

Appendix G: Commercial Building Energy Assessment Reports

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1010	G-127
1011	G-141
1012	G-158
1013	G-171
1014	G-187
1015	G-200
1016	G-217
1017	G-230
1018	G-247
1019	G-260
1020	G-276
1021	G-289
1022	G-306
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Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1001

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

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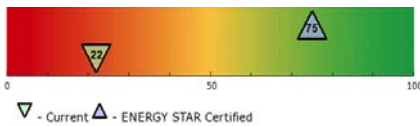
positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

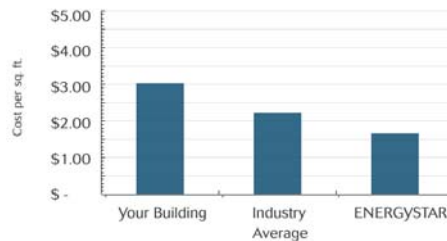


Your building's ENERGY STAR® Energy Performance Rating is **22**. Its Energy Use Index is **184 kbtu per sq. ft.**

Your building's ENERGY STAR score of 22 ranks you below average versus your peers, and falls well below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

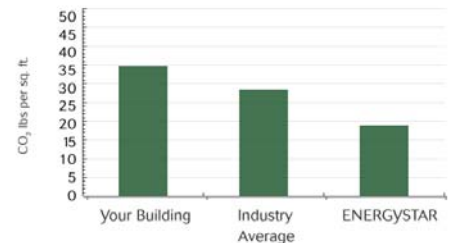


Your building's annual cost per square foot is **\$3.02 per sq. ft.** overall.

Your building's cost per square foot is \$0.80 more than the industry average. Your annual cost can be reduced by \$26,336 or 26.3% by achieving an ENERGY STAR score of 50.



Carbon Footprint



Your building's annual carbon footprint is **519 metric tons of CO₂** or **34.59 lbs per sq. ft.**

Your building's carbon emissions are 22.3% more than the industry average, and can be reduced by 6 lbs per sq. ft. by achieving an ENERGY STAR score of 50.

You could save up to **\$26,336** annually or **\$131,680** over 5 years by raising your ENERGY STAR score to the level of 50.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Low Energy Star Rating
- Little HVAC Control
- Low Humidity
- HVAC is over Ventilating



How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

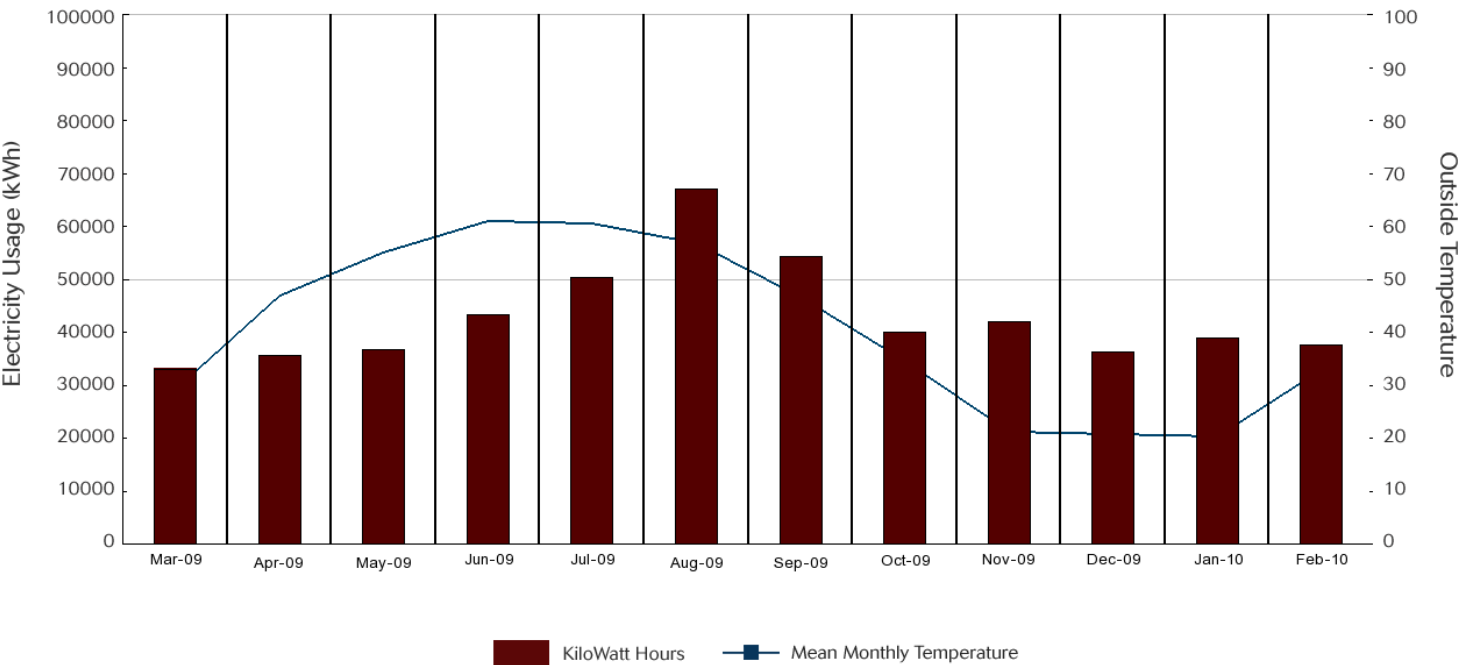
Electricity Consumption

- Electricity comprises 56.6% of your total utility cost, and 28.9% of your total utility consumption.
- Your Total Spend on electricity is \$56,620, so when considering savings opportunities, remember you can only save some percentage of that total.
- Demand costs are included with kWh.

Monthly Electricity Costs



Electricity Consumption And Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

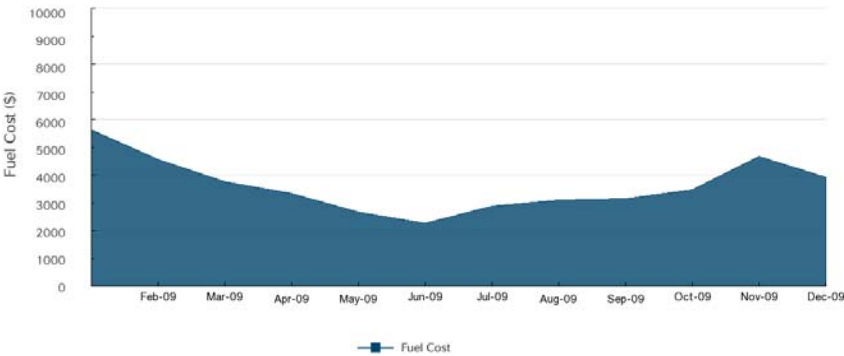


Monthly Fuel Costs

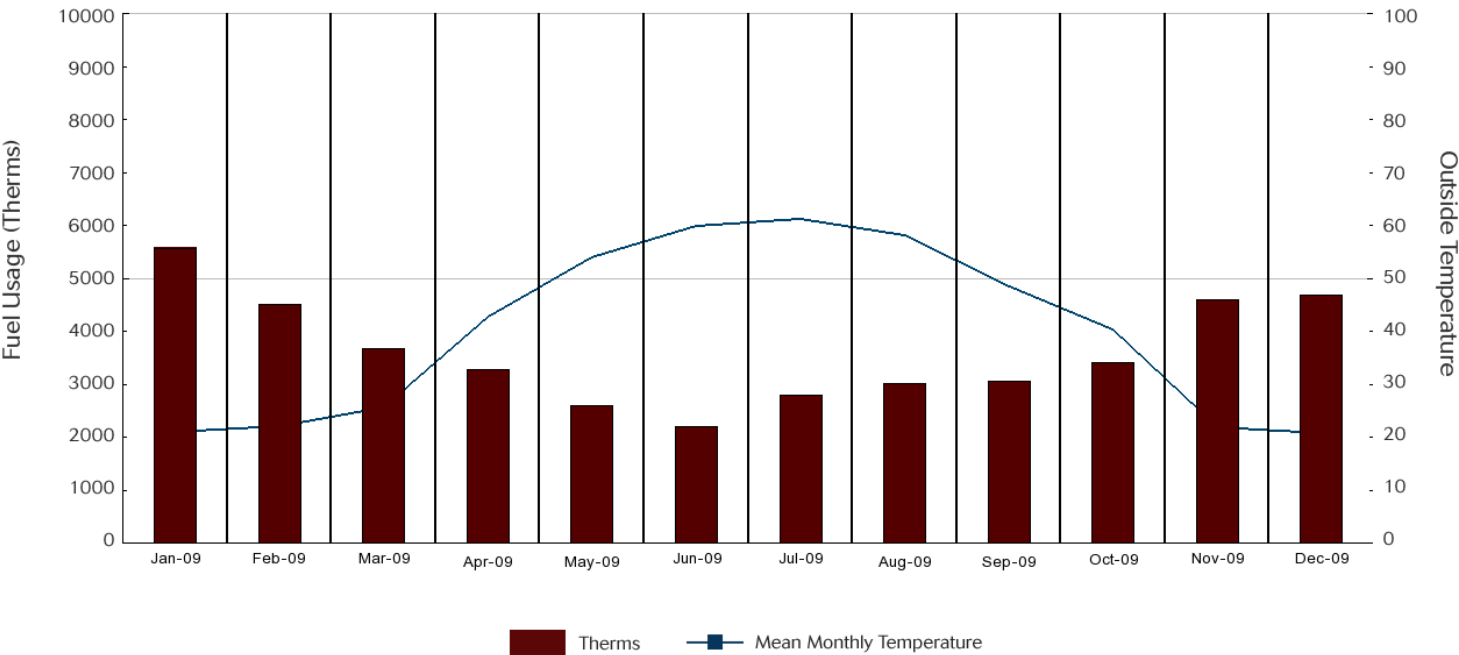
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 43.4% of your total utility cost, and 71.1% of your total utility consumption.
- Your Total Spend on Fuel is \$43,394, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption and Outside Air Temperature



Building Comfort and Ventilation Analysis

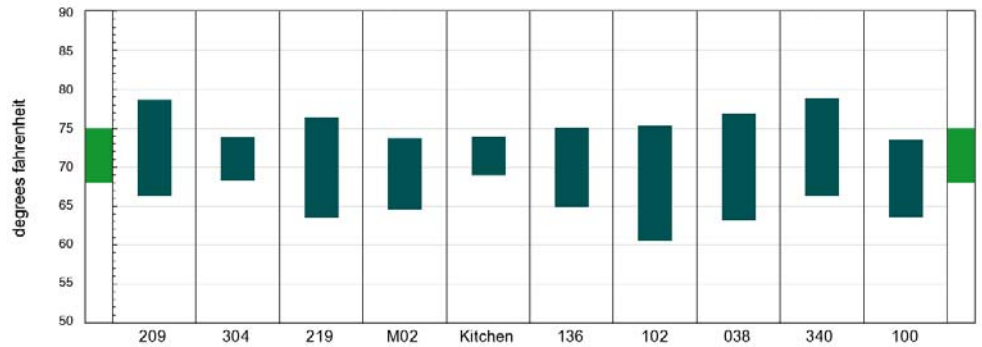
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control and properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building is out of control with ample opportunity to save energy.

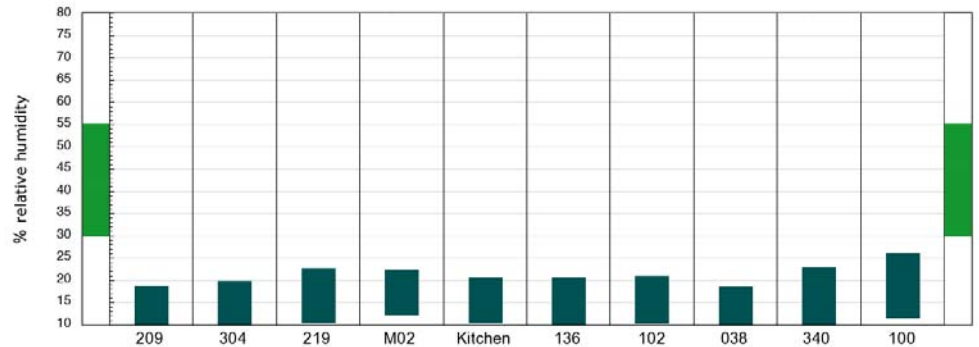
- 6 space(s) were too warm at times
- 8 space(s) were too cool at times
- 10 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 10 space(s) had low relative humidity at times

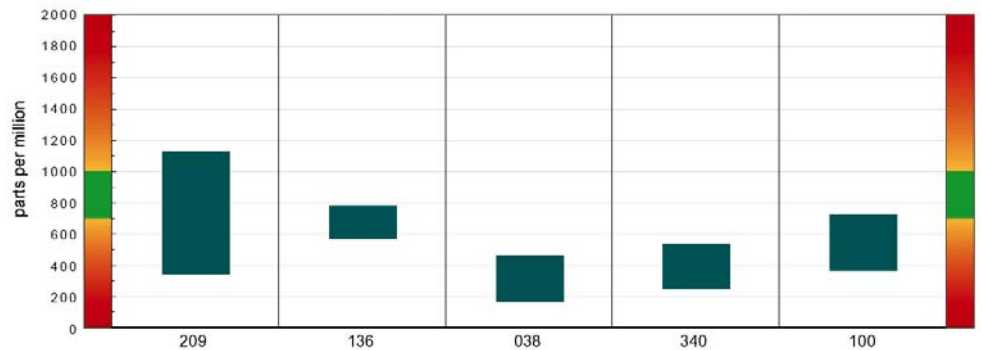


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 1 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: ± 1°F]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating Set point is 72 / 68
	Occupied/Unoccupied Cooling Set point is 78 / 80

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the control system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Further Comfort & Energy Recommendations

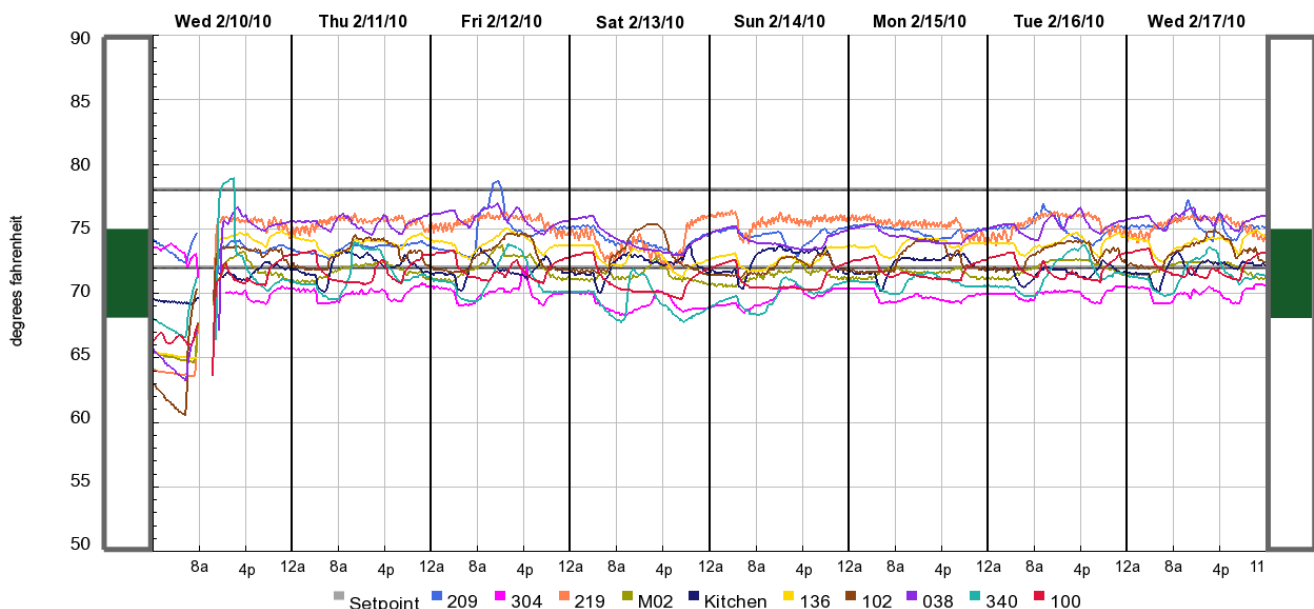
- Lower the heating set point
- Increase the amount of heating set back possible during the unoccupied times

Monitor Statistics

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%To Pt	SV†
209		66	79	74	28%	12
304		68	74	70	0%	6
219		64	76	75	72%	13
M02		65	74	71	4%	9
Kitchen		69	74	72	0%	5
136		65	75	73	4%	10
102		61	75	72	5%	15
038		63	77	75	57%	14
340		66	79	71	7%	12
100		64	73	71	4%	10

These statistics are for occupied times only.

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

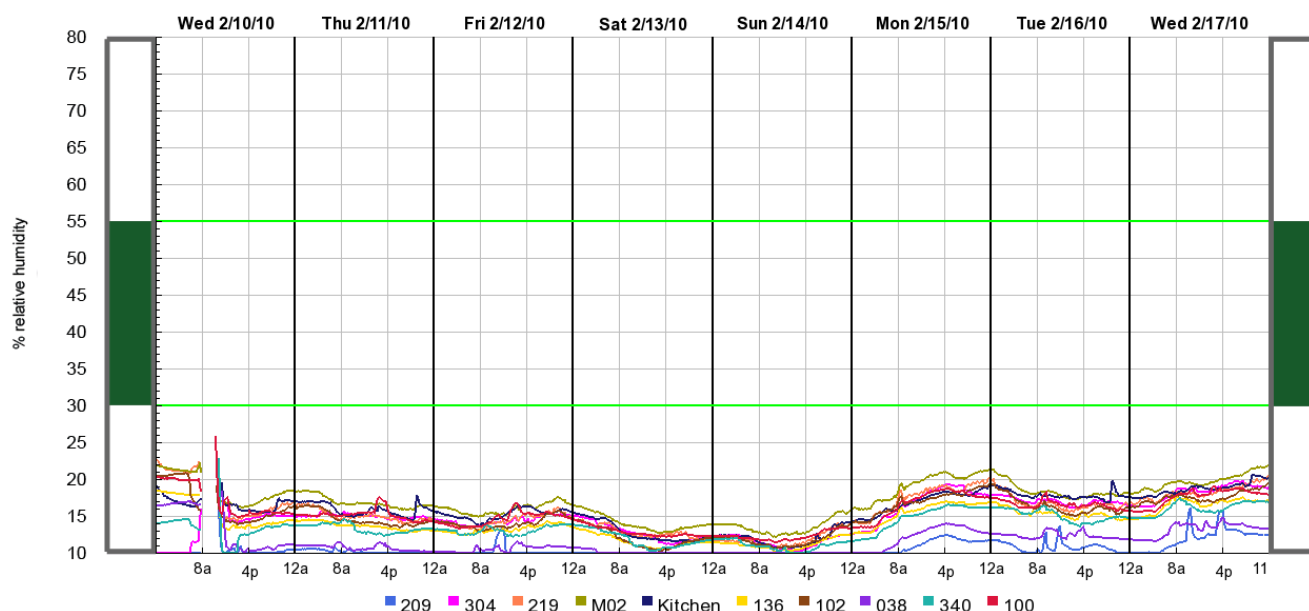
- Add humidification system (in Alaska this may not make sense)
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	%
209		5	19	9	100%
304		8	20	15	100%
219		10	23	16	100%
M02		12	22	17	100%
Kitchen		11	21	16	100%
136		10	21	14	100%
102		10	21	15	100%
038		8	18	11	100%
340		9	23	14	100%
100		11	26	15	100%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	%
209		345	1129	429	98%
136		572	781	635	90%
038		164	461	239	100%
340		245	538	318	100%
100		368	723	434	99%

These statistics are for occupied times only.

* % Time out of Range

Energy Savings Opportunities

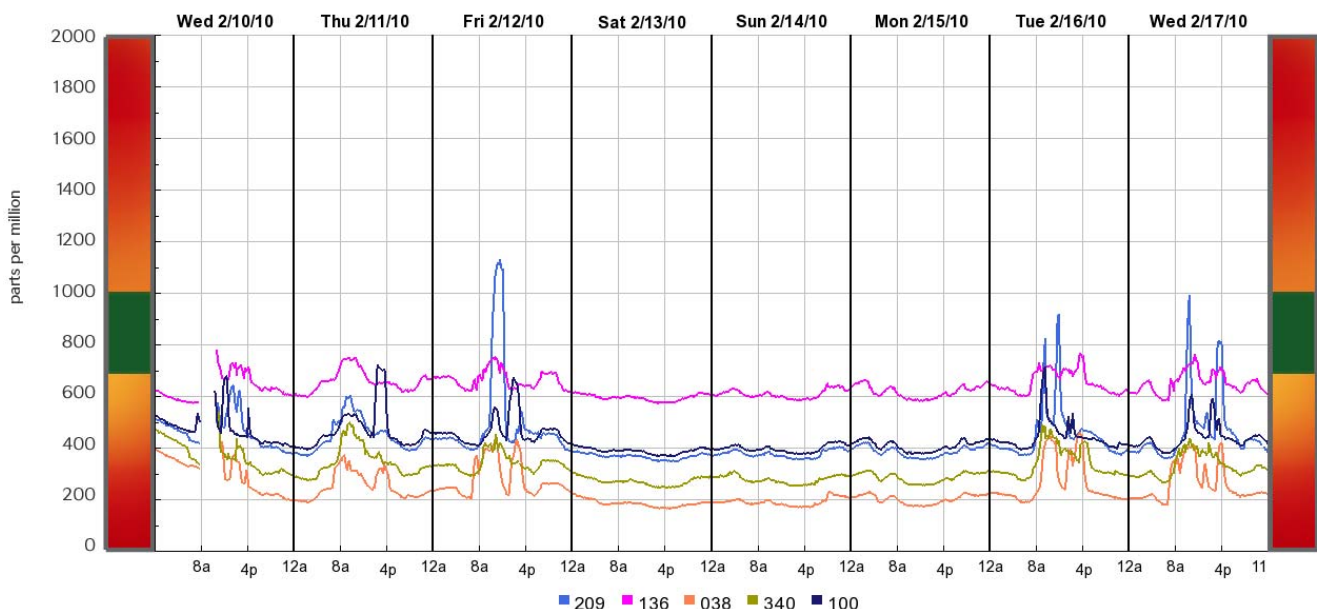
Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

Comfort & Health Recommendations

- Increase the amount of ventilation into the building.



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 23.5 average occupied hours

Energy Savings Opportunities

Our findings indicate your building is not wasting energy on lights.

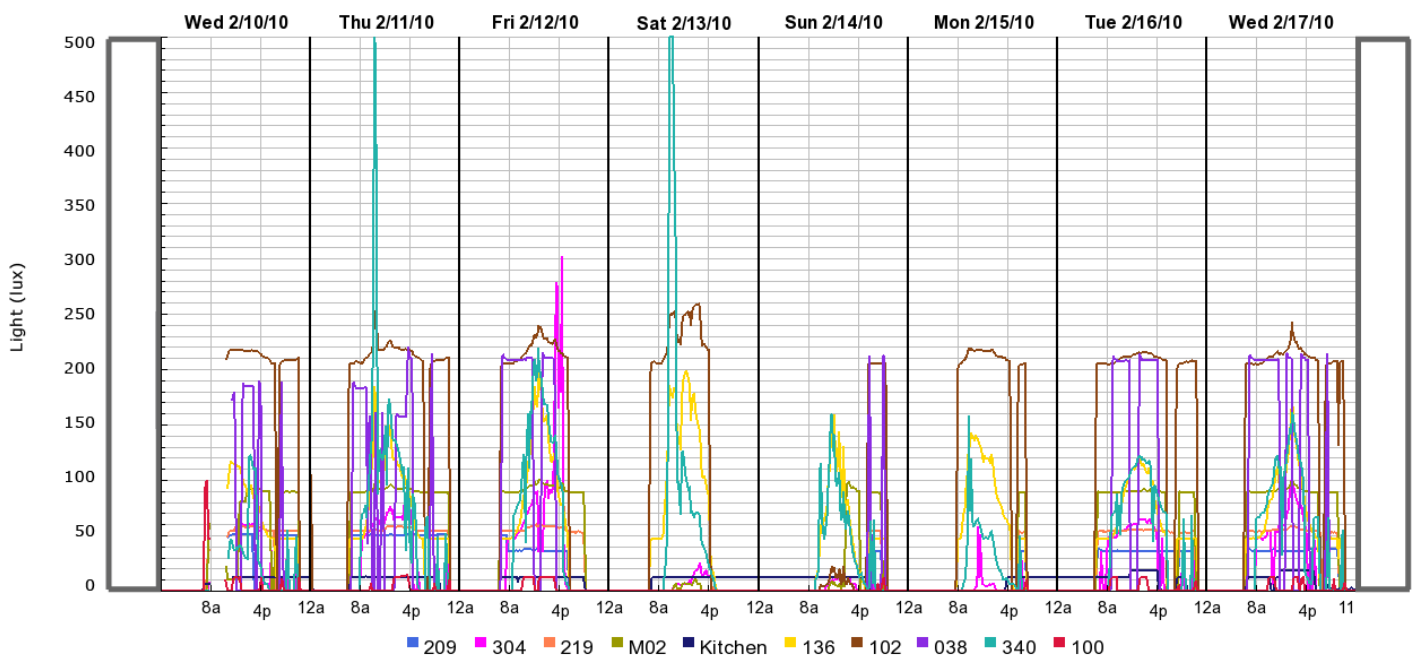
Energy Recommendations Based on Measurements

- No recommendations at this time.

