection Frequency	Yearly	Yearly
Water Treatment	N/A	N/A
Air/Fuel Ratio Optimization	N/A	N/A

Rooftop HVAC Unit

Unit ID		
Conditioned Space	**N/A**	
Manufacturer	N/A	
Model	N/A	
Capacity, Tons	N/A	
Overall Condition of Unit	N/A	
Main Fan & Motor		
Fan Motor HP	N/A	
Drive Type	N/A	
Fan Type	N/A	
Total Airflow, CFM	N/A	
Cooling		
Capacity Total, MBH	N/A	
Capacity Sensible, MBH	N/A	
EER/SEER	N/A	
Refrigerant Type	N/A	
Heating		
Heating Input, MBH	N/A	
Heating Output, MBH	N/A	
Heating Efficiency	80%	
Filters		
Type	N/A	
Cond. of Filters	N/A	
Outside Air		
Outside Air, CFM	N/A	
Damper Type	N/A	
Damper Control	N/A	

Central Building Management System

Unit ID	State College Boro (Bellaire Court)
Manufacturer	N/A
Model	N/A
Version	N/A
Remote Access	N/A
Boiler Control	
Occupied/Unoccupied	N/A
Time Schedule	N/A
Outside Air Temperature	N/A
Supply Temperature	N/A
Hot Water Reset	N/A
Capacity Modulation Type	N/A
Chiller Control	
Occupied/Unoccupied	N/A
Time Schedule	N/A
Outside Air Temperature	N/A
Supply Temperature	N/A
Capacity Modulation Type	N/A
Chilled Water Reset	N/A
AHU Control	
Fan Control	N/A
Supply Air Temperature	N/A
Capacity Modulation Type	N/A
Ventilation Control	N/A
Damper, Fixed/Motorized	N/A
CO^2 Monitoring	N/A
Occupied/Unoccupied	N/A
Fan On/Off/Auto	N/A
Ventilation On/Off	N/A
Temperature Setback/Setup	N/A
Scheduling and Monitoring	
Indoor Lighting	No
Outdoor Lighting	No
Unit Heaters	No
Exhaust Fans	No