Further Energy Recommendations

- No recommendations at this time.

Monitor	Alert Lvl	Measured On-Time
209		8.6 hrs
304		2.8 hrs
219		9.9 hrs
M02		10. hrs
Kitchen		14. hrs
136		2.4 hrs
102		11. hrs
038		4.1 hrs
340		5.1 hrs
100		2.3 hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99503

Outdoor Temperature

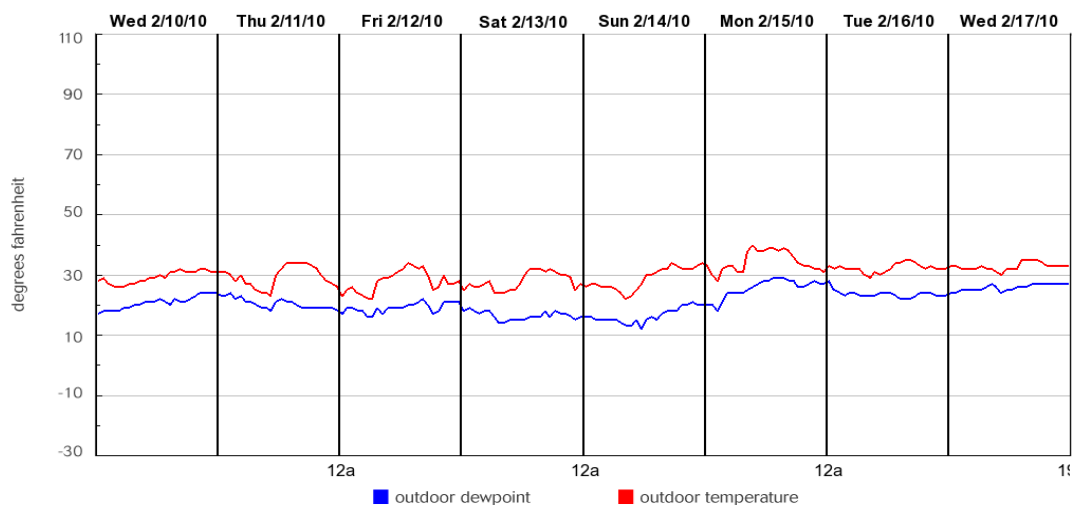
Test Period Avg: 2/10/10 – 2/17/10	Heating Degree Days	Cooling Degree Days
30 °F	35	0

Outdoor Temperature and Dew Point

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dew point during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	XXXXX
Contact	XXXXX
Address	XXXXX
Building Information	
Building Background	Building Usage: Office Building Size (sq ft): 33069 # of Stories: 4 Building Status: Existing Construction type: Cement Block LEED Cert.: None Heating System: Boiler Domestic Hot Water: Electric Resistance Economizer: Yes Cooling System: Chiller - Cooling Tower
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
209	20413
304	20160
219	20158
M02	20156
Kitchen	20148
136	20140
102	20139
038	20127
340	20114
100	17223

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	00:00	72	78	Yes
Tue				
Wed				
Thu				
Fri	23:59	68	80	No
Sat				
Sun				

Building Description

Office			
Gross Floor Area	33069	Weekly Operating Hours	50
Number of Workers on Main Shift	75	Number of PCs	77
Office Air-Conditioned	50% or more	Office Heated	50% or more

Building Controls Information

Current Controls	
Controls Type	Pneumatic DDC Hybrid
Schedule Type	Time Clock
Air Delivery Method	Constant Volume (CV)
Air-Flow Modulation	N/A

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
3/16/09	33000	\$3,367	80	\$0
4/15/09	35640	\$4,063	79	\$0
5/15/09	36780	\$4,261	126	\$0
6/15/09	43380	\$4,998	147	\$0
7/16/09	50220	\$5,674	154	\$0
8/17/09	67140	\$6,713	135	\$0
9/16/09	54300	\$5,760	135	\$0
10/15/09	39960	\$4,656	131	\$0
11/17/09	42000	\$4,706	84	\$0
12/15/09	36240	\$4,271	86	\$0
1/14/10	38880	\$4,121	85	\$0
2/12/10	37500	\$4,029	83	\$0
TOTAL:	515040	\$56,620	1325	\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
1/9/09 5561		\$5,638
2/9/09 4498		\$4,572
3/6/09 3678		\$3,750
4/8/09 3264		\$3,335
5/8/09 2587		\$2,657
6/9/09 2197		\$2,266
7/10/09 2802		\$2,875
8/9/09 3014		\$3,087
9/8/09 3065		\$3,139
10/6/09 3400		\$3,475
11/7/09 4592		\$4,670
12/11/09 4673		\$3,930
TOTAL:	43331	\$43,394

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1002

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

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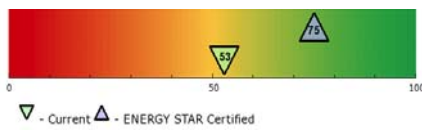
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Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

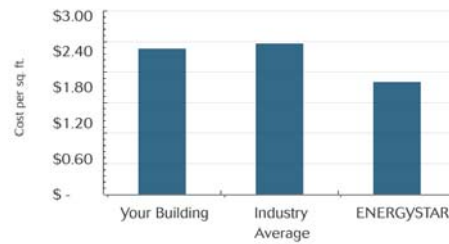


Your building's ENERGY STAR® Energy Performance Rating is **53**. Its Energy Use Index is **133 kbtu per sq. ft.**

Your building's ENERGY STAR score of 53 ranks you close to your peers, and falls below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

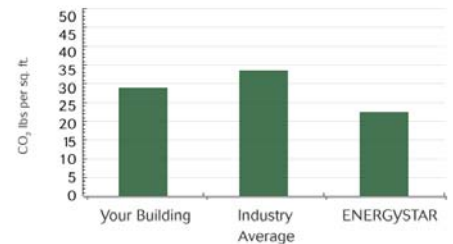


Your building's annual cost per square foot is **\$2.37 per sq. ft.** overall.

Your building's cost per square foot is \$0.54 more than the ENERGY STAR certification level. Your annual cost can be reduced by \$39,338 or 22.6% by achieving an ENERGY STAR score of 75.



Carbon Footprint



Your building's annual carbon footprint is **961 metric tons of CO₂** or **28.93 lbs per sq. ft.**

Your building's carbon emissions are 29.3% more than an ENERGY STAR certified building, and can be reduced by 7 lbs per sq. ft. by achieving an ENERGY STAR score of 75.

You could save up to **\$39,338** annually or **\$196,690** over 5 years by raising your ENERGY STAR score to the level of 75.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Electrical Usage **does not** track outside temperature.
- HVAC systems are out of control.
- HVAC system is over-ventilating fresh air.
- No Retro-Commissioning program.



How Does Your Building Use Electricity Today?

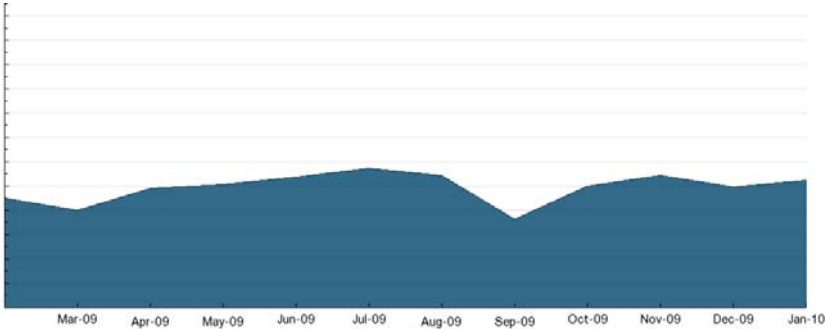
This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

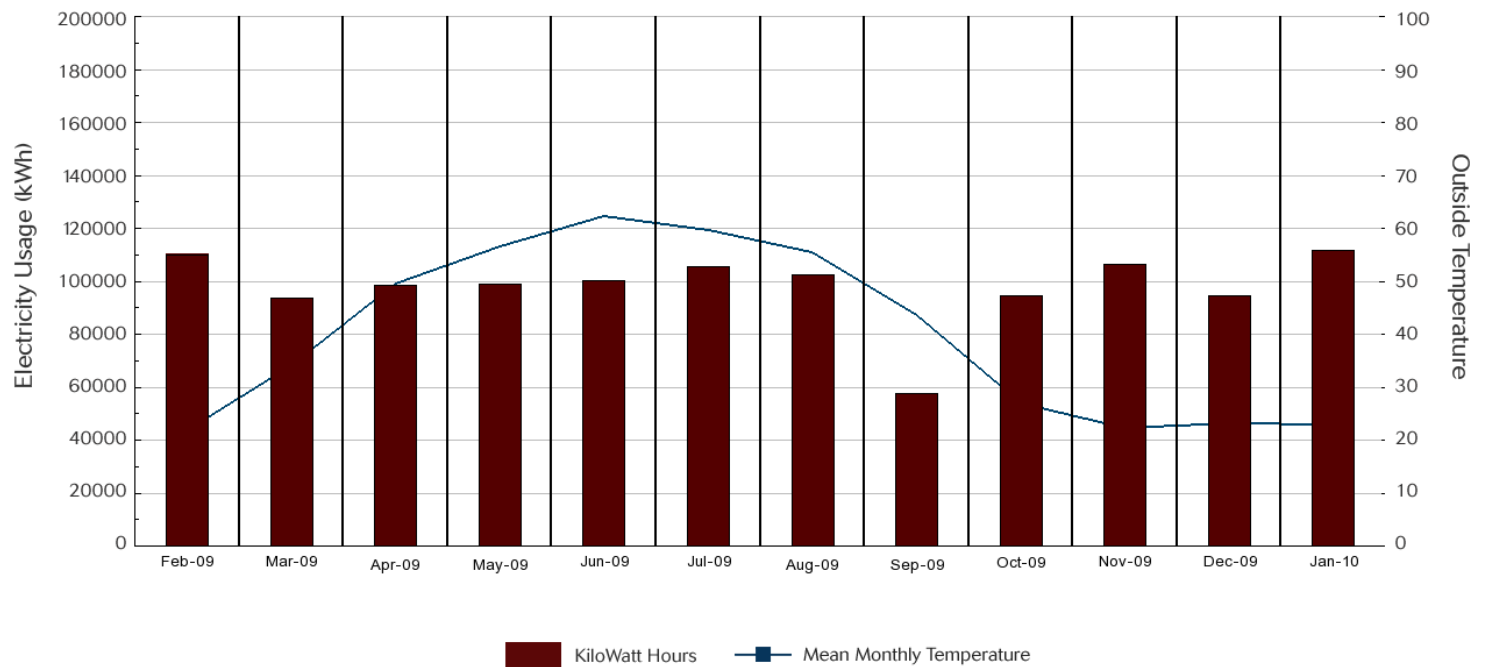
Electricity Consumption

- Electricity comprises 68.2% of your total utility cost, and 41.3% of your total utility consumption.
- Your Total Spend on electricity is \$118,567, so when considering savings opportunities, remember you can only save some percentage of that total.
- Demand costs are included in the overall costs of electricity.

Monthly Electricity Costs



Electricity Consumption And Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

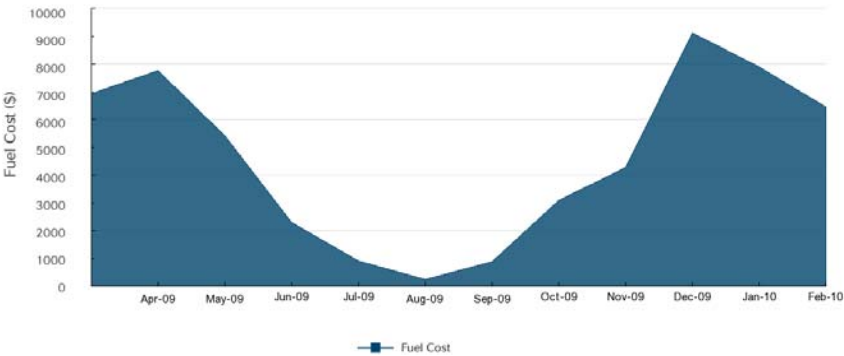


Monthly Fuel Costs

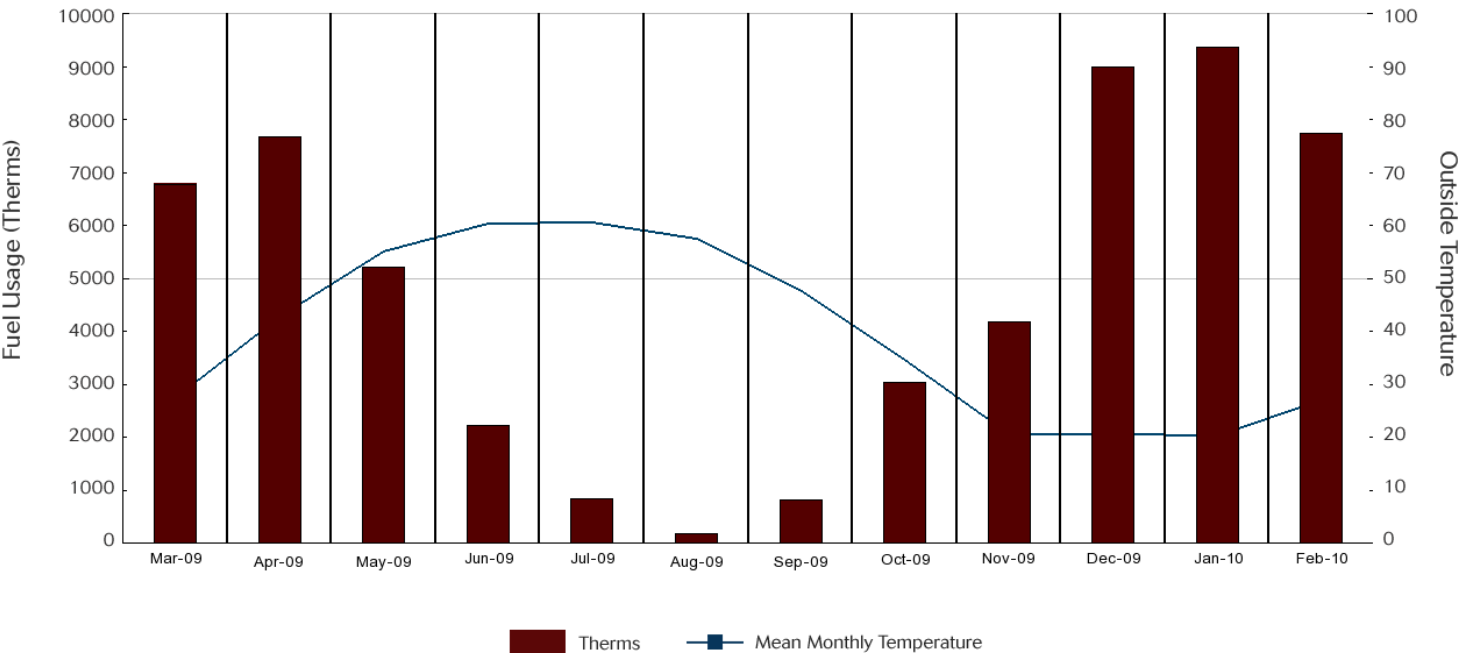
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 31.8% of your total utility cost, and 58.7% of your total utility consumption.
- Your Total Spend on Fuel is \$55,250, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption And Outside Air Temperature



Building Comfort and Ventilation Analysis

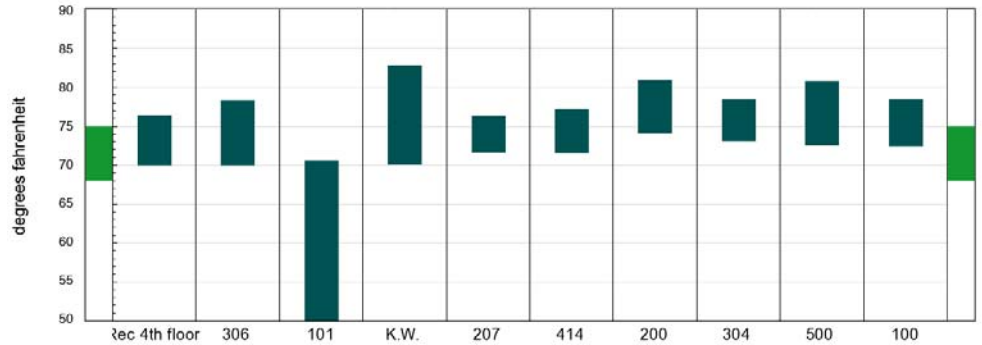
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building is out of control with ample opportunity to save energy.

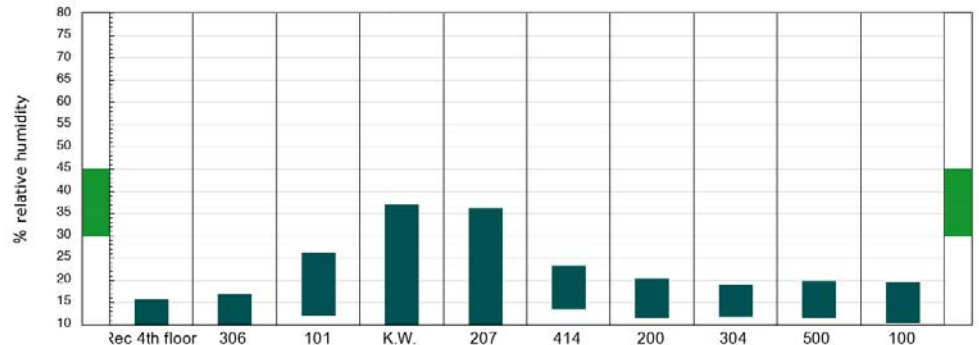
- 9 space(s) were too warm at times
- 1 space(s) were too cool at times
- 10 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 10 space(s) had low relative humidity at times

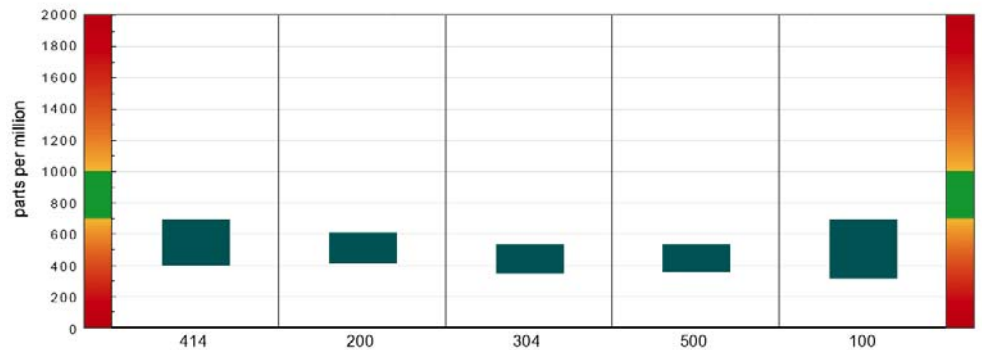


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: $\pm 1^\circ\text{F}$]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating Setpoint is 68 / 68
	Occupied/Unoccupied Cooling Setpoint is 75 / 75

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Further Comfort & Energy Recommendations

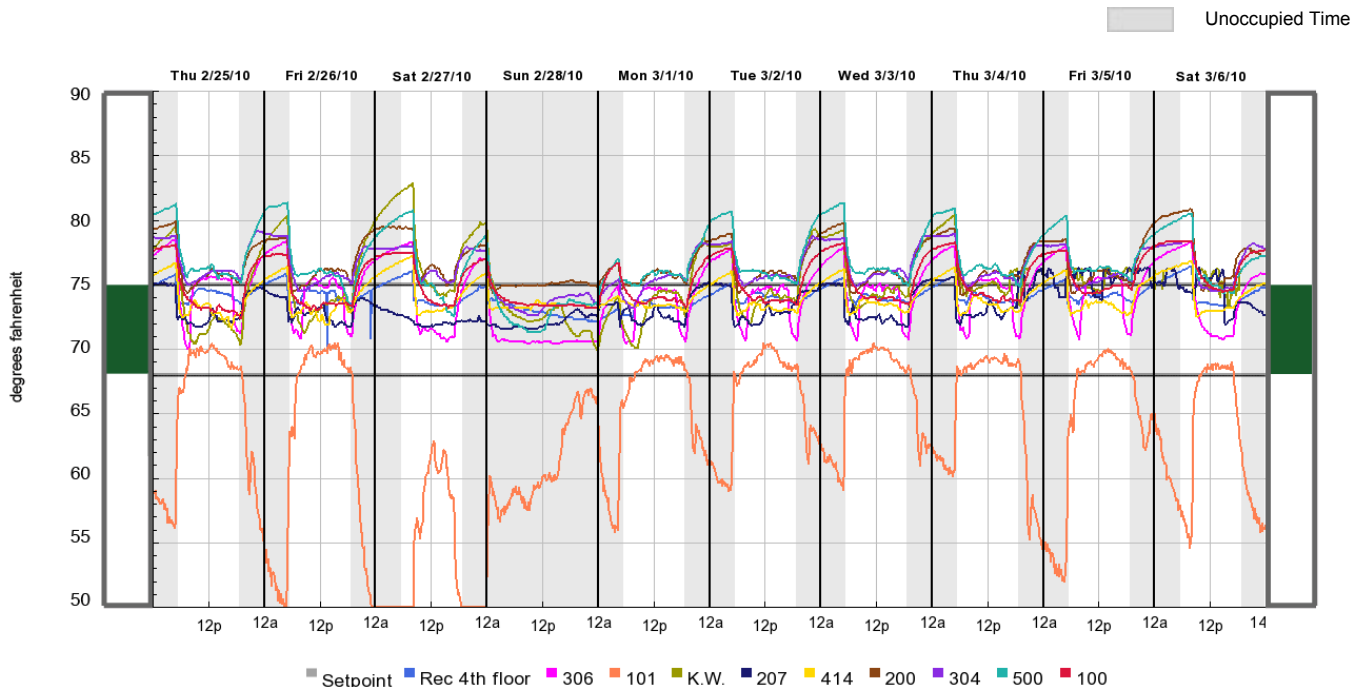
- Increase the amount of heating set back possible during the unoccupied times

Monitor Statistics

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%To Rng	SV†
Rec 4th floor		73	76	74	5%	5
306		70	78	74	28%	9
101		42	70	67	24%	20
K.W. 5th floor		70	83	74	23%	9
207		72	76	73	15%	4
414		72	77	73	5%	5
200		74	81	76	80%	6
304		73	78	76	81%	4
500		73	81	76	87%	6
100		73	78	74	15%	5

These statistics are for occupied times only.

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

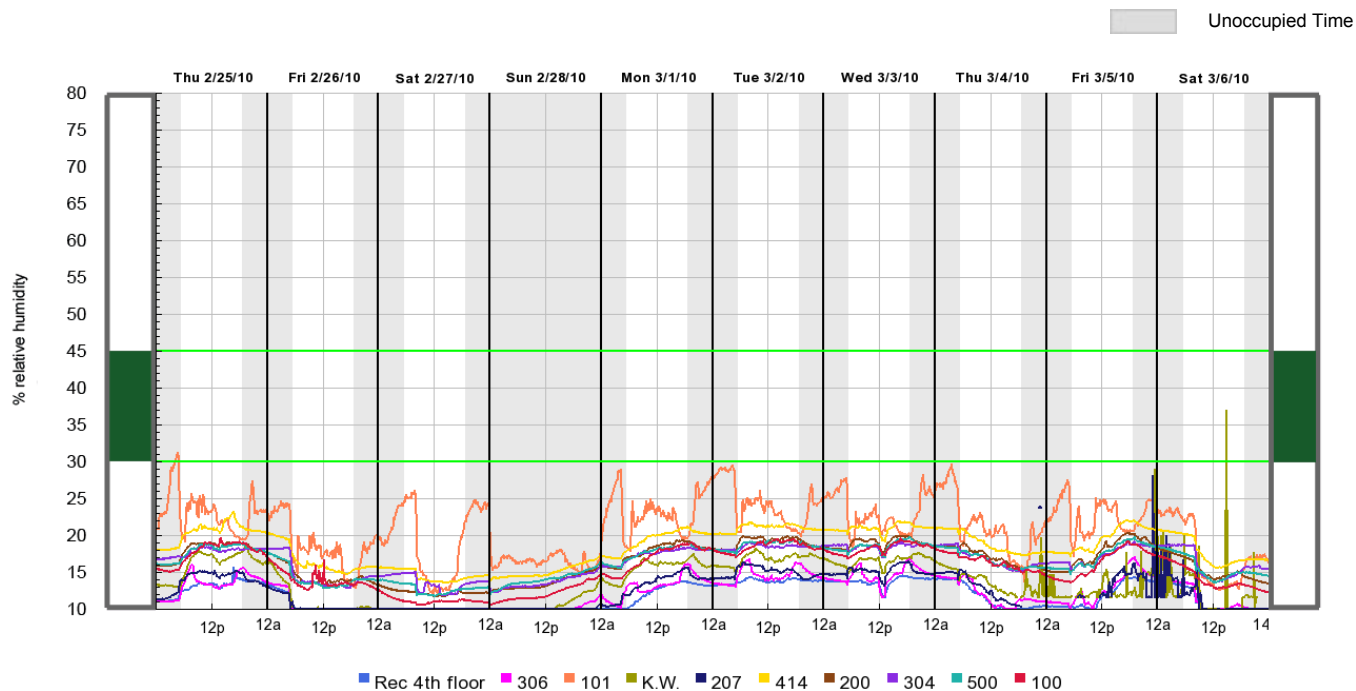
- Add humidification system, if applicable
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	%
Rec 4th floor		6	16	11	100%
306		6	17	12	100%
101		12	26	20	100%
K.W.		0	37	13	98%
207		0	36	12	94%
414		14	23	19	100%
200		12	20	17	100%
304		12	19	16	100%
500		12	20	17	100%
100		11	20	16	100%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	%
414		406	692	469	100%
200		414	610	487	100%
304		350	532	418	100%
500		360	532	439	100%
100		316	693	405	100%

These statistics are for occupied times only.

* % Time out of Range

Energy Savings Opportunities

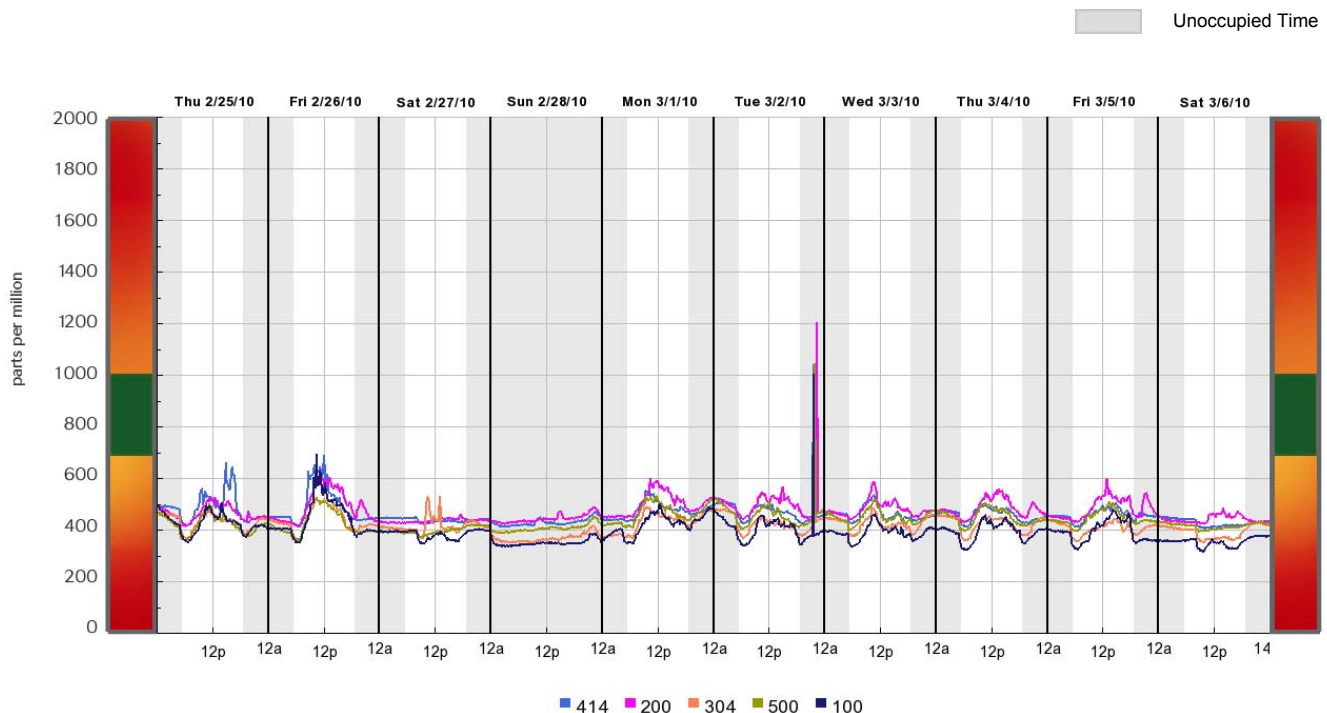
Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

Comfort & Health Recommendations

- No recommendations at this time



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 11.1 average occupied hours

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

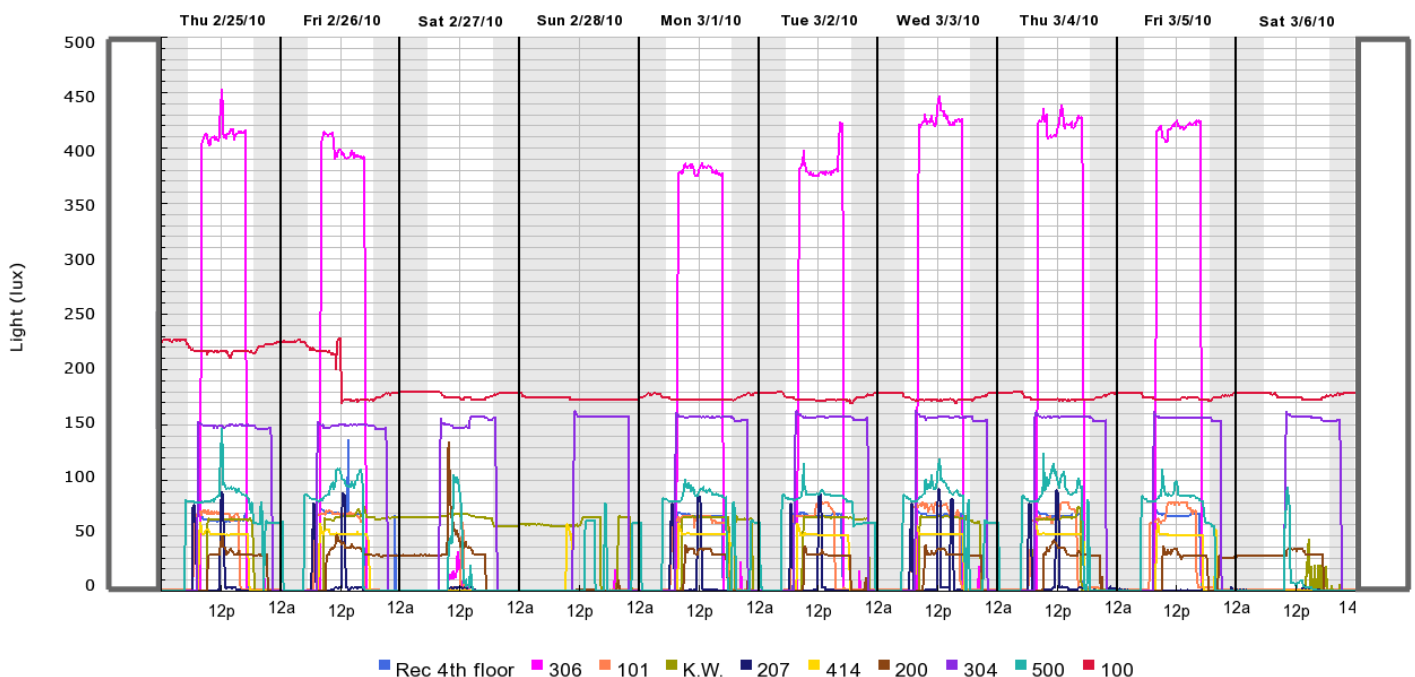
- Verify the light schedule & reduce unoccupied hours operation

Further Energy Recommendations

- Replace inefficient lamps with new high efficiency lamps
- Install occupancy sensors for individual zones
- Install daylight controls on the perimeter
- Reduce after hours use through coordination with the cleaning crews

Monitor	Alert Lvl	Measured On-Time
Rec 4th floor		6.5 hrs
306		6.4 hrs
101		6.8 hrs
K.W.		11. hrs
207		1.0 hrs
414		7.2 hrs
200		9.3 hrs
304		13. hrs
500		11. hrs
100		23. hrs

Unoccupied Time



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99503

Outdoor Temperature

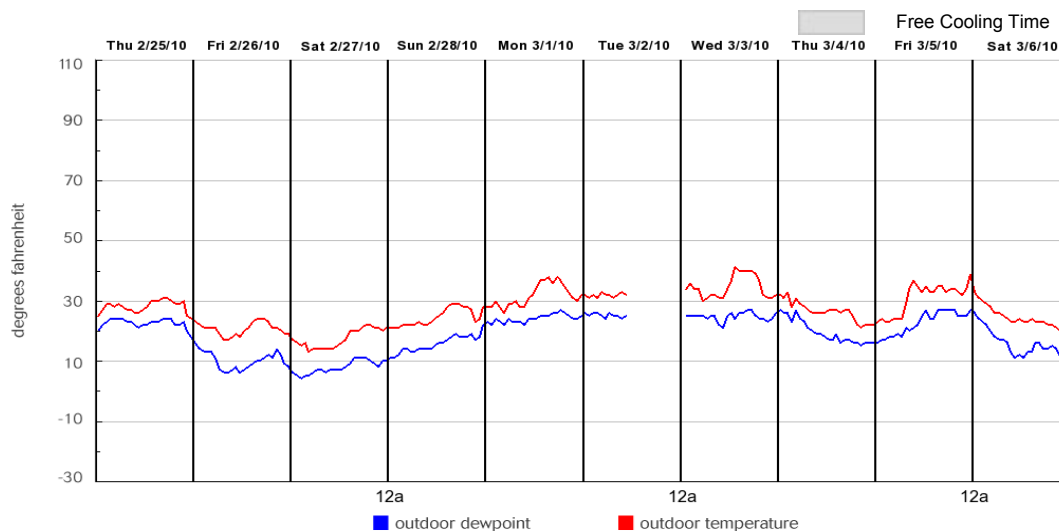
Test Period Avg: 2/25/10 – 3/6/10	Heating Degree Days	Cooling Degree Days
27 °F	38	0

Outdoor Temperature and Dew Point

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dew point during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	1002
Contact	
Address	Anchorage, AK 99503
Building Information	
Building Background	Building Usage: Office Building Size (sq ft): 73202 # of Stories: 5 Building Status: Existing Construction type: High Rise LEED Cert.: None Heating System: Boiler Domestic Hot Water: Gas or Other Fuel Economizer: No Cooling System: Chiller - Air Cooled
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
Rec 4th floor	20431
306	20420
101	20418
K.W.	20416
207	20415
414	20300
200	20295
304	20293
500	20289
100	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	05:30	68	75	Yes
Tue				
Wed				
Thu	18:30	68	75	No
Fri				
Sat				

Building Description

Office			
Gross Floor Area	73202	Weekly Operating Hours	65
Number of Workers on Main Shift	168	Number of PCs	161
Office Air-Conditioned	50% or more	Office Heated	50% or more

Parking			
Enclosed Floor Area	0	Non-Enclosed Floor Area (w/roof)	0
Open Floor Area (w/o roof)	20000	Weekly Hours of Access	168

Building Controls Information

Current Controls	
Controls Type	Pneumatic DDC Hybrid
Schedule Type	Time Clock
Air Delivery Method	Variable Air Volume
Air-Flow Modulation	Inlet Guide Vane

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
2/24/09	109760	\$9,005	232	\$0
3/24/09	93440	\$8,028	227	\$0
4/22/09	98400	\$9,828	231	\$0
5/22/09	99040	\$10,156	255	\$0
6/22/09	100160	\$10,739	297	\$0
7/23/09	105280	\$11,444	308	\$0
8/24/09	102560	\$10,835	274	\$0
9/23/09	57760	\$7,258	250	\$0
10/22/09	94720	\$9,983	247	\$0
11/23/09	106400	\$10,848	247	\$0
12/21/09	94400	\$9,960	247	\$0
1/21/10	111680	\$10,483	266	\$0
TOTAL:	1173600	\$118,567	3081	\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
3/12/09 6769		\$6,920
4/8/09 7679		\$7,760
5/14/09 5207		\$5,410
6/11/09 2214		\$2,283
7/16/09 845		\$912
8/13/09 179		\$244
9/10/09 803		\$870
10/15/09 3033		\$3,106
11/12/09 4171		\$4,277
12/10/09 8990		\$9,121
1/14/10 9353		\$7,883
2/11/10 7736		\$6,464
TOTAL:	56979	\$55,250

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1003

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

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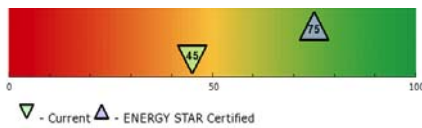
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Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

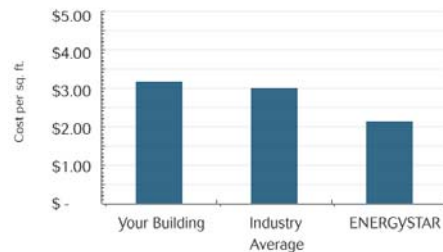


Your building's ENERGY STAR® Energy Performance Rating is **45**. After all energy usage has been converted to KBTUs, your Energy Use Index is **150 kbtu per sq. ft.**

Your building's ENERGY STAR score of 45 ranks you close to your peers, and falls below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

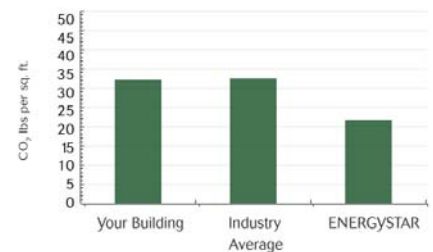


Your building's annual cost per square foot is **\$3.16 per sq. ft.** overall.

Your building's cost per square foot is \$1.03 more than the ENERGY STAR certification level. Your annual cost can be reduced by \$338,704 or 32.5% by achieving an ENERGY STAR score of 75.



Carbon Footprint



Your building's annual carbon footprint is **4,796 metric tons of CO₂** or **32.03 lbs per sq. ft.**

Your building's carbon emissions are 48.2% more than an ENERGY STAR certified building, and can be reduced by 10 lbs per sq. ft. by achieving an ENERGY STAR score of 75.

You could save up to **\$338,704** annually or **\$1,693,520** over 5 years by raising your ENERGY STAR score to the level of 75.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Your building has some control issues
- Your building is over-ventilated



How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

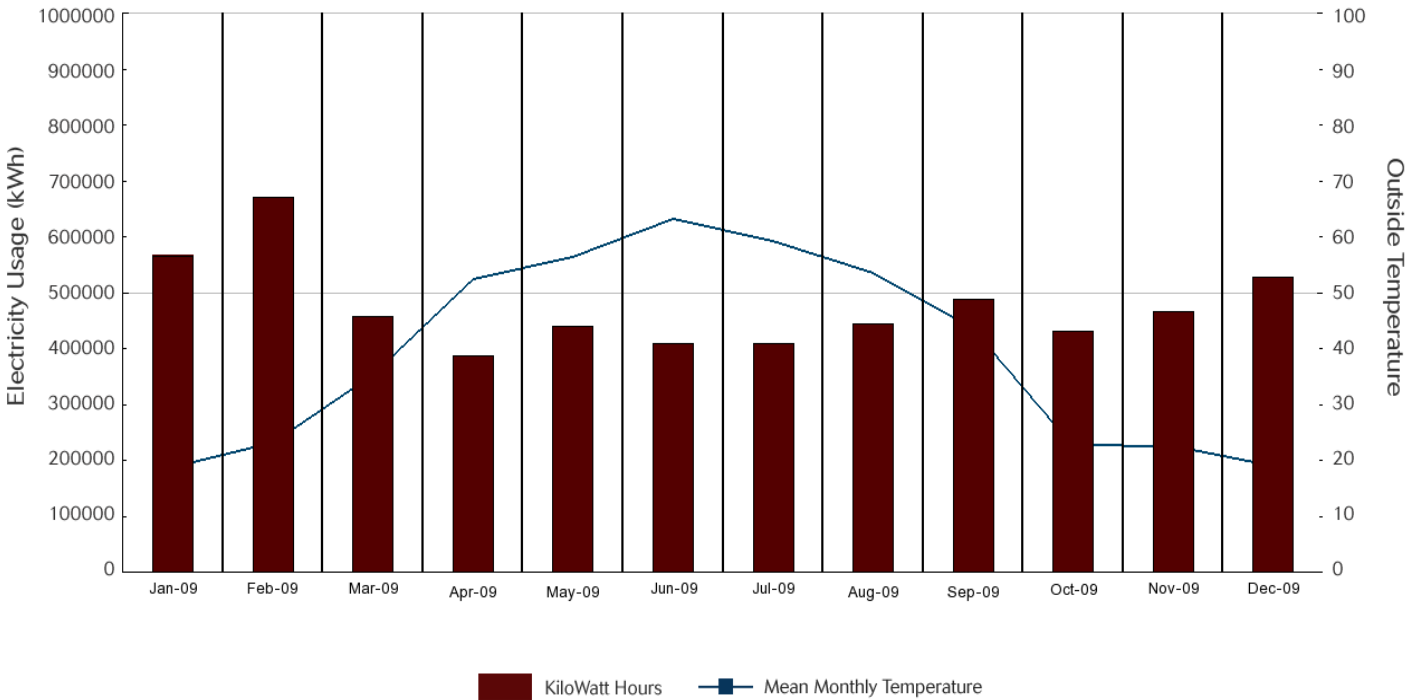
Electricity Consumption

- Electricity comprises 70.6% of your total utility cost, and 39.1% of your total Kbtu utility consumption.
- Your Total Spend on electricity is \$735,667, so when considering savings opportunities, remember you can only save some percentage of that total.
- Demand is included as part of electricity costs.

Monthly Electricity Costs



Electricity Consumption And Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

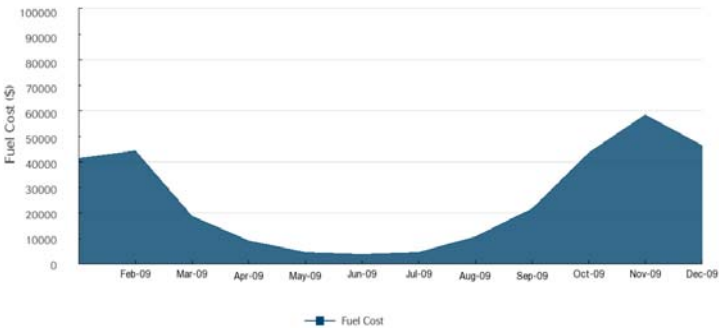


Monthly Fuel Costs

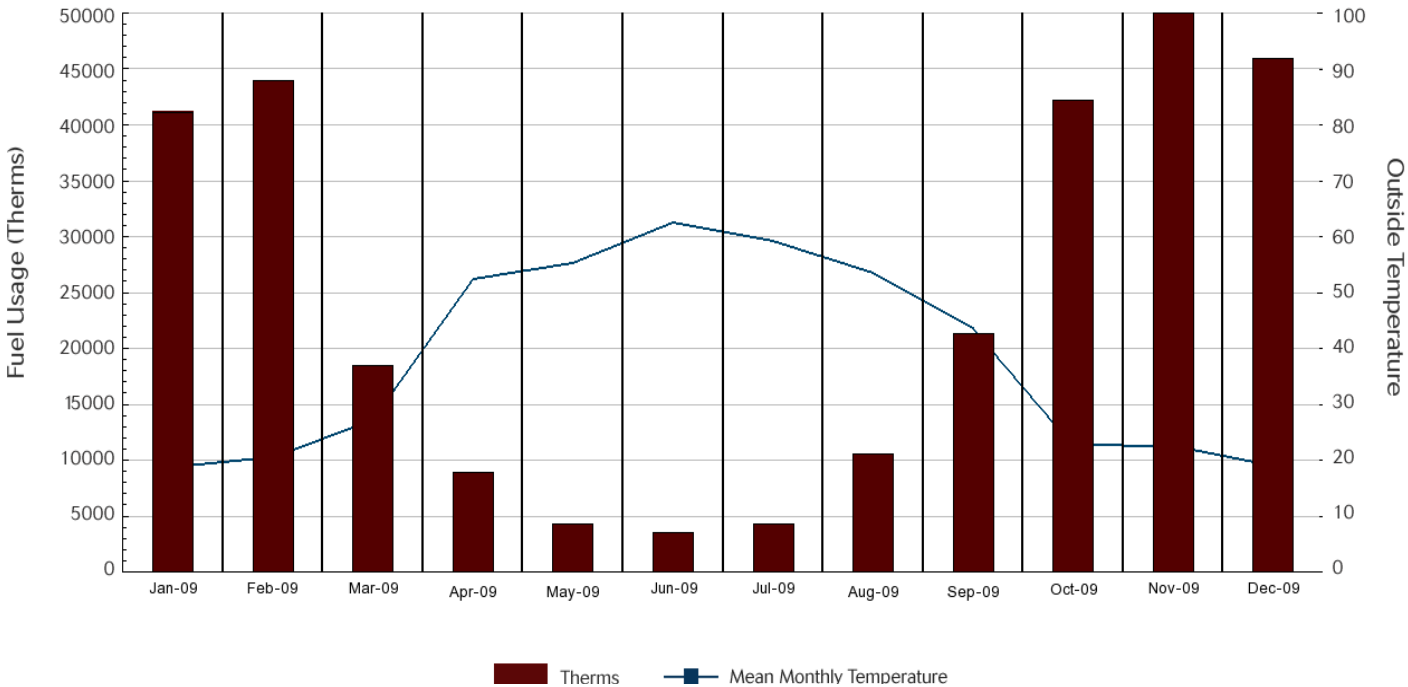
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 29.4% of your total utility cost, and 60.9% of your total Kbtu utility consumption.
- Your Total Spend on Fuel is \$306,458, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption and Outside Air Temperature



Building Comfort and Ventilation Analysis

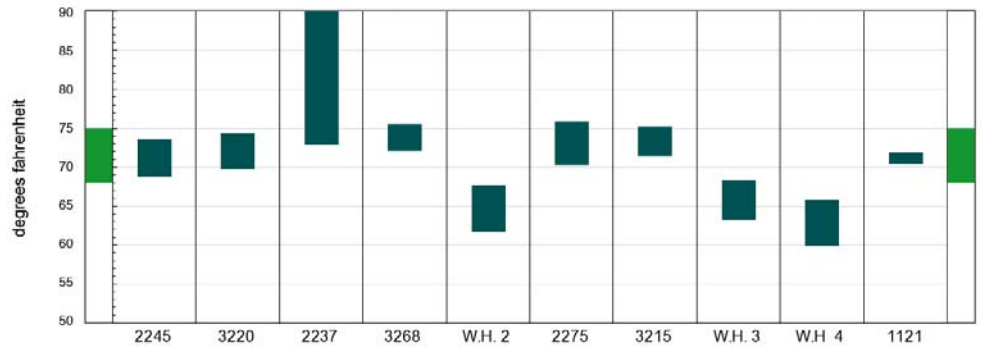
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building has some control issues in specific sections.

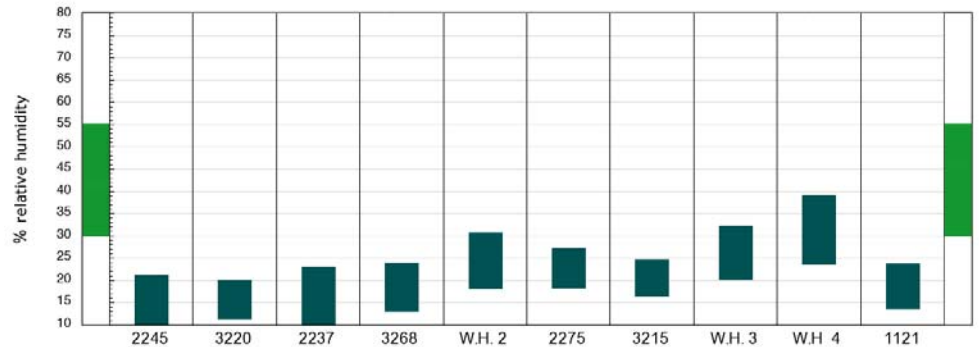
- 5 space(s) were too warm at times
- 4 space(s) were too cool at times
- 7 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 10 space(s) had low relative humidity at times

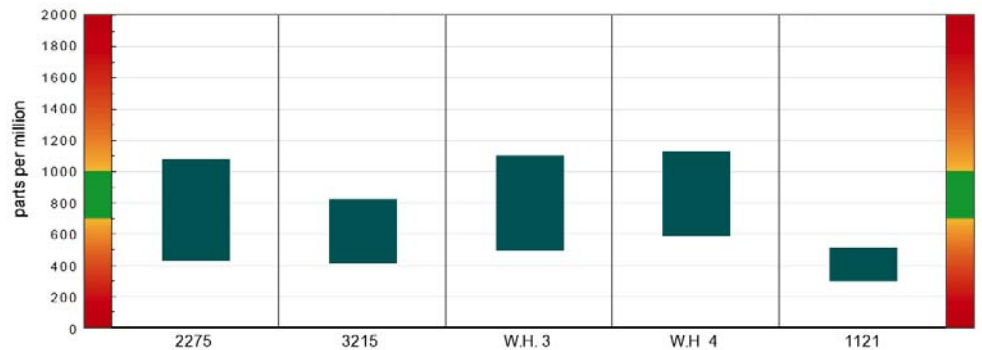


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 3 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: ± 1°F]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating Set point is 60 / 60
	Occupied/Unoccupied Cooling Set point is 80 / 80

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Further Comfort & Energy Recommendations

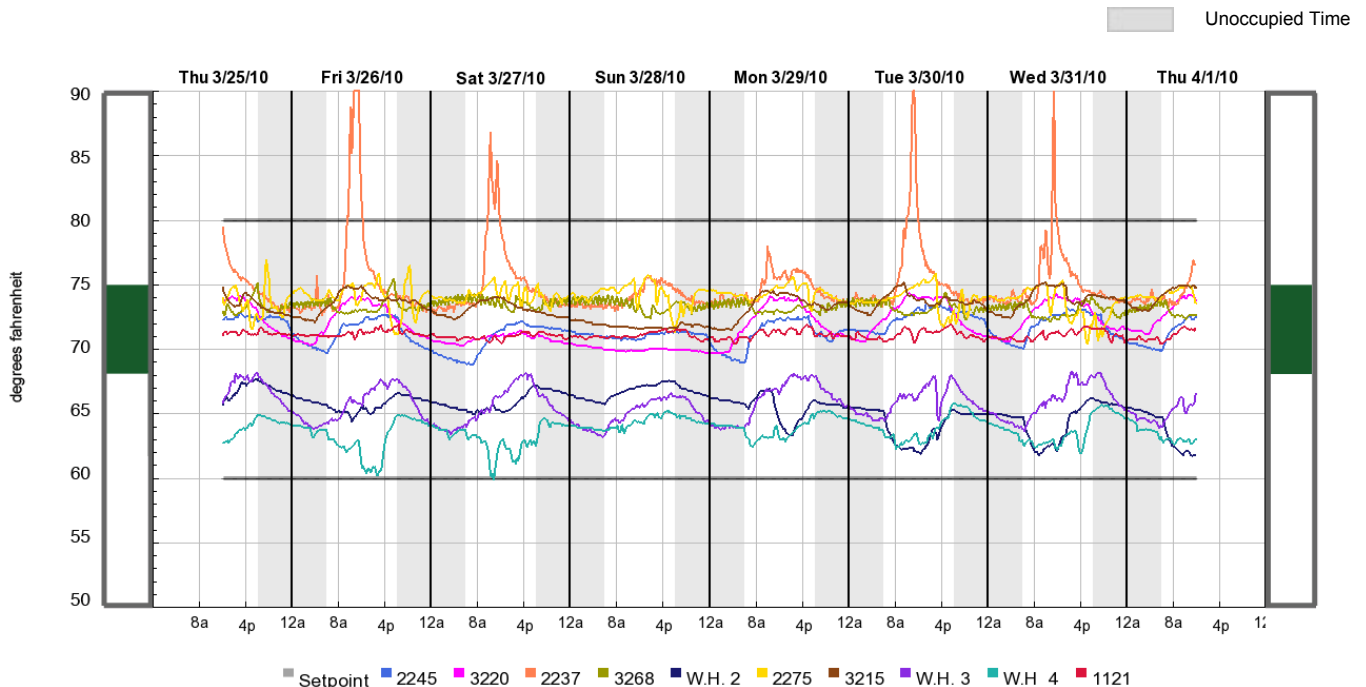
•

Monitor Statistics

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%ToR*	SV†
2245		69	73	72	1%	3
3220		70	74	73	4%	8
2237		73	90	76	53%	17
3268		72	75	73	1%	3
W.H. 2		62	68	65	95%	4
2275		71	76	74	19%	9
3215		72	75	74	7%	2
W.H. 3		64	68	66	97%	3
W.H. 4		60	66	63	96%	5
1121		71	72	71	4%	8

These statistics are for occupied times only.

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

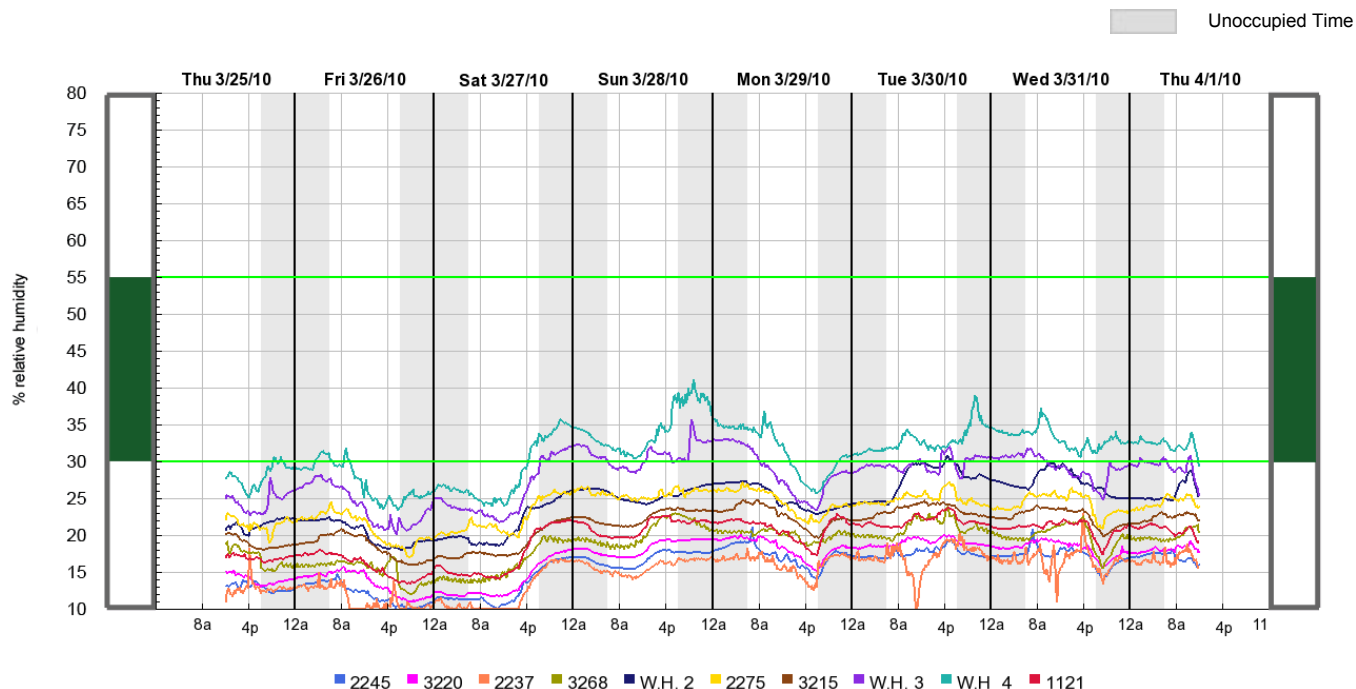
- Add humidification system if needed by further study
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
2245		10	21	15	100%
3220		11	20	17	100%
2237		4	23	14	100%
3268		13	24	19	100%
W.H. 2		18	31	24	99%
2275		18	27	24	100%
3215		16	25	21	100%
W.H. 3		20	32	27	82%
W.H. 4		23	39	30	41%
1121		14	24	19	100%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

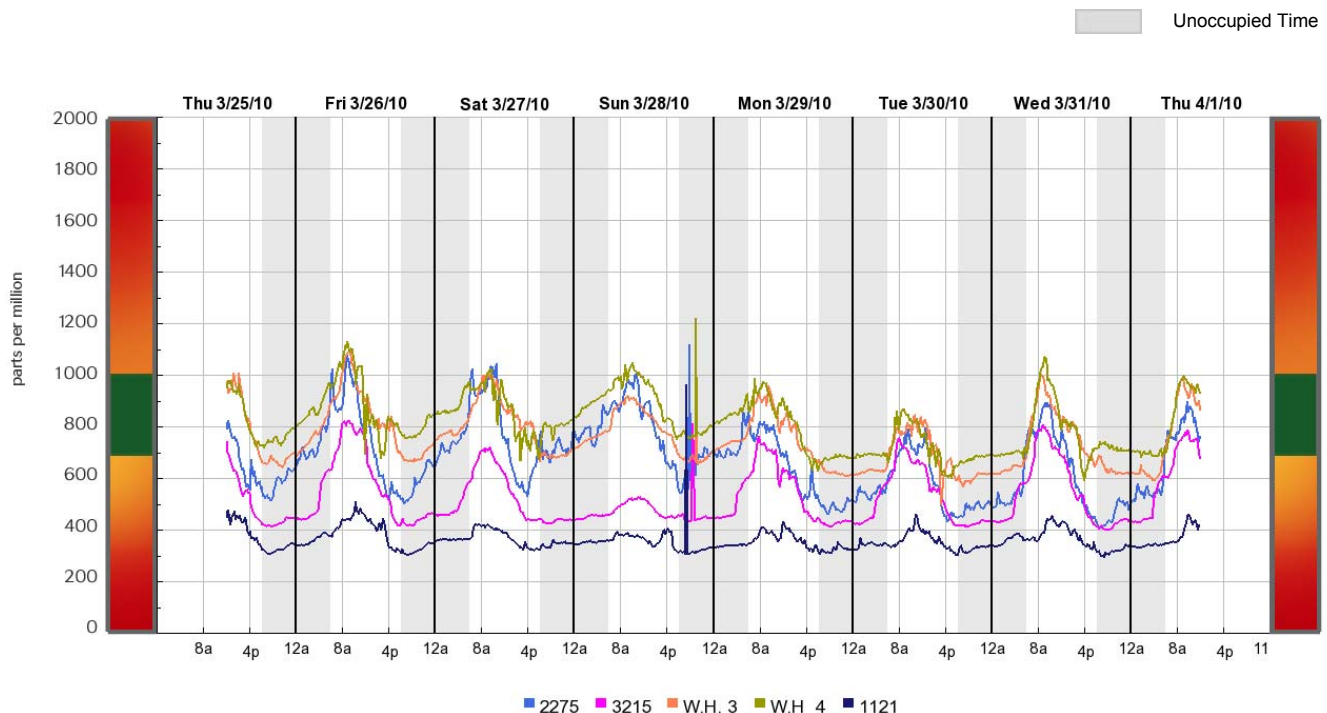
Comfort & Health Recommendations

- Increase the amount of ventilation into the building.

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
2275		432	1081	731	48%
3215		412	822	596	76%
W.H. 3		496	1104	832	18%
W.H. 4		591	1131	854	27%
1121		303	512	381	100%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 12 average occupied hours

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

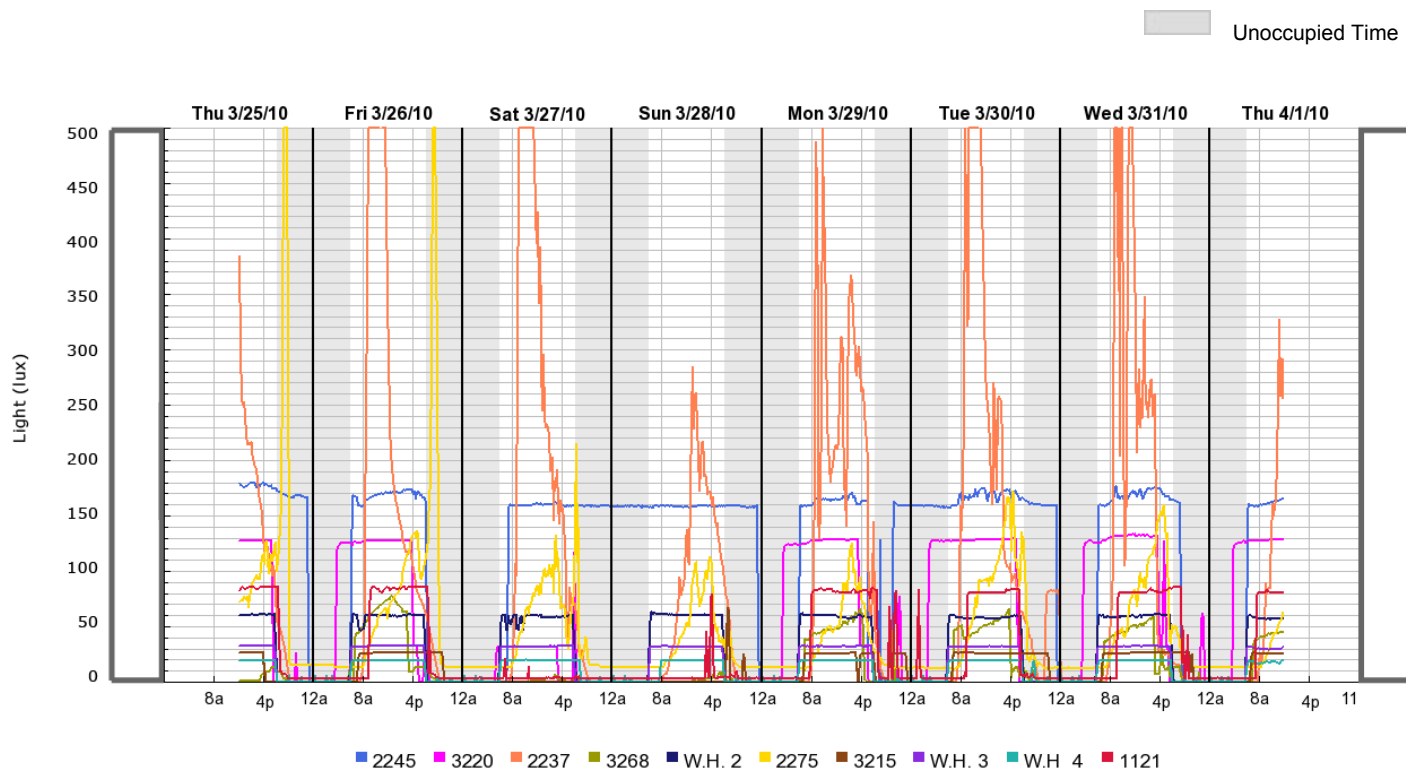
Energy Recommendations Based on Measurements

- Verify the light schedule & reduce unoccupied hours operation

Further Energy Recommendations

- Replace inefficient lamps with new high efficiency lamps
- Install occupancy sensors for individual zones
- Install daylight controls on the perimeter
- Reduce after hours use through coordination with the cleaning crews

Monitor	Alert Lvl	Measured On-Time
2245		16. hrs
3220		9.1 hrs
2237		3.8 hrs
3268		5.3 hrs
W.H. 2		11. hrs
2275		0.2 hrs
3215		8.8 hrs
W.H. 3		10. hrs
W.H. 4		12. hrs
1121		7.4 hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99502

Outdoor Temperature

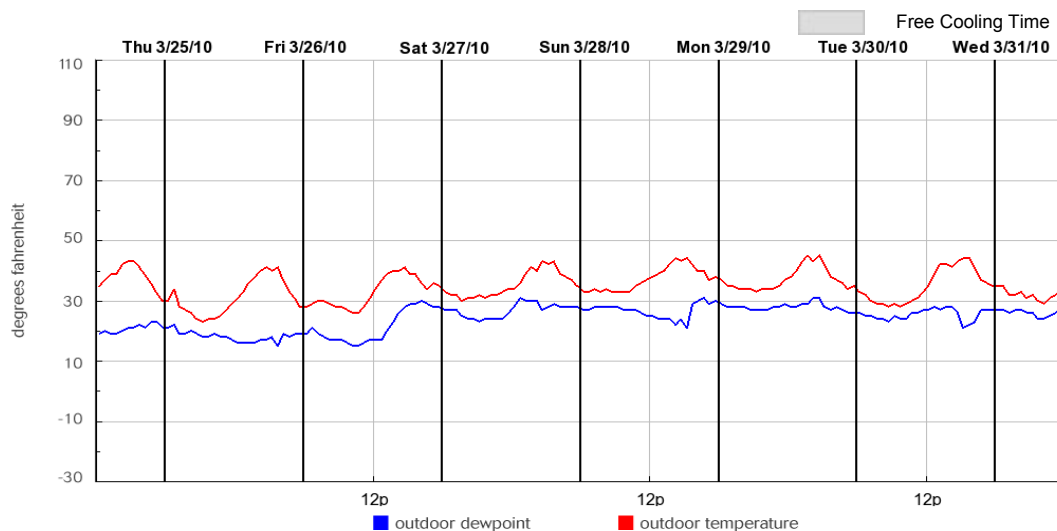
Test Period Avg: 3/25/10 – 4/1/10	Heating Degree Days	Cooling Degree Days
35 °F	30	0

Outdoor Temperature and Dew Point

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dew point during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	1003
Contact	xxx
Address	Anchorage, AK 99502
Building Information	
Building Background	Building Usage: Office Building Size (sq ft): 330000 # of Stories: 2 Building Status: Existing Construction type: Cement Block LEED Cert.: None Heating System: Packaged Gas Unit Domestic Hot Water: Gas or Other Fuel Economizer: No Cooling System: DX / Packaged Unit
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
2245	20431
3220	20420
2237	20418
3268	20416
W.H. 2	20415
2275	20300
3215	20295
W.H. 3	20293
W.H. 4	20289
1121	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	06:00	60	80	Yes
Tue				
Wed				
Thu	18:00	60	80	No
Fri				
Sat				
Sun				

Building Description

Office			
Gross Floor Area	130000	Weekly Operating Hours	100
Number of Workers on Main Shift	400	Number of PCs	400
Office Air-Conditioned	50% or more	Office Heated	50% or more

Warehouse (Unrefrigerated)			
Gross Floor Area	200000	Number of Workers on Main Shift	450
Weekly Operating Hours	50	% Air-Conditioned	0
% Heated	100	Walk-in Refrigeration/Freezer Units	0

Parking			
Enclosed Floor Area	0	Non-Enclosed Floor Area (w/roof)	0
Open Floor Area (w/o roof)	400000	Weekly Hours of Access	168

Building Controls Information

Current Controls	
Controls Type	Pneumatic DDC Hybrid
Schedule Type	Time Clock
Air Delivery Method	Variable Air Volume
Air-Flow Modulation	Variable Frequency Drive

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
1/28/09	564017	\$79,642		\$0
2/28/09	669746	\$93,838		\$0
3/28/09	456109	\$79,642		\$0
4/28/09	386388	\$51,896		\$0
5/28/09	440214	\$59,022		\$0
6/28/09	408797	\$55,996		\$0
7/28/09	408307	\$48,933		\$0
8/28/09	442885	\$51,899		\$0
9/28/09	487293	\$55,725		\$0
10/28/09	431196	\$48,853		\$0
11/28/09	466591	\$52,300		\$0
12/28/09	526688	\$57,921		\$0
TOTAL:	5688231	\$735,667		\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
1/28/09 4109	4	\$41,380
2/4/09 4393	8	\$44,229
3/10/09 1848	7	\$18,720
4/28/09 8883		\$9,096
5/12/09 4248		\$4,454
6/23/09 3485		\$3,688
7/28/09 4332		\$4,538
8/28/09 1056	1	\$10,786
9/28/09 2131	4	\$21,572
10/28/09 4216	3	\$43,350
11/27/09 5803	5	\$58,362
12/28/09 4598	8	\$46,283
TOTAL:	302528	\$306,458

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1004

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

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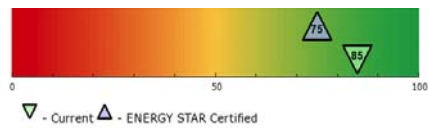
positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

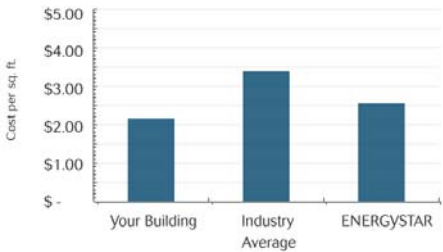


Your building's ENERGY STAR® Energy Performance Rating is **85**. Its Energy Use Index is **103 kbtu per sq. ft.**

Your building's ENERGY STAR score of 85 ranks you above average versus your peers, but your building may still have good opportunity to raise your ENERGY STAR score.



Cost

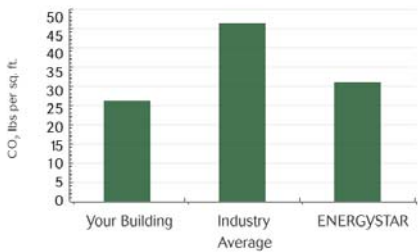


Your building's annual cost per square foot is **\$2.14 per sq. ft.** overall.

Your annual cost can be reduced by \$72,333 or 9.7% by achieving an ENERGY STAR score of 90.



Carbon Footprint



Your building's annual carbon footprint is **4,112 metric tons of CO₂** or **26.11 lbs per sq. ft.**

Your building's carbon emissions are 10.8% more than an energy efficient facility, and can further be reduced by 3 lbs per sq. ft. by achieving an ENERGY STAR score of 90.

You could save up to **\$72,333** annually or **\$361,665** over 5 years by raising your ENERGY STAR score to the level of 90.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

How Does Your Building Use Electricity Today?

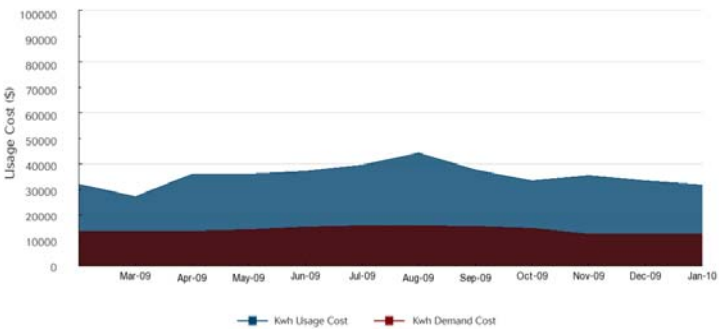
This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

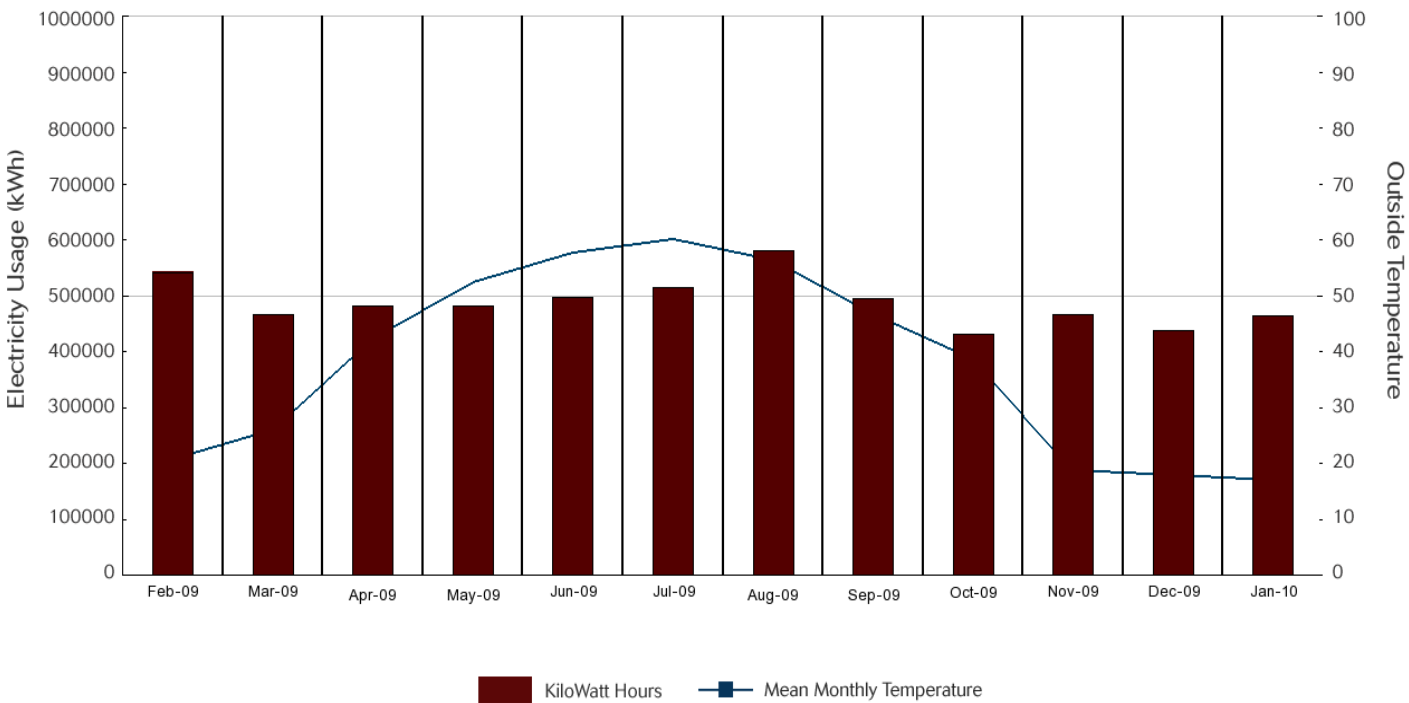
Electricity Consumption

- Electricity comprises 79.8% of your total utility cost, and 56.1% of your total utility consumption.
- Your Total Spend on electricity is \$593,258, so when considering savings opportunities, remember you can only save some percentage of that total.
- The demand cost for your building is \$169,950 and represents 28.6% of your electrical spend.

Monthly Electricity Costs



Electricity Consumption And Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

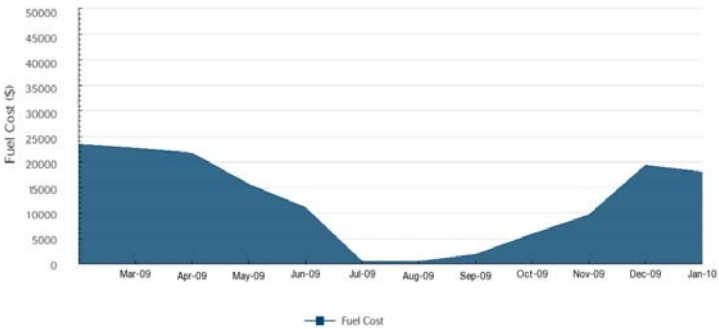


Monthly Fuel Costs

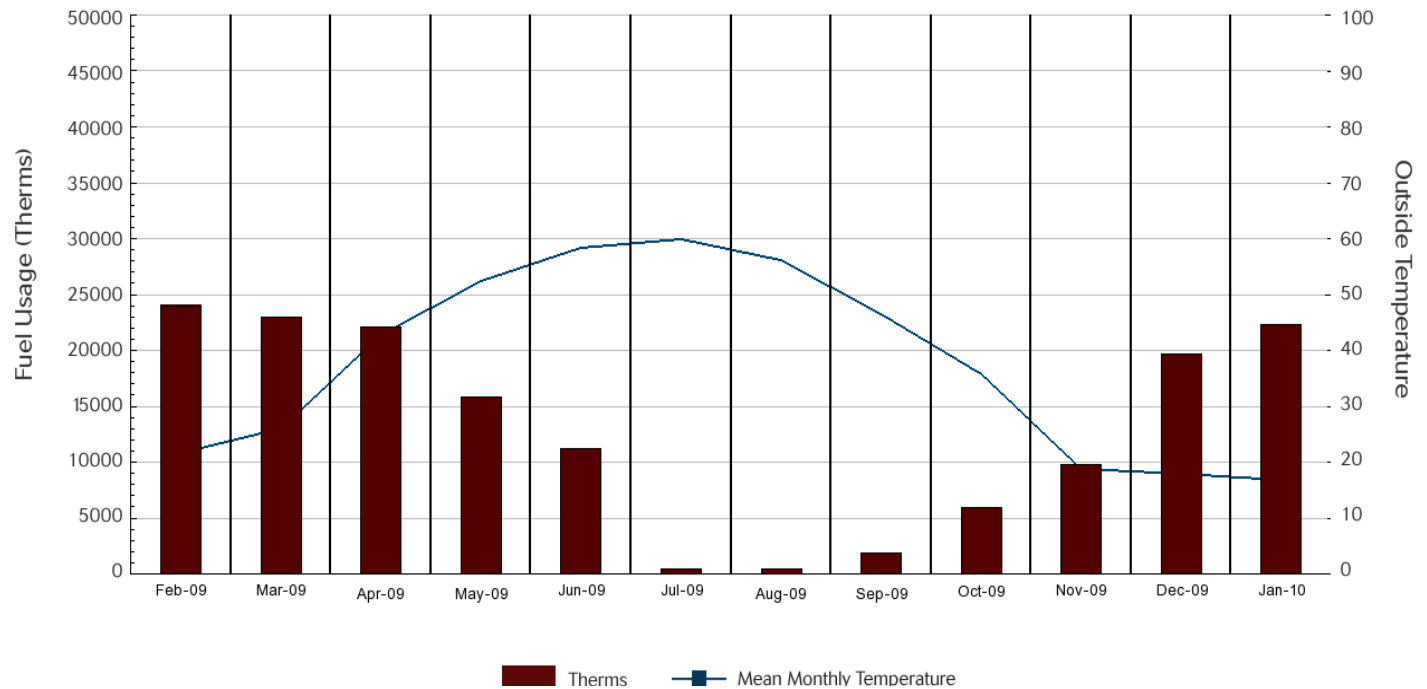
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 20.2% of your total utility cost, and 43.9% of your total utility consumption.
- Your Total Spend on Fuel is \$150,404, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption and Outside Air Temperature



Building Comfort and Ventilation Analysis

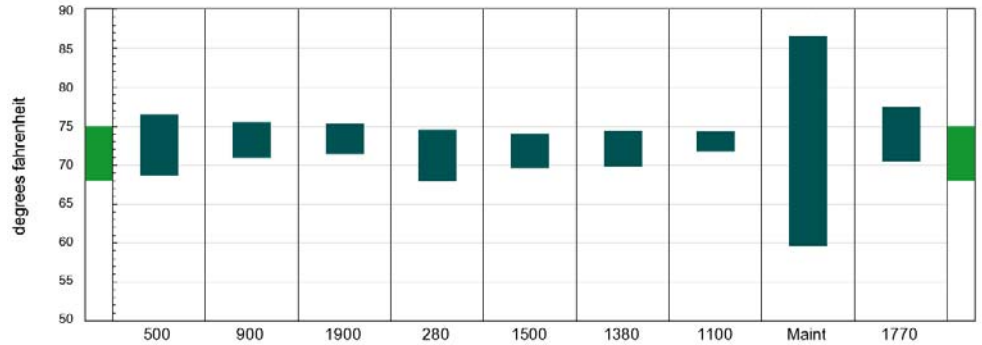
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building is controlled well with little opportunity for savings.

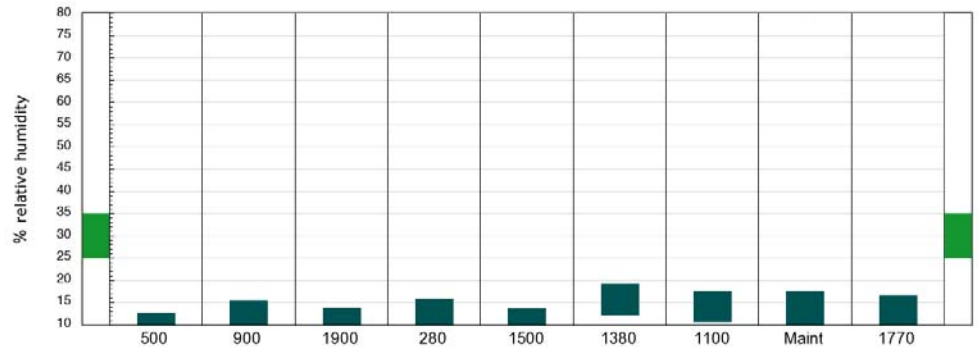
- 3 space(s) were too warm at times
- 1 space(s) were too cool at times
- 3 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 9 space(s) had low relative humidity at times

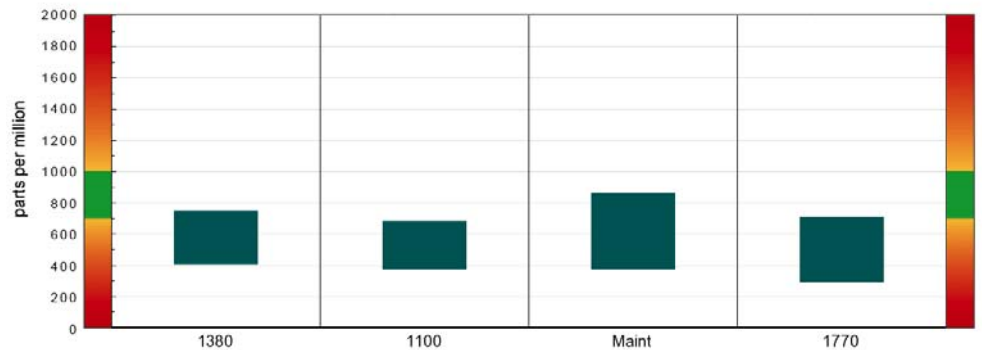


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 4 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: $\pm 1^\circ\text{F}$]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating Set point is 68 / 60
	Occupied/Unoccupied Cooling Set point is 75 / 80

Energy Savings Opportunities

Our findings indicate there are only little ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

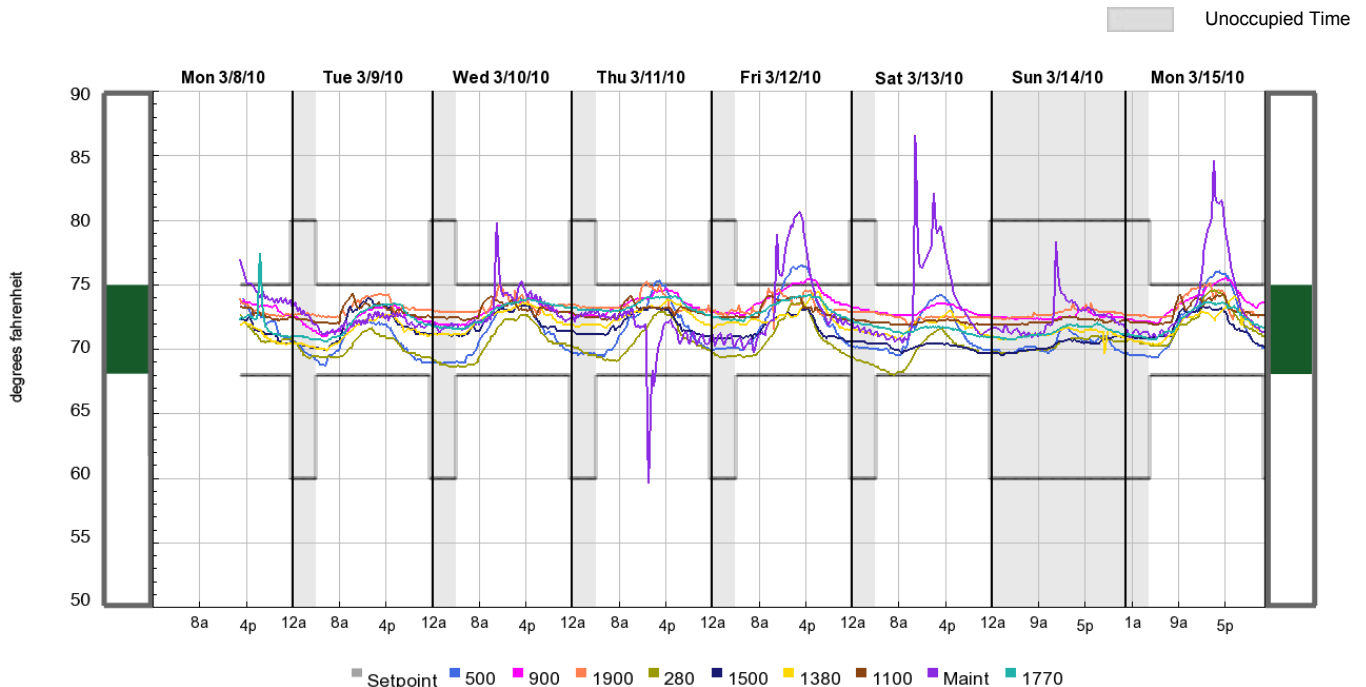
- Balance air flow within duct system to reduce temperature variation

Monitor Statistics

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%ToR*	SV†
500		69	76	72	9%	5
900		71	75	73	6%	2
1900		72	75	73	1%	3
280		68	74	71	0%	3
1500		70	74	72	0%	3
1380		70	74	72	0%	3
1100		72	74	73	0%	2
Maint		65	82	73	19%	16
1770		71	75	73	0%	6

These statistics are for occupied times only.

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

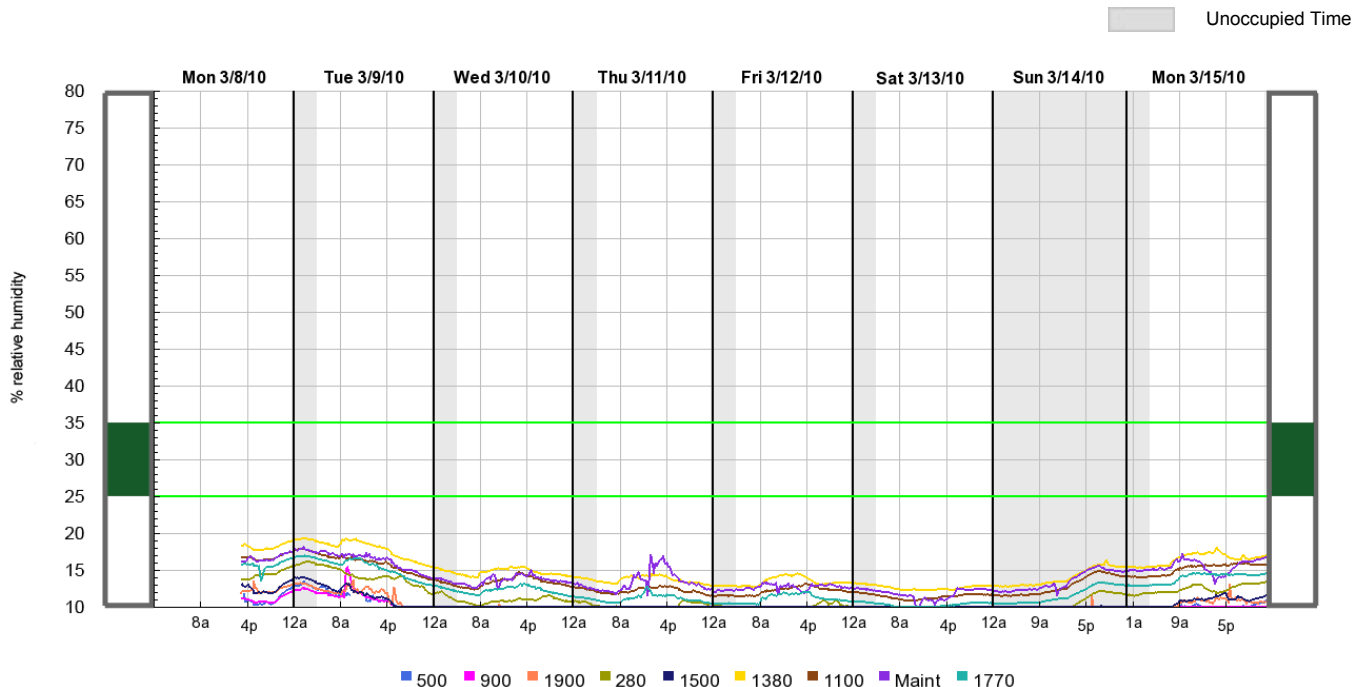
- Add humidification system
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
500		4	13	8	100%
900		5	15	8	100%
1900		5	14	9	100%
280		8	16	11	100%
1500		5	14	9	100%
1380		12	19	15	100%
1100		11	17	14	100%
Maint		9	18	14	100%
1770		10	17	13	100%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 11.4 average occupied hours

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

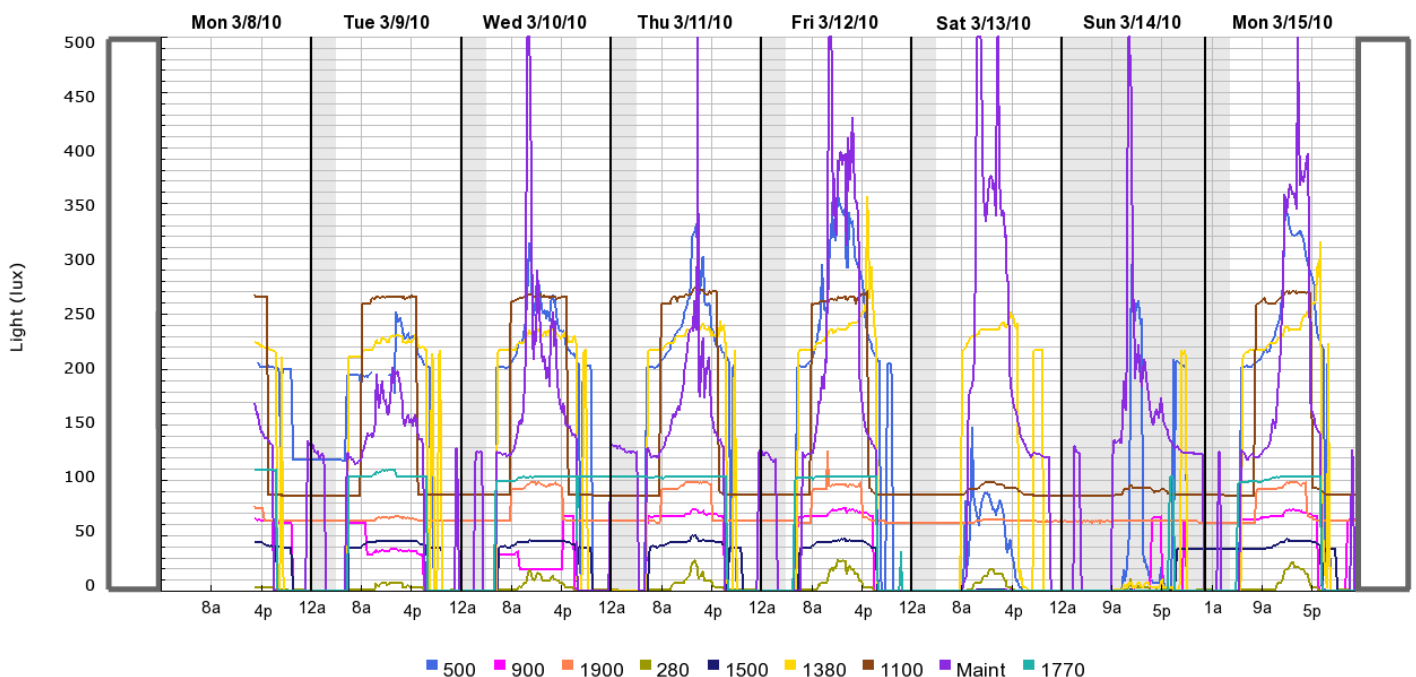
- Verify the light schedule & reduce unoccupied hours operation

Further Energy Recommendations

- Replace inefficient lamps with new high efficiency lamps
- Install occupancy sensors for individual zones
- Install daylight controls on the perimeter
- Reduce after hours use through coordination with the cleaning crews

Monitor	Alert Lvl	Measured On-Time
500		13. hrs
900		9.3 hrs
1900		23. hrs
280		1.0 hrs
1500		10. hrs
1380		10. hrs
1100		22. hrs
Maint		11. hrs
1770		12. hrs

Unoccupied Time



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99501

Outdoor Temperature

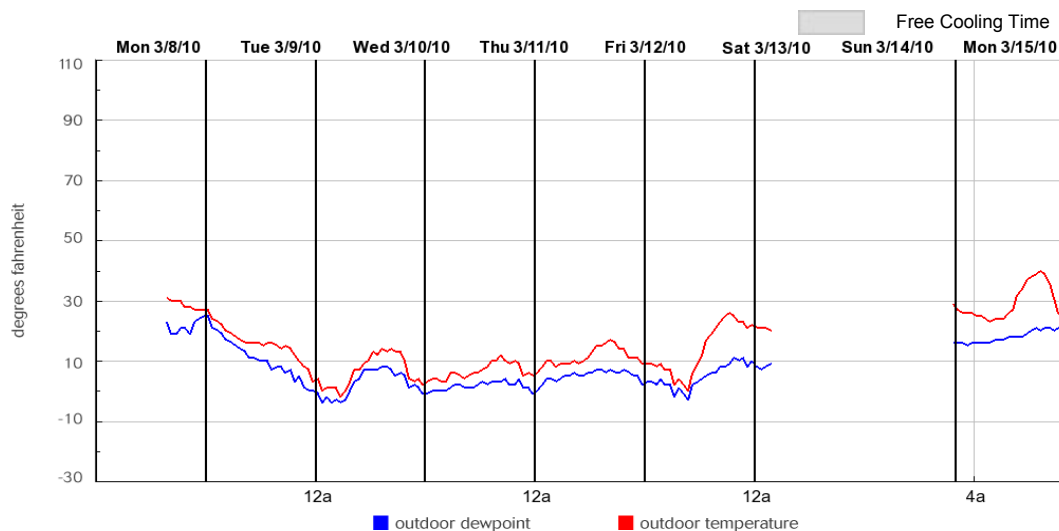
Test Period Avg: 3/8/10 – 3/15/10	Heating Degree Days	Cooling Degree Days
17 °F	48	0

Outdoor Temperature and Dew Point

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dew point during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	1004
Contact Address	Anchorage, AK 99501
Building Information	
Building Background	Building Usage: Office Building Size (sq ft): 347089 # of Stories: 20 Building Status: Existing Construction type: High Rise LEED Cert.: None Heating System: Packaged Gas Unit Domestic Hot Water: Gas or Other Fuel Economizer: Yes Cooling System: DX / Packaged Unit
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
500	20431
900	20420
1900	20418
280	20416
1500	20415
1380	20295
1100	20293
Maint	20289
1770	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	04:00	68	75	Yes
Tue				
Wed	23:30	60	80	No
Thu				
Fri				
Sat				

Building Description

Office			
Gross Floor Area	332089	Weekly Operating Hours	60
Number of Workers on Main Shift	1100	Number of PCs	2000
Office Air-Conditioned	50% or more	Office Heated	50% or more

Computer Data Center			
Gross Floor Area	15000	Weekly Operating Hours	168

Building Controls Information

Current Controls	
Controls Type	Direct Digital
Schedule Type	Time Clock
Air Delivery Method	Variable Air Volume
Air-Flow Modulation	Variable Frequency Drive

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
2/9/09	540200	\$31,949	1155	\$13,687
3/9/09	465000	\$27,148	1155	\$13,687
4/8/09	482200	\$35,906	1155	\$13,687
5/8/09	481600	\$35,953	1183	\$14,025
6/8/09	495800	\$37,016	1283	\$15,203
7/9/09	515000	\$39,500	1333	\$15,801
8/10/09	579400	\$44,357	1320	\$15,647
9/9/09	495600	\$37,524	1311	\$15,544
10/8/09	431200	\$33,429	1244	\$14,748
11/9/09	466400	\$35,513	1066	\$12,641
12/8/09	438000	\$33,369	1066	\$12,641
1/7/10	464400	\$31,644	1066	\$12,641
TOTAL:	5854800	\$423,308	14337	\$169,950

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
2/10/09 2399	9	\$23,440
3/9/09 2294	6	\$22,700
4/9/09 2208	6	\$21,777
5/8/09 1580	4	\$15,650
6/10/09 1115	6	\$11,070
7/10/09 428		\$580
8/11/09 430		\$491
9/11/09 1905		\$1,927
10/12/09 5957		\$5,872
11/9/09 9770		\$9,588
12/8/09 1970	0	\$19,268
1/1/10 2236	1	\$18,042
TOTAL:	156542	\$150,404

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1005

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

CHUGACH
POWERING ALASKA'S FUTURE

CONTROL
CONTRACTORS

smart building solutions



positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

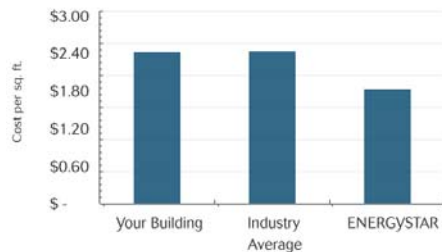


Your building's ENERGY STAR® Energy Performance Rating is **50**. Its Energy Use Index is **109 kbtu per sq. ft.**

Your building's ENERGY STAR score of 50 ranks you close to your peers, and falls below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

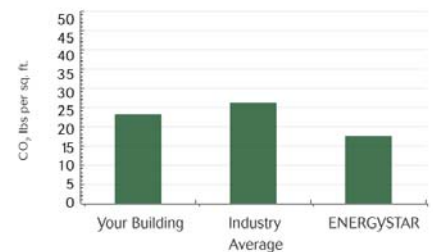


Your building's annual cost per square foot is **\$2.35 per sq. ft.** overall.

Your building's cost per square foot is \$0.58 more than the ENERGY STAR certification level. Your annual cost can be reduced by \$14,794 or 24.5% by achieving an ENERGY STAR score of 75.



Carbon Footprint



Your building's annual carbon footprint is **268 metric tons of CO₂** or **23.08 lbs per sq. ft.**

Your building's carbon emissions are 32.7% more than an ENERGY STAR certified building, and can be reduced by 6 lbs per sq. ft. by achieving an ENERGY STAR score of 75.

You could save up to **\$14,794** annually or **\$73,970** over 5 years by raising your ENERGY STAR score to the level of 75.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Your building has some control issues
- Your building is over-ventilated



How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

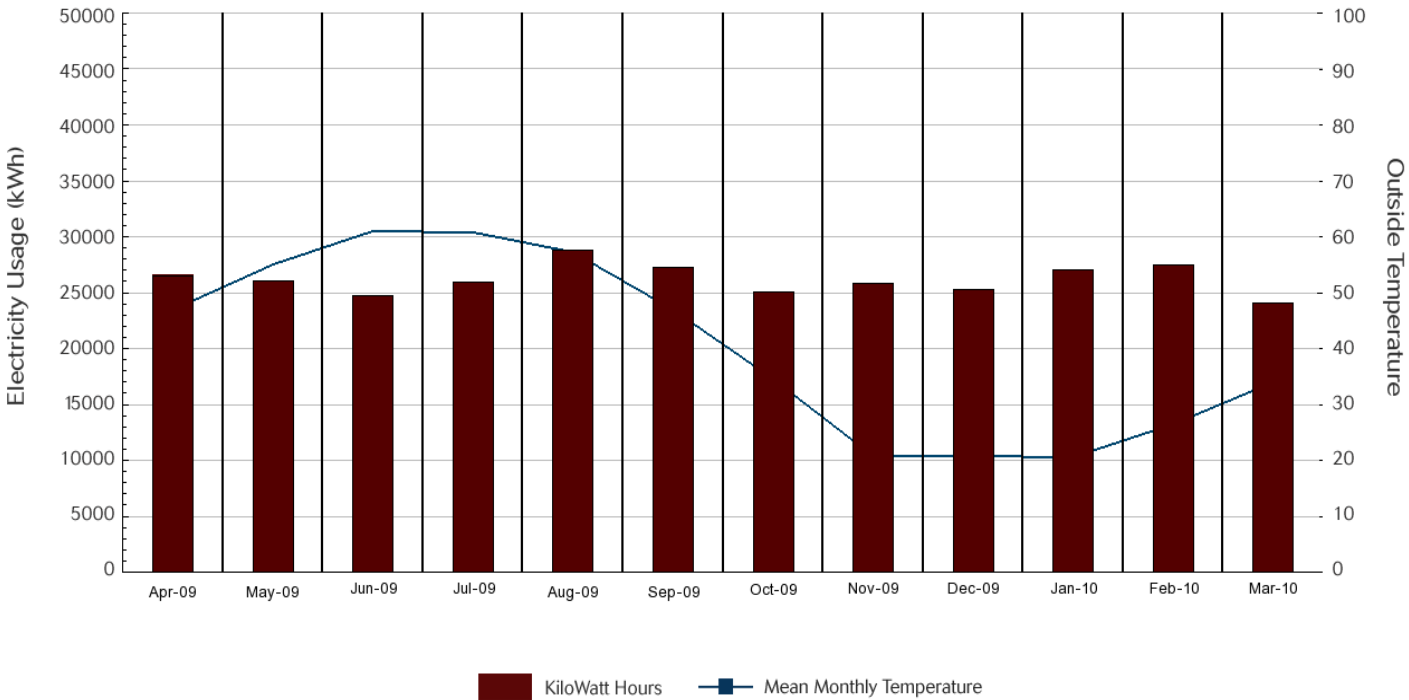
Electricity Consumption

- Electricity comprises 72.5% of your total utility cost, and 38.3% of your total utility consumption.
- Your Total Spend on electricity is \$43,679, so when considering savings opportunities, remember you can only save some percentage of that total.
- Demand costs are included in the overall electricity costs.

Monthly Electricity Costs



Electricity Consumption And Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

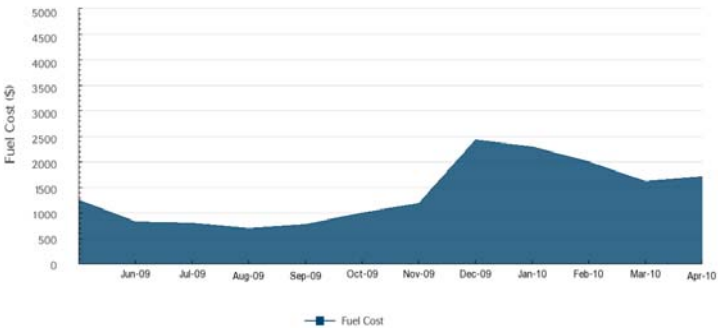


Monthly Fuel Costs

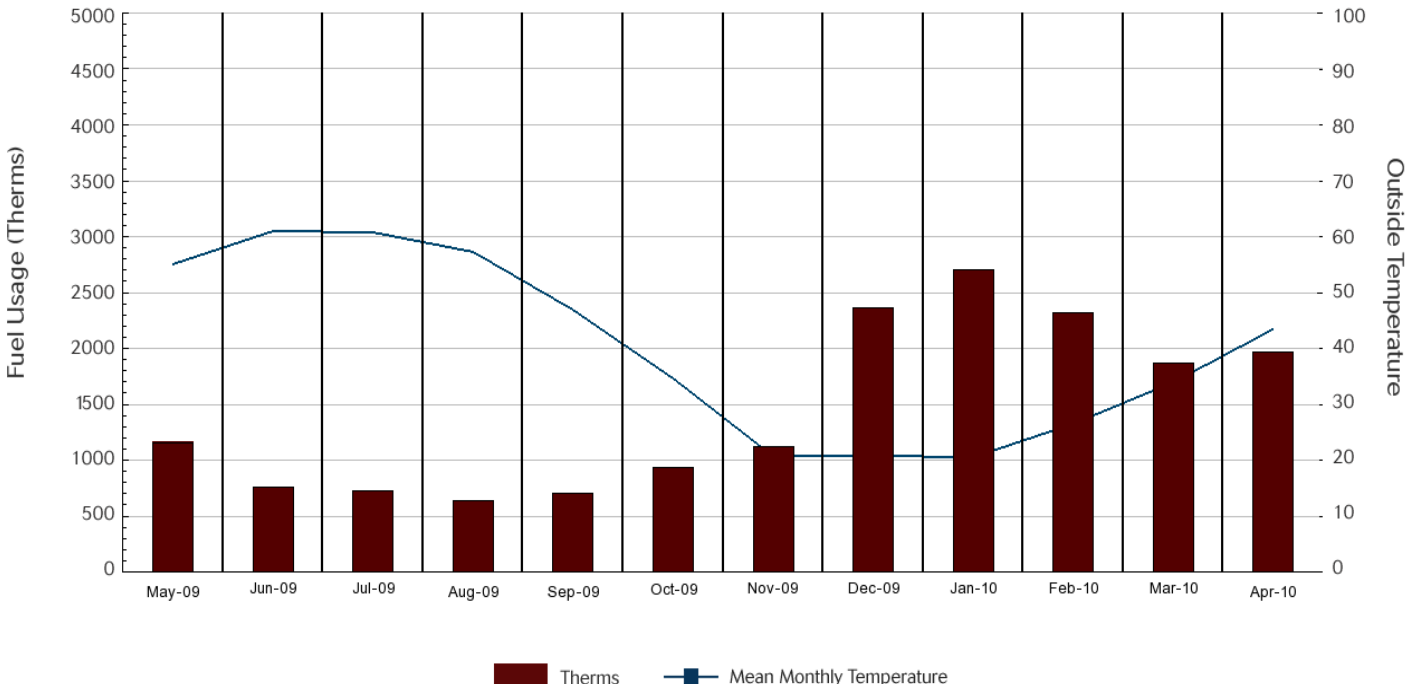
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 27.5% of your total utility cost, and 61.7% of your total utility consumption.
- Your Total Spend on Fuel is \$16,582, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption and Outside Air Temperature



Building Comfort and Ventilation Analysis

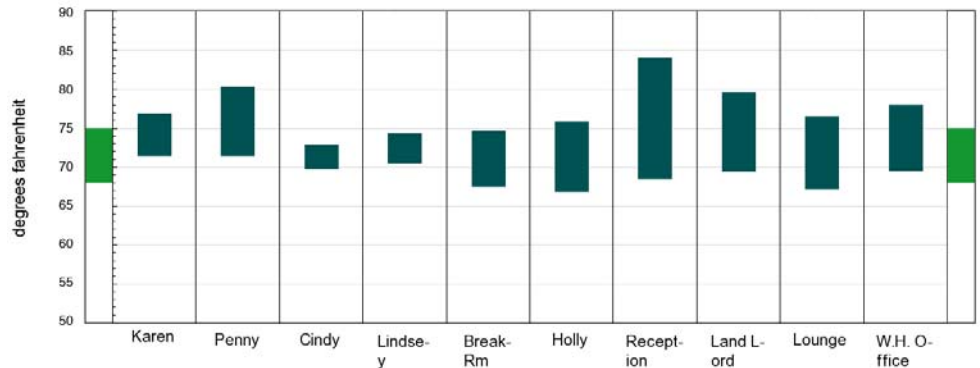
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building has some control issues in specific sections.

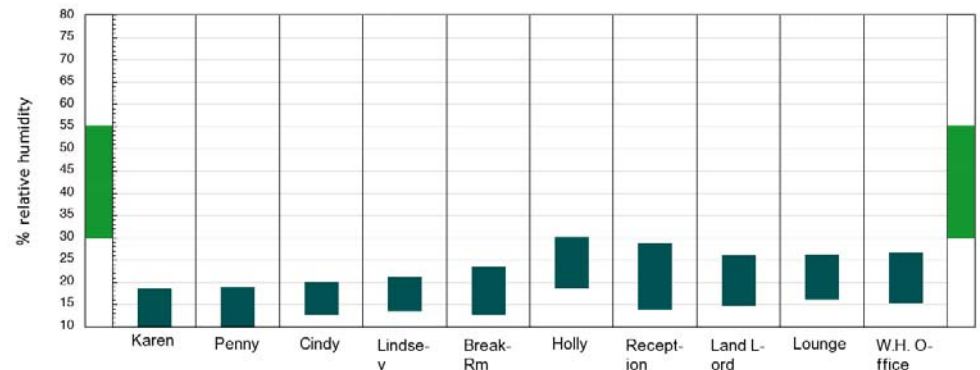
- 5 space(s) were too warm at times
- 2 space(s) were too cool at times
- 6 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 10 space(s) had low relative humidity at times

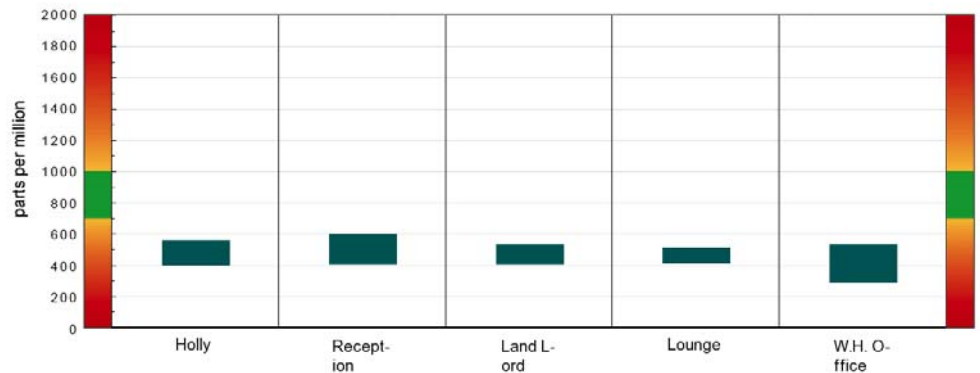


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: $\pm 1^\circ\text{F}$]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating set point is 68 / 68
	Occupied/Unoccupied Cooling set point is 75 / 75

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Further Comfort & Energy Recommendations

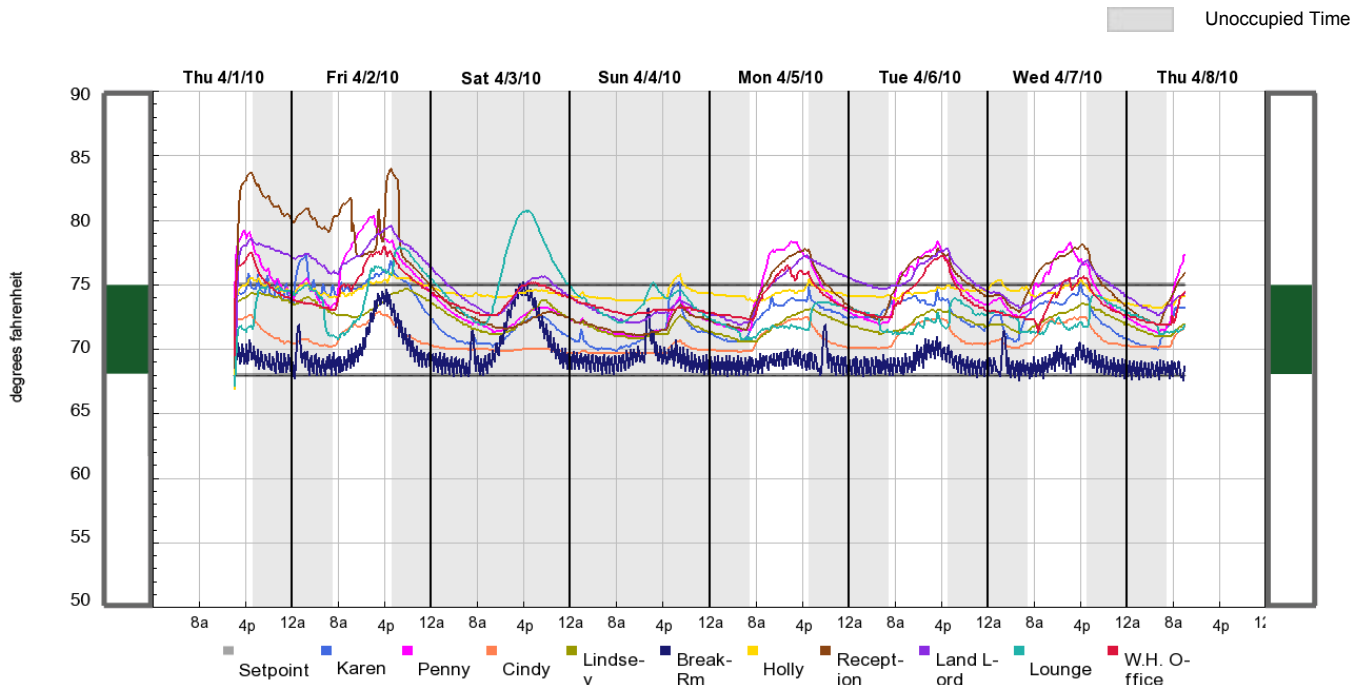
- Increase the amount of heating set back possible during the unoccupied times

Monitor Statistics

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%ToR*	SV†
Karen		72	76	74	11%	3
Penny		72	80	77	86%	6
Cindy		70	73	72	0%	2
Lindsey		71	74	73	0%	1
Break Rm		68	74	70	4%	5
Holly		72	76	74	15%	1
Reception		73	84	77	87%	8
Land Lord		73	79	76	70%	3
Lounge		71	77	72	15%	5
W.H. Office		72	78	75	56%	4

These statistics are for occupied times only.

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

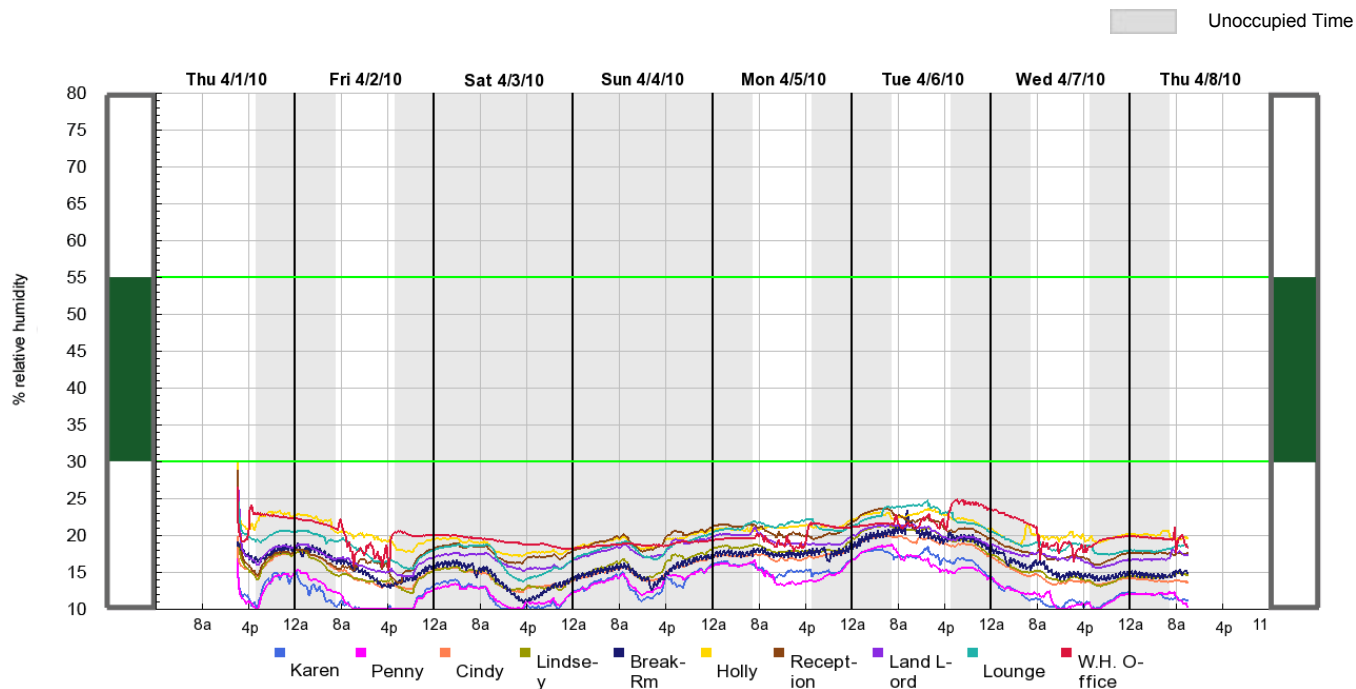
- Add humidification system, if necessary after further analysis
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
Karen		9	18	13	100%
Penny		8	19	13	100%
Cindy		13	20	16	100%
Lindsey		13	21	17	100%
Break Rm		13	23	17	100%
Holly		19	30	21	100%
Reception		14	29	19	100%
Land Lord		15	26	18	100%
Lounge		16	26	20	100%
W.H. Office		15	27	20	100%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
Holly		405	558	461	100%
Reception		410	595	500	100%
Land Lord		406	533	454	100%
Lounge		415	513	450	100%
W.H. Office		288	534	394	100%

These statistics are for occupied times only.

* % Time out of Range

Energy Savings Opportunities

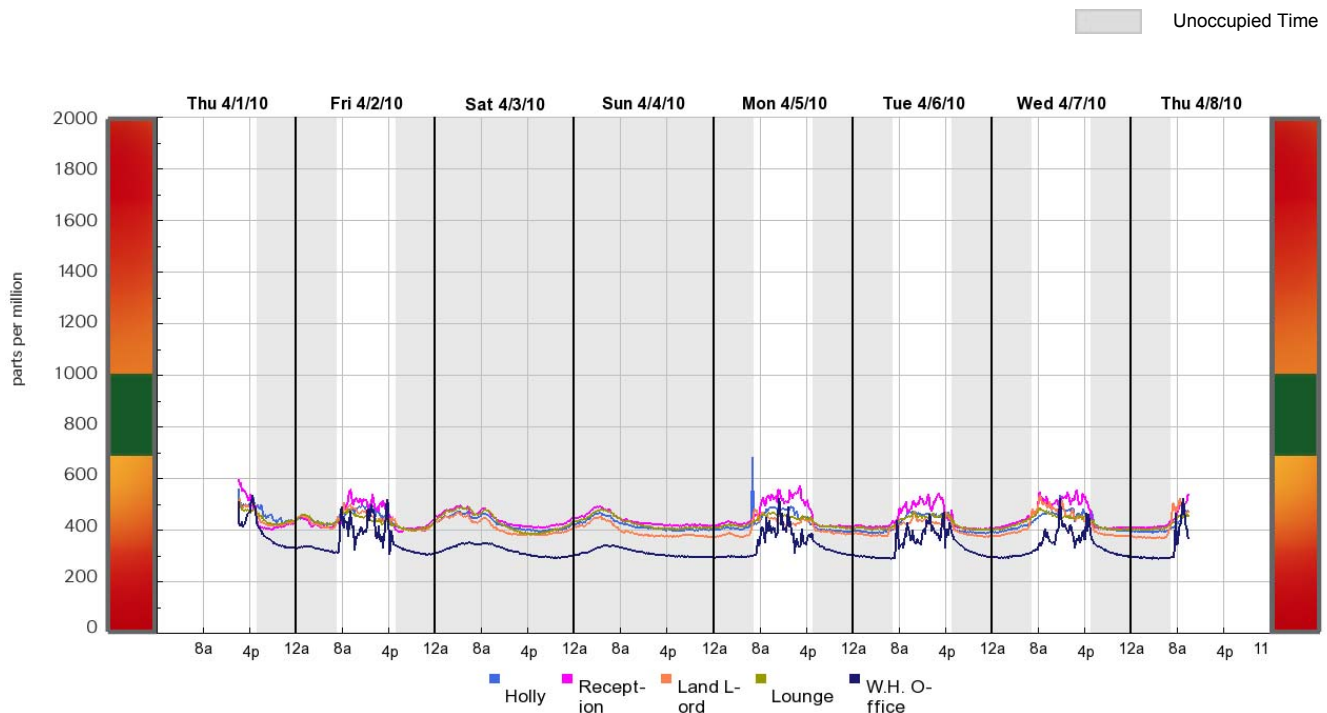
Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

Comfort & Health Recommendations

- No recommendations at this time



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 7.1 average occupied hours

Energy Savings Opportunities

Our findings indicate your building is not wasting energy on lights.

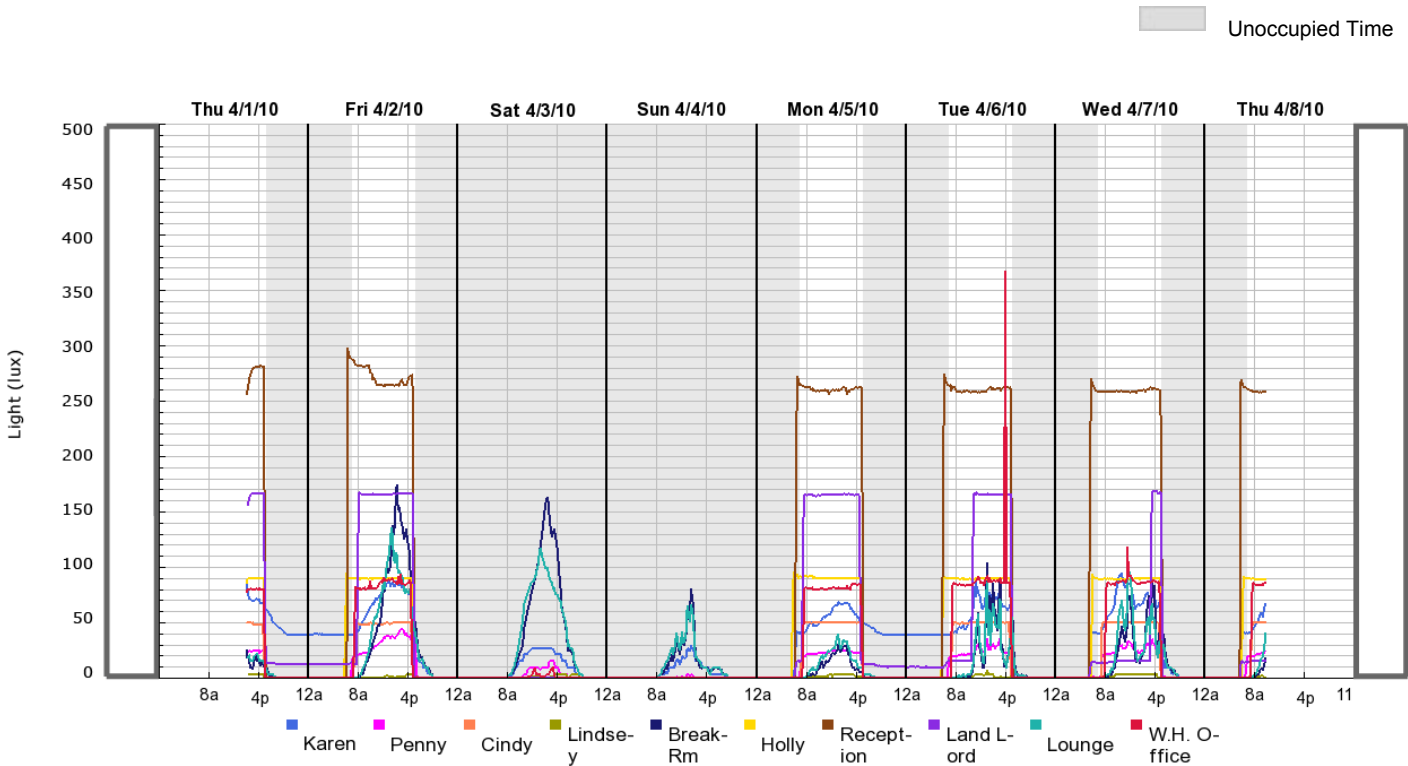
Energy Recommendations Based on Measurements

- No recommendations at this time.

Further Energy Recommendations

- No recommendations at this time.

Monitor		Alert Lvl	Measured On-Time
	Karen		3.3 hrs
	Penny		7.8 hrs
	Cindy		6.3 hrs
	Lindsey		1.0 hrs
	Break Rm		1.2 hrs
	Holly		6.8 hrs
	Reception		7.2 hrs
	Land Lord		5.1 hrs
	Lounge		1.7 hrs
	W.H. Office		7.0 hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99518

Outdoor Temperature

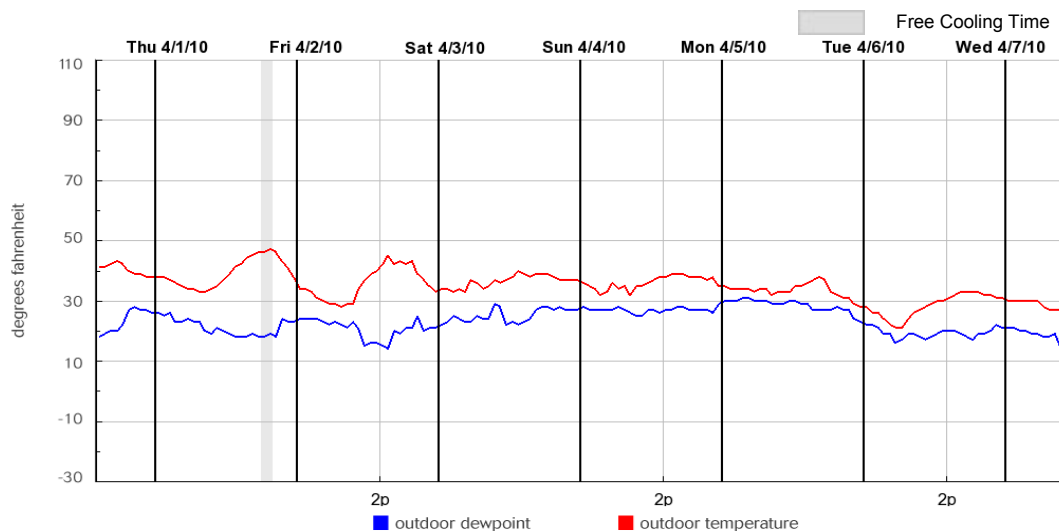
Test Period Avg: 4/1/10 – 4/8/10	Heating Degree Days	Cooling Degree Days
35 °F	30	0

Outdoor Temperature and Dew Point

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dewpoint during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	1005
Contact	xxx
Address	Anchorage, AK 99518
Building Information	
Building Background	Building Usage: Office Building Size (sq ft): 25594 # of Stories: 2 Building Status: Existing Construction type: Cement Block LEED Cert.: None Heating System: Boiler Domestic Hot Water: Gas or Other Fuel Economizer: Yes Cooling System: DX / Packaged Unit
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
Karen	20431
Penny	20420
Cindy	20418
Lindsey	20416
Break Rm	20415
Holly	20300
Reception	20295
Land Lord	20293
Lounge	20289
W.H. Office	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	07:00	68	75	Yes
Tue				
Wed	17:00	68	75	No
Thu				
Fri				

Building Description

Office			
Gross Floor Area	25378	Weekly Operating Hours	50
Number of Workers on Main Shift	32	Number of PCs	40
Office Air-Conditioned	50% or more	Office Heated	50% or more

Computer Data Center			
Gross Floor Area	216	Weekly Operating Hours	168

Parking			
Enclosed Floor Area	0	Non-Enclosed Floor Area (w/roof)	0
Open Floor Area (w/o roof)	6400	Weekly Hours of Access	168

Building Controls Information

Current Controls	
Controls Type	Thermostat
Schedule Type	Time Clock (Continuous Ventilation)
Air Delivery Method	Constant Volume (CV)
Air-Flow Modulation	N/A

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
4/15/09	26484	\$4,356		\$0
5/15/09	26030	\$4,324		\$0
6/15/09	24771	\$3,996		\$0
7/15/09	25924	\$3,631		\$0
8/15/09	28778	\$3,883		\$0
9/15/09	27228	\$3,760		\$0
10/15/09	25077	\$3,377		\$0
11/15/09	25839	\$3,443		\$0
12/15/09	25248	\$3,357		\$0
1/15/10	26998	\$3,254		\$0
2/15/10	27501	\$3,290		\$0
3/15/10	24076	\$3,008		\$0
TOTAL:	313954	\$43,679		\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
5/15/09 1158		\$1,248
6/15/09 759		\$824
7/15/09 729		\$795
8/15/09 632		\$698
9/15/09 705		\$771
10/15/09 937		\$1,004
11/15/09 1120		\$1,187
12/15/09 2360		\$2,431
1/15/10 2700		\$2,297
2/15/10 2321		\$2,006
3/15/10 1868		\$1,609
4/15/10 1970		\$1,712
TOTAL:	17259	\$16,582

Commercial Energy \$avings Assessment



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Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

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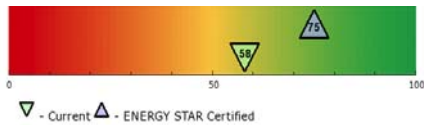
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Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

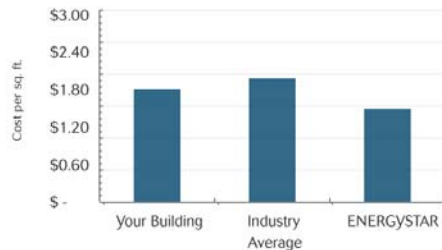


Your building's ENERGY STAR® Energy Performance Rating is **58**. Its Energy Use Index is **161 kbtu per sq. ft.**

Your building's ENERGY STAR score of 58 ranks you close to your peers, and falls below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

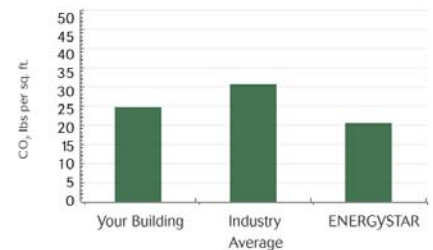


Your building's annual cost per square foot is **\$1.76 per sq. ft.** overall.

Your building's cost per square foot is \$0.31 more than the ENERGY STAR certification level. Your annual cost can be reduced by \$5,285 or 17.9% by achieving an ENERGY STAR score of 75.



Carbon Footprint



Your building's annual carbon footprint is **188 metric tons of CO₂** or **24.66 lbs per sq. ft.**

Your building's carbon emissions are 21.3% more than an ENERGY STAR certified building, and can be reduced by 4 lbs per sq. ft. by achieving an ENERGY STAR score of 75.

You could save up to **\$5,285** annually or **\$26,425** over 5 years by raising your ENERGY STAR score to the level of 75.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Your building has some control issues
- Your building is over-ventilated



How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

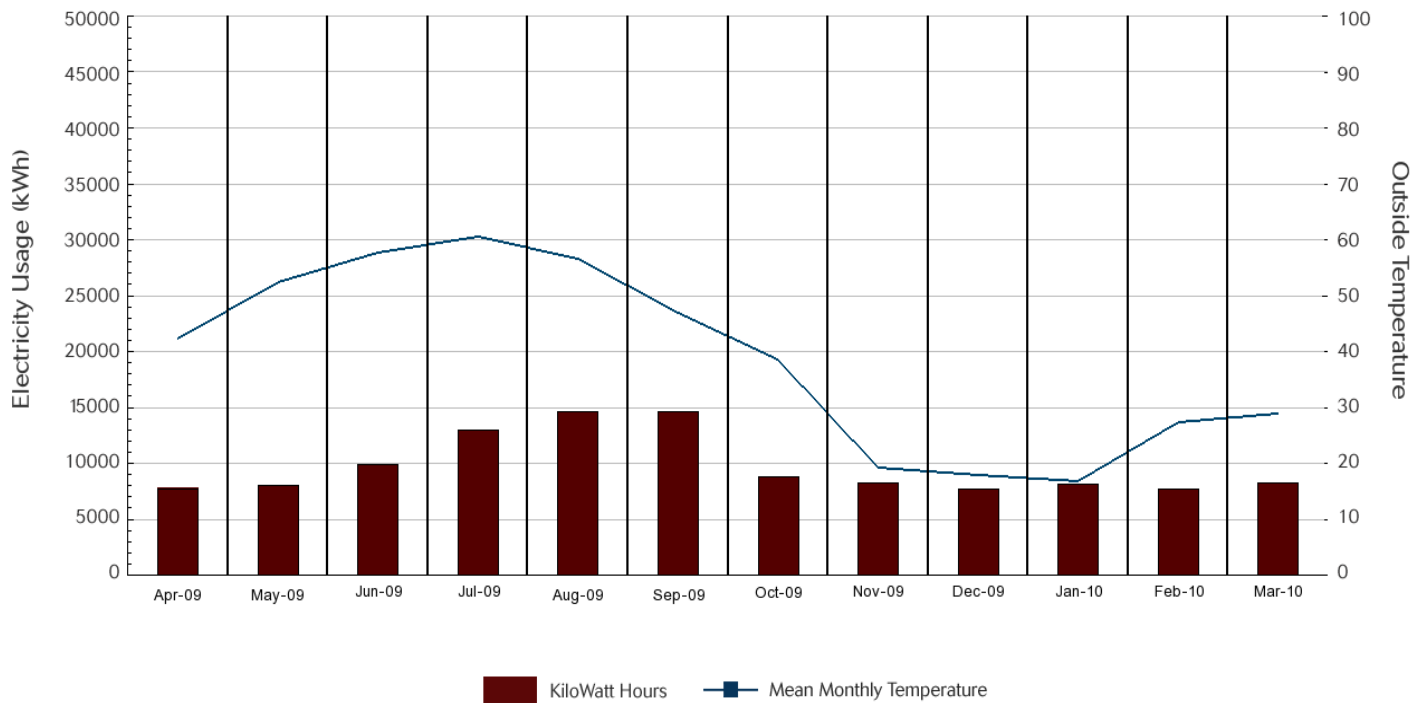
Electricity Consumption

- Electricity comprises 46.4% of your total utility cost, and 14.7% of your total utility consumption.
- Your Total Spend on electricity is \$13,704, so when considering savings opportunities, remember you can only save some percentage of that total.
- Demand costs for this building are included in the overall electricity costs.

Monthly Electricity Costs



Electricity Consumption and Outside Air Temperature



How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

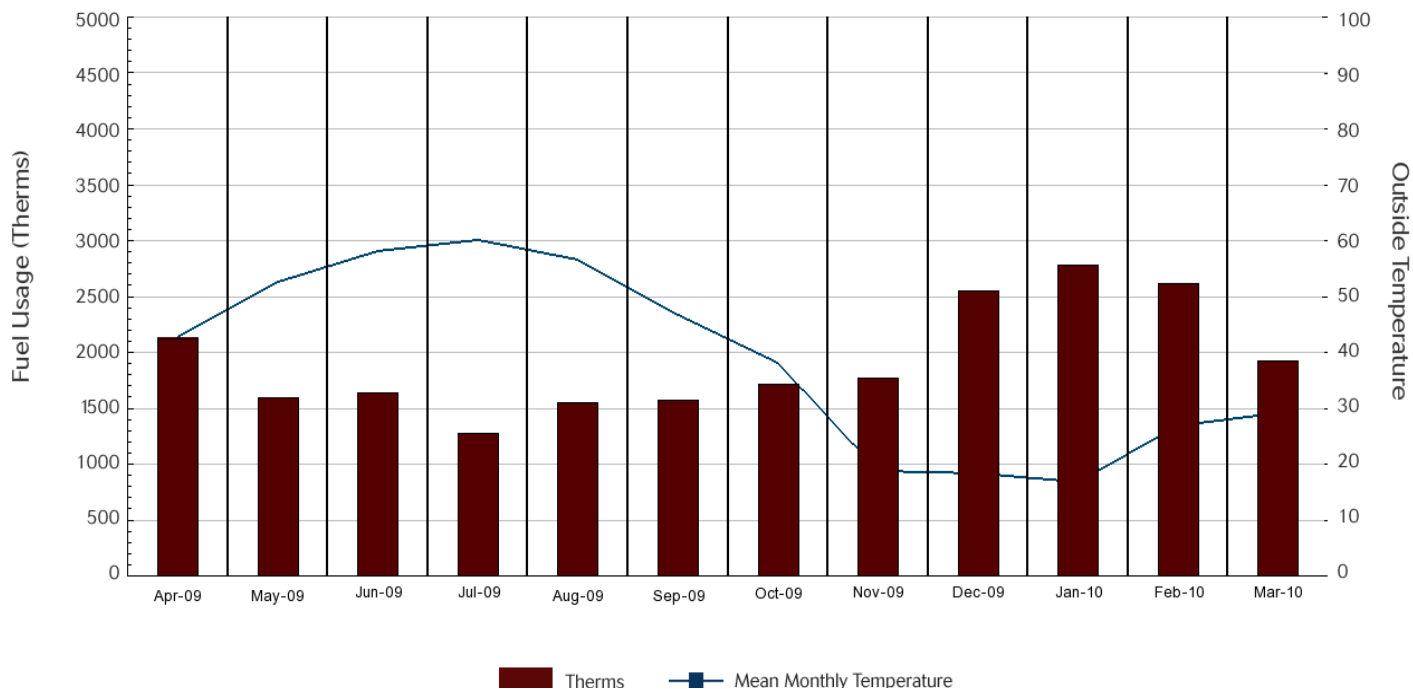
Fuel Consumption

- Fuel comprises 53.6% of your total utility cost, and 85.3% of your total utility consumption.
- Your Total Spend on Fuel is \$15,851, so when considering savings opportunities, remember you can only save some percentage of that total.

Monthly Fuel Costs



Fuel Consumption and Outside Air Temperature



Building Comfort and Ventilation Analysis

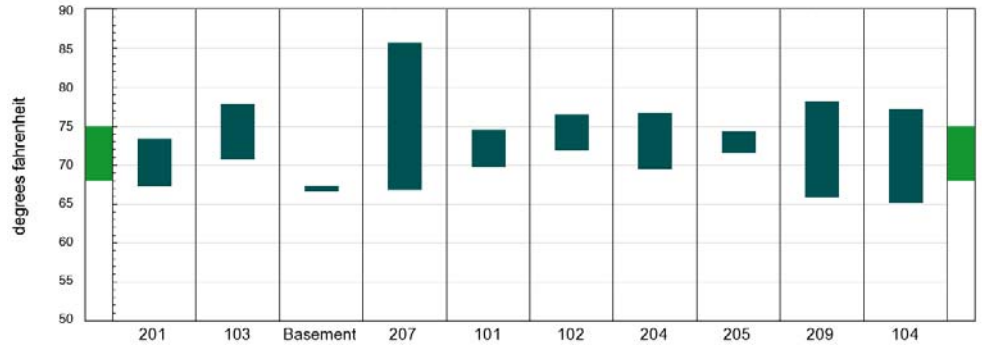
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building has some control issues in specific sections.

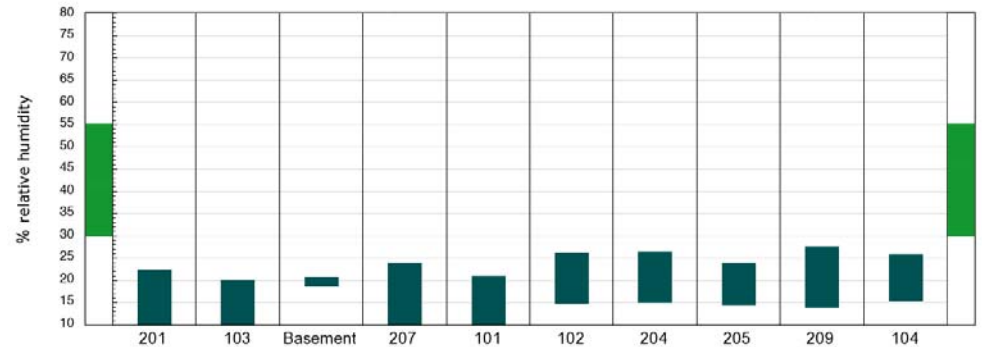
- 4 space(s) were too warm at times
- 4 space(s) were too cool at times
- 4 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 10 space(s) had low relative humidity at times

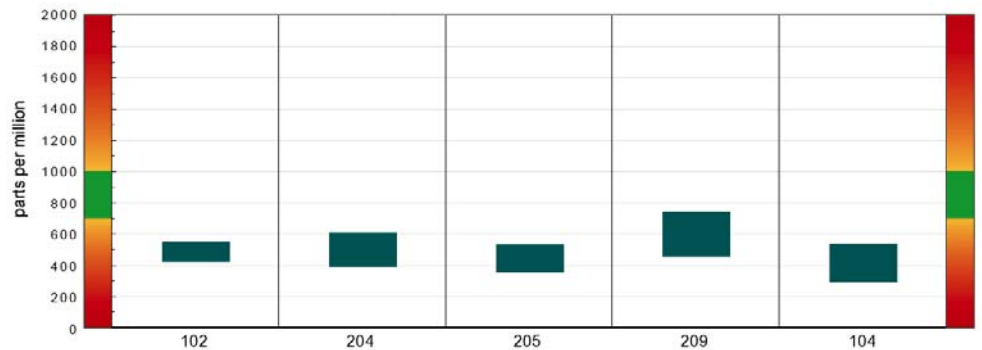


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: ± 1°F]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating set point is 68 / 68
	Occupied/Unoccupied Cooling set point is 75 / 75

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Further Comfort & Energy Recommendations

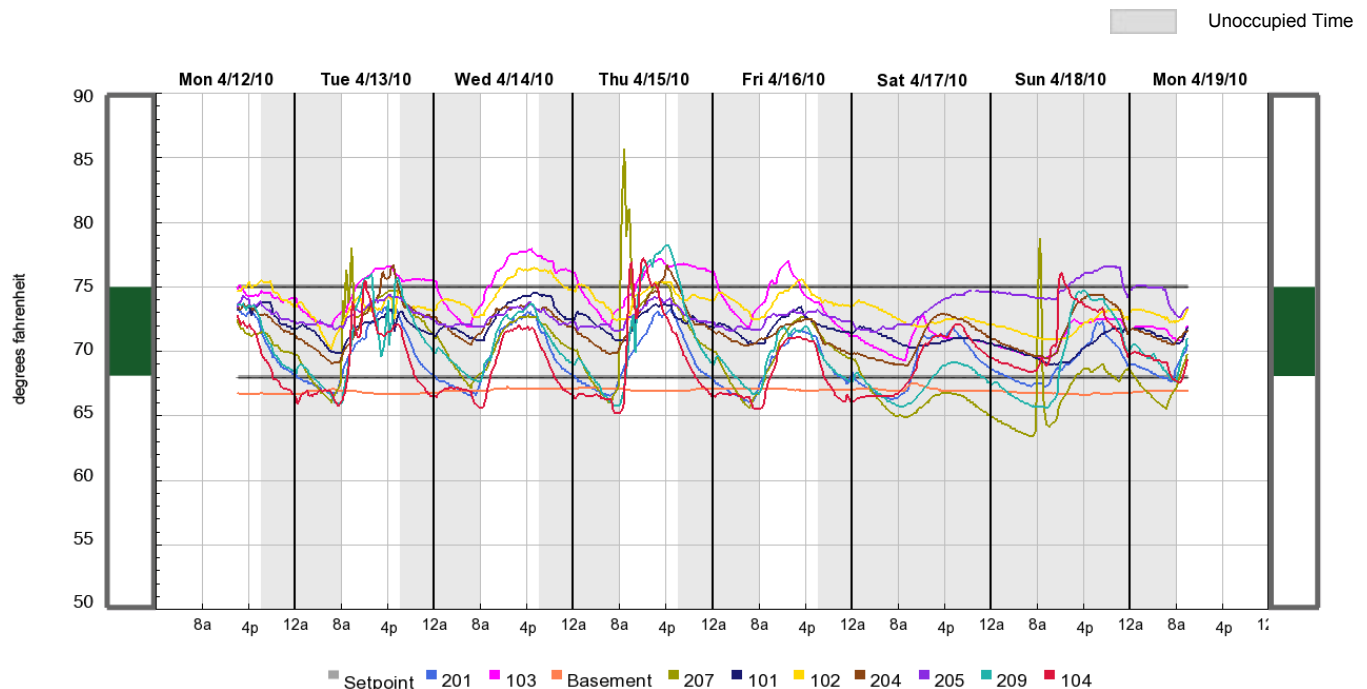
- Increase the amount of heating set back possible during the unoccupied times

Monitor Statistics

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%ToR*	SV†
201		68	73	71	3%	4
103		71	78	75	57%	3
Basement		67	67	67	100%	0
207		67	81	73	13%	13
101		70	74	73	0%	3
102		72	76	74	33%	3
204		70	76	73	12%	4
205		72	74	73	0%	2
209		67	78	72	25%	10
104		66	77	71	22%	12

These statistics are for occupied times only.

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

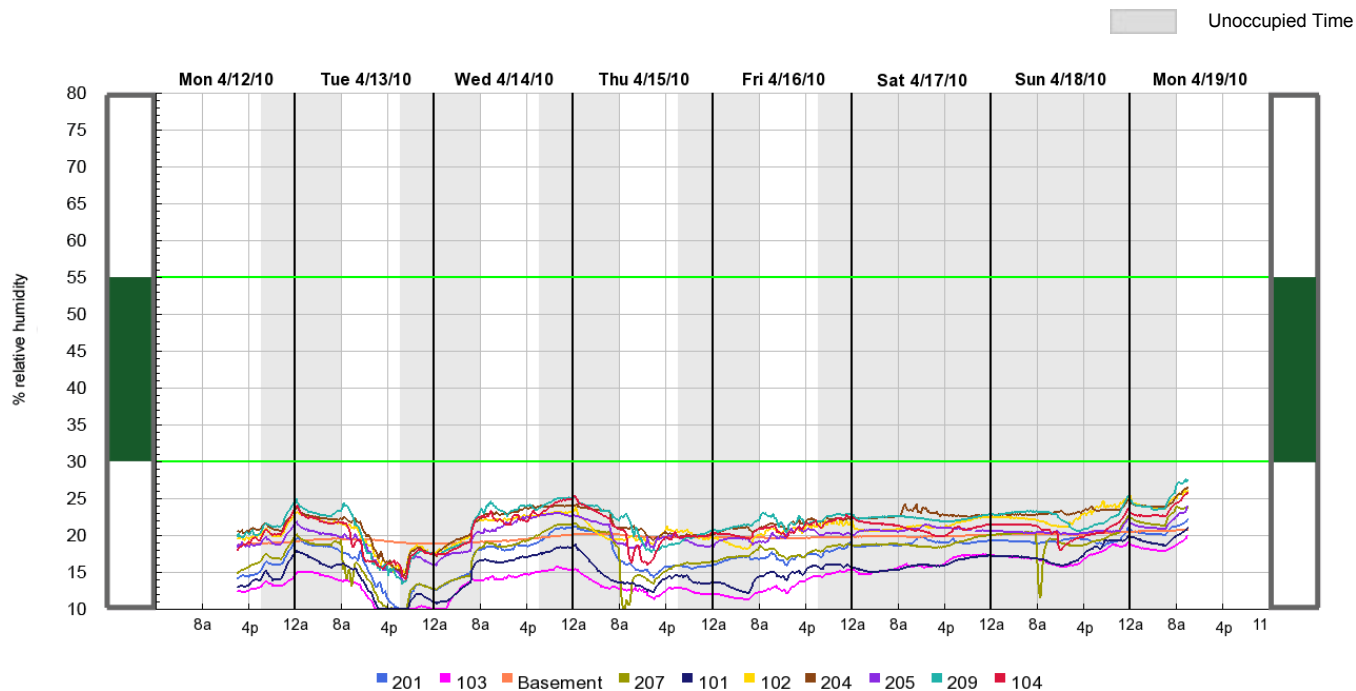
- Add humidification system
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
201		10	22	16	100%
103		8	20	13	100%
Basement		19	21	19	100%
207		9	24	16	100%
101		8	21	14	100%
102		15	26	20	100%
204		15	26	21	100%
205		15	24	20	100%
209		14	28	21	100%
104		15	26	20	100%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

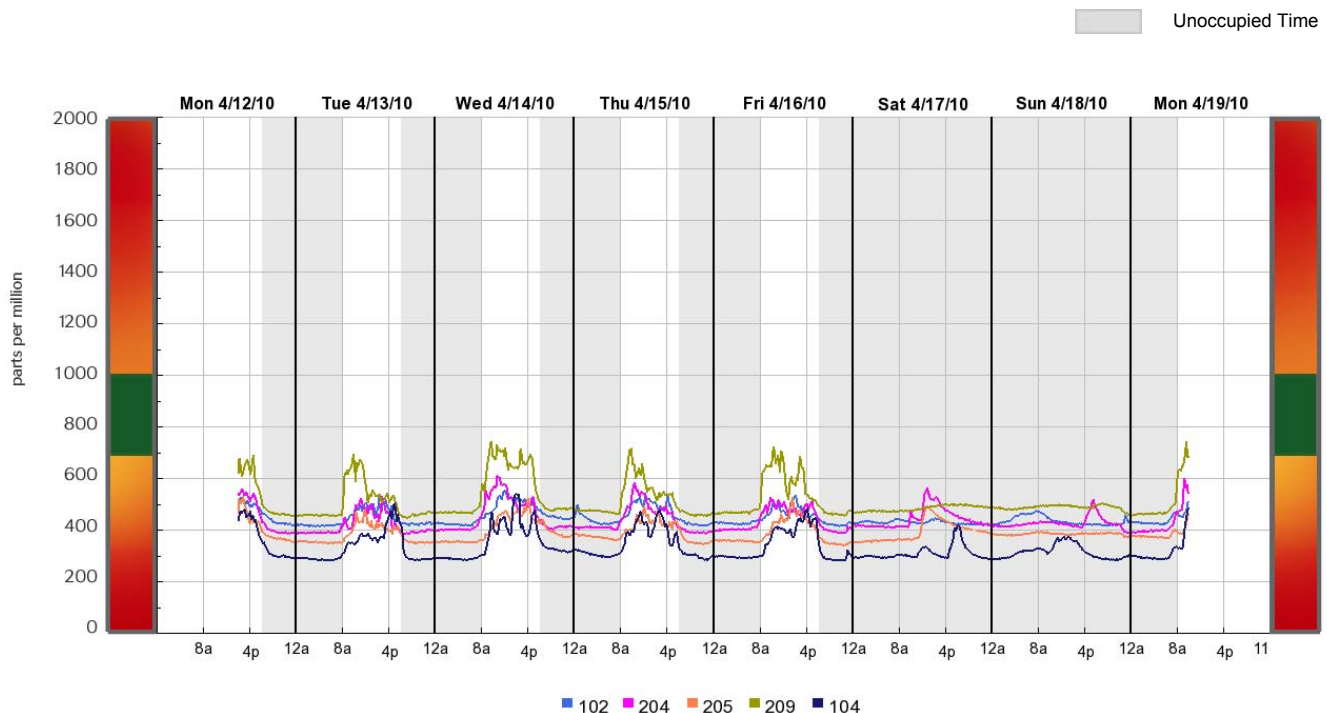
Comfort & Health Recommendations

- No recommendations at this time

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
102		422	549	483	100%
204		392	610	491	100%
205		354	530	428	100%
209		455	743	602	94%
104		298	538	402	100%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 7.1 average occupied hours

Energy Savings Opportunities

Our findings indicate your building is not wasting energy on lights.

Energy Recommendations Based on Measurements

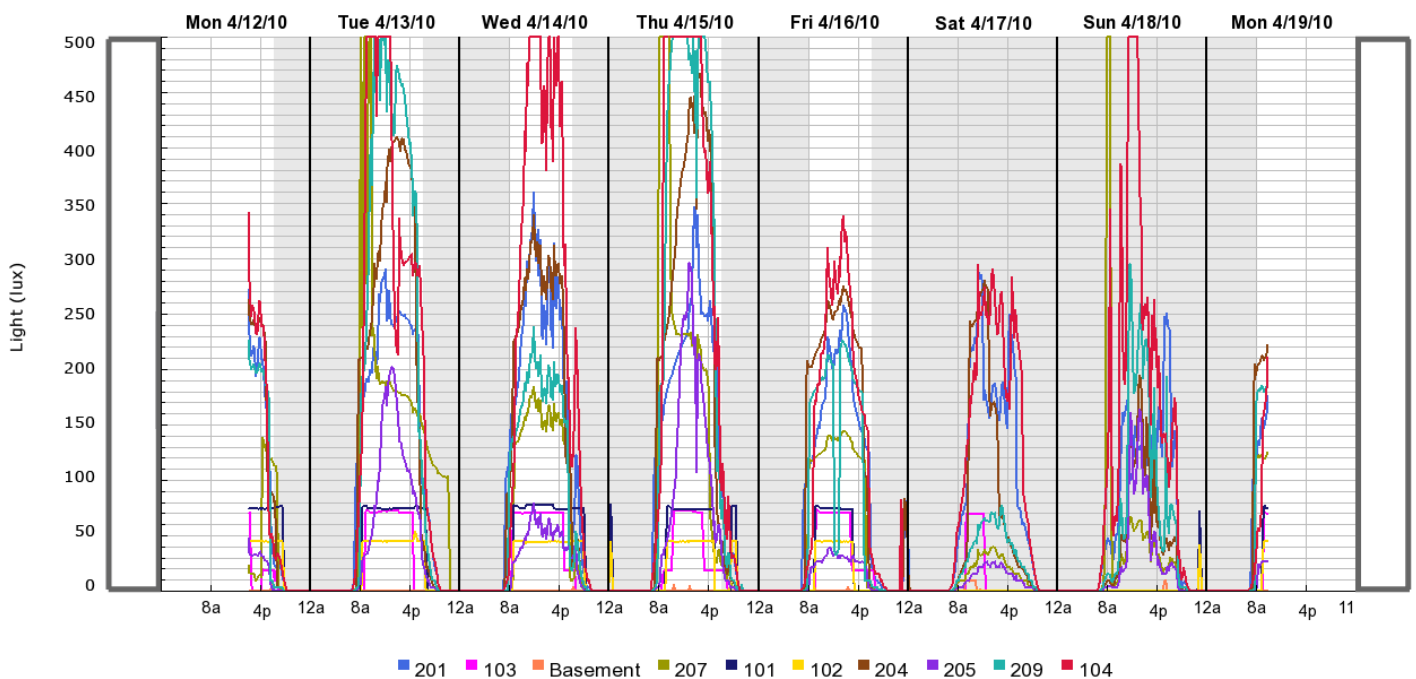
- No recommendations at this time.

Further Energy Recommendations

- No recommendations at this time.

Monitor	Alert Lvl	Measured On-Time
201		9.3 hrs
103		4.9 hrs
Basement		0.5 hrs
207		3.8 hrs
101		6.2 hrs
102		6.2 hrs
204		7.9 hrs
205		2.3 hrs
209		6.9 hrs
104		6.1 hrs

Unoccupied Time



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99501

Outdoor Temperature

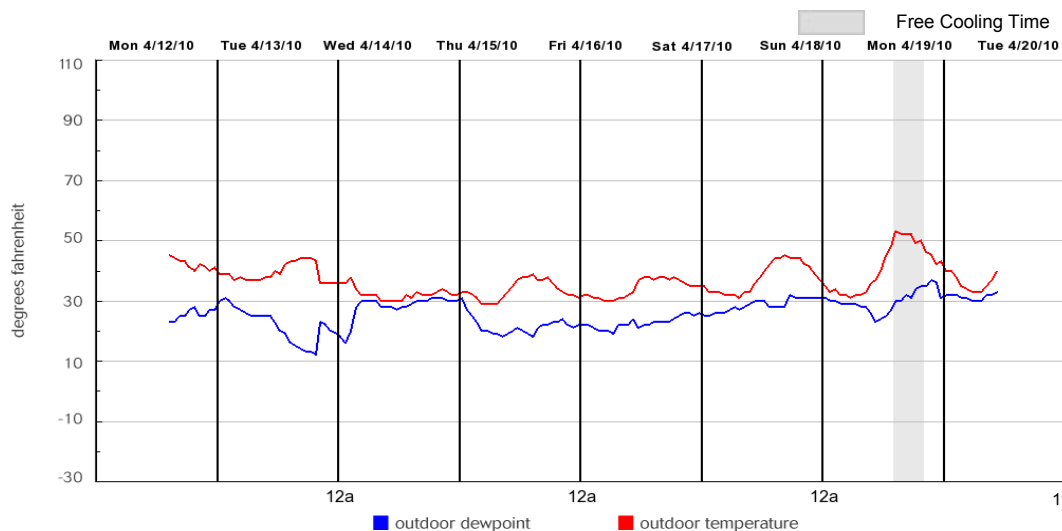
Test Period Avg: 4/12/10 – 4/19/10	Heating Degree Days	Cooling Degree Days
36 °F	29	0

Outdoor Temperature and Dew Point

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dew point during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	XXXXXXX
Contact	XXXXXXX
Address	XXXXXXX
Building Information	
Building Background	Building Usage: Office Building Size (sq ft): 16800 # of Stories: 3 Building Status: Existing Construction type: Wood Frame LEED Cert.: None Heating System: Boiler Domestic Hot Water: Gas or Other Fuel Economizer: Yes Cooling System: DX / Packaged Unit
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
201	20431
103	20420
Basement	20418
207	20416
101	20415
102	20300
204	20295
205	20293
209	20289
104	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	08:00	68	75	Yes
Tue				
Wed	18:00	68	75	No
Thu				
Fri				

Building Description

Office			
Gross Floor Area	16800	Weekly Operating Hours	50
Number of Workers on Main Shift	59	Number of PCs	57
Office Air-Conditioned	50% or more	Office Heated	50% or more

Parking			
Enclosed Floor Area	0	Non-Enclosed Floor Area (w/roof)	4000
Open Floor Area (w/o roof)	4000	Weekly Hours of Access	168

Building Controls Information

Current Controls	
Controls Type	Direct Digital
Schedule Type	Time Clock
Air Delivery Method	Constant Volume (CV)
Air-Flow Modulation	N/A

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
4/8/09	7640	\$960	29	\$0
5/8/09	8040	\$990	29	\$0
6/8/09	9880	\$1,169	33	\$0
7/8/09	12920	\$1,461	37	\$0
8/8/09	14640	\$1,586	36	\$0
9/8/09	14640	\$1,586	36	\$0
10/8/09	8840	\$1,126	34	\$0
11/8/09	8280	\$1,031	29	\$0
12/8/09	7720	\$986	29	\$0
1/8/10	8160	\$945	29	\$0
2/8/10	7640	\$911	29	\$0
3/8/10	8280	\$953	29	\$0
TOTAL:	116680	\$13,704	379	\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
4/9/09 2119		\$1,529
5/9/09 1590		\$1,163
6/9/09 1637		\$1,195
7/9/09 1278		\$948
8/9/09 1545		\$1,133
9/9/09 1570		\$1,150
10/9/09 1719		\$1,253
11/9/09 1766		\$1,285
12/9/09 2552		\$1,829
1/9/10 2775		\$1,647
2/9/10 2617		\$1,557
3/9/10 1924		\$1,162
TOTAL:	23092	\$15,851

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1007

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

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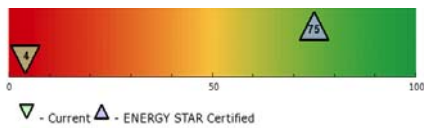
positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

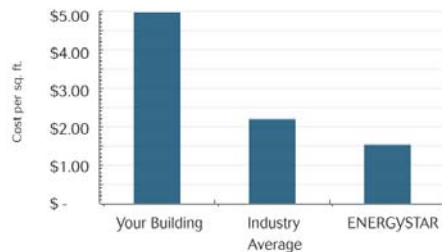


Your building's ENERGY STAR® Energy Performance Rating is **4**. Its Energy Use Index is **227 kbtu per sq. ft.**

Your building's ENERGY STAR score of 4 ranks you below average versus your peers, and falls well below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

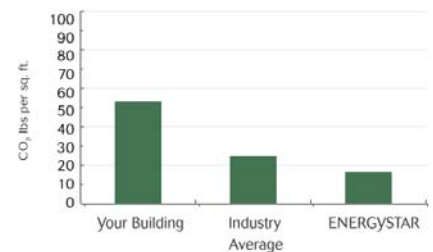


Your building's annual cost per square foot is **\$4.96 per sq. ft.** overall.

Your building's cost per square foot is \$2.77 more than the industry average. Your annual cost can be reduced by \$116,412 or 55.9% by achieving an ENERGY STAR score of 50.



Carbon Footprint



Your building's annual carbon footprint is **1,007 metric tons of CO₂ or 52.84 lbs per sq. ft.**

Your building's carbon emissions are 117.3% more than the industry average, and can be reduced by 29 lbs per sq. ft. by achieving an ENERGY STAR score of 50.

You could save up to **\$116,412** annually or **\$582,060** over 5 years by raising your ENERGY STAR score to the level of 50.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Your building has some control issues
- Your building is over-ventilated



How Does Your Building Use Electricity Today?

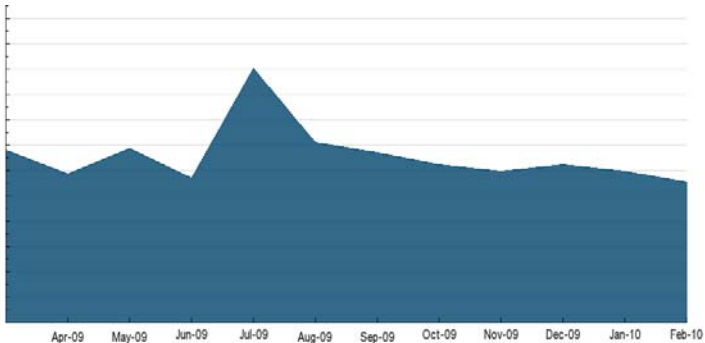
This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

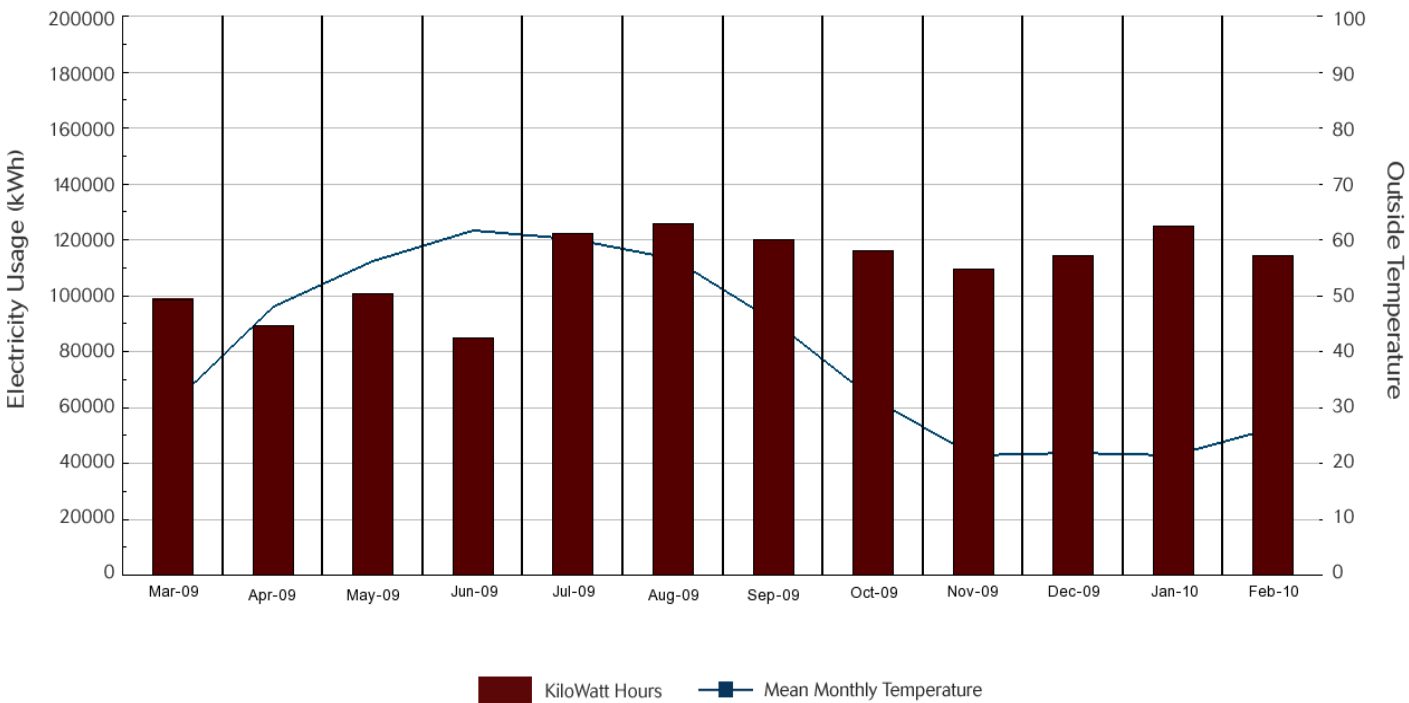
Electricity Consumption

- Electricity comprises 75.9% of your total utility cost, and 47.3% of your total utility consumption.
- Your Total Spend on electricity is \$157,999, so when considering savings opportunities, remember you can only save some percentage of that total.
- Demand costs are included in overall electricity costs.

Monthly Electricity Costs



Electricity Consumption And Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

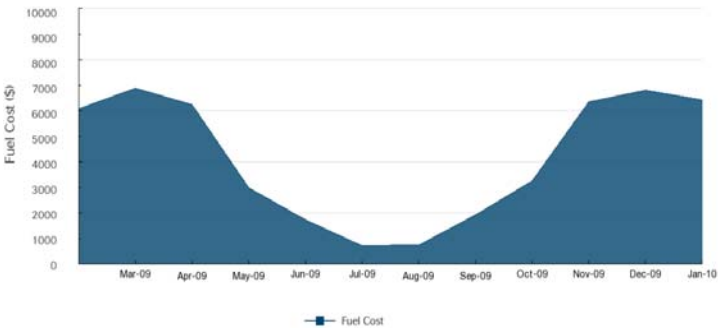


Monthly Fuel Costs

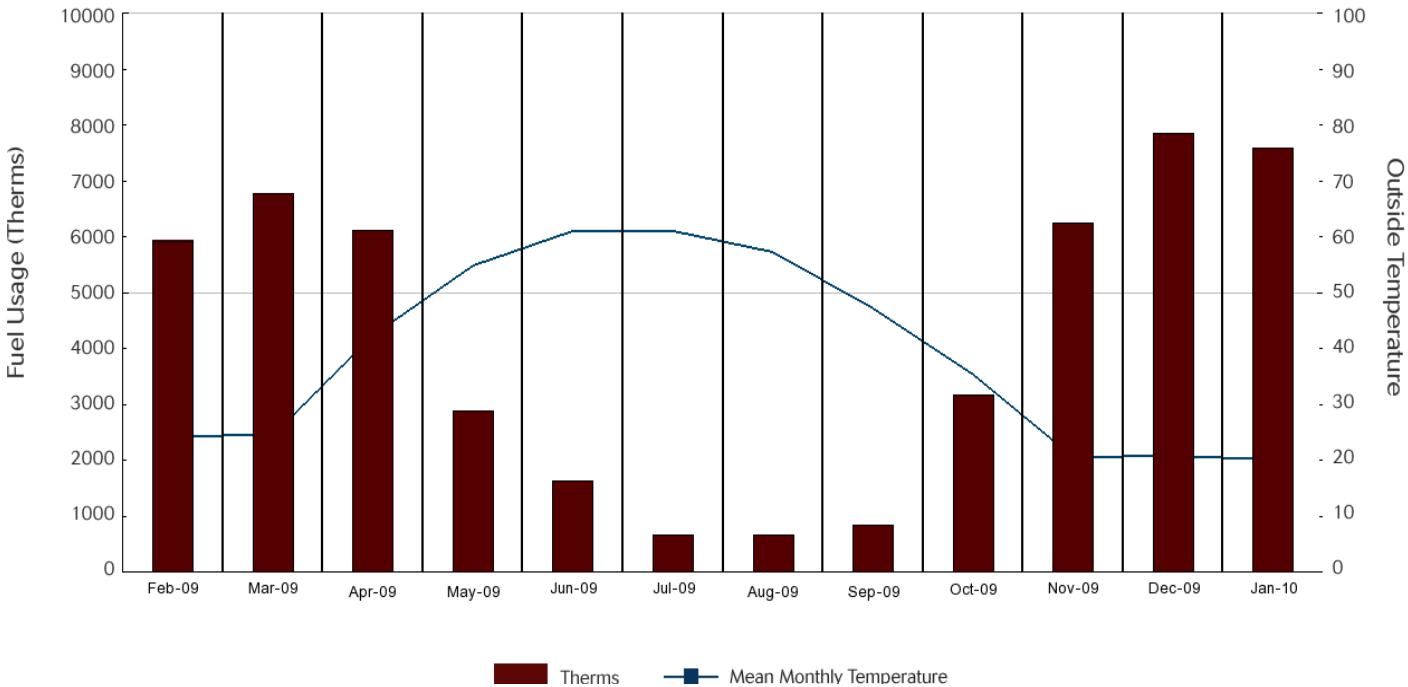
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 24.1% of your total utility cost, and 52.7% of your total utility consumption.
- Your Total Spend on Fuel is \$50,128, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption and Outside Air Temperature



Building Comfort and Ventilation Analysis

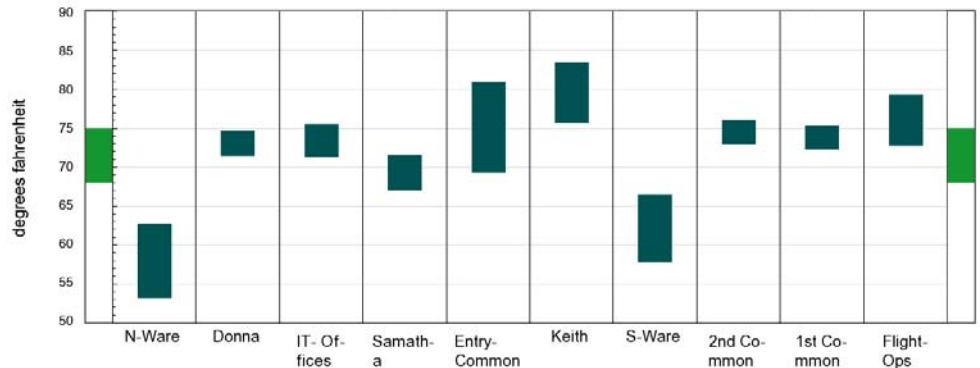
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building has some control issues in specific sections.

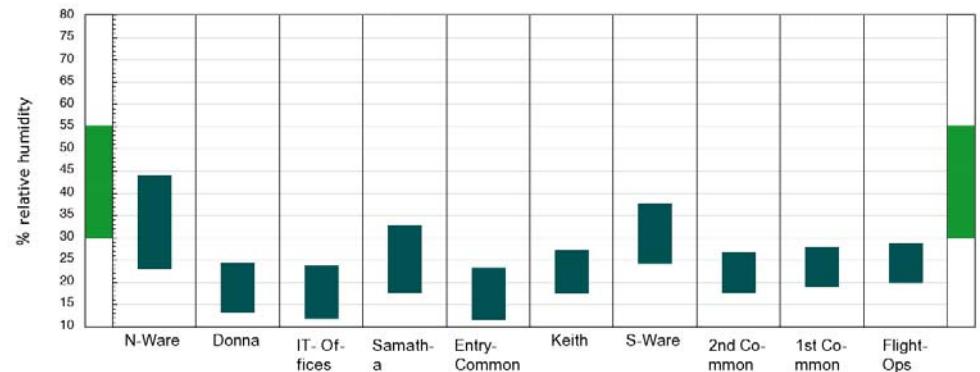
- 5 space(s) were too warm at times
- 2 space(s) were too cool at times
- 5 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 10 space(s) had low relative humidity at times

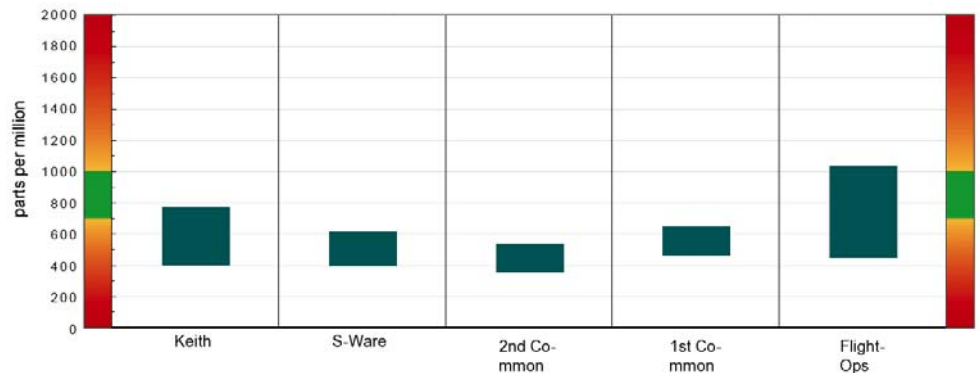


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 1 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: ± 1°F]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating Set Point is 68 / 68
	Occupied/Unoccupied Cooling Set Point is 75 / 75

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Further Comfort & Energy Recommendations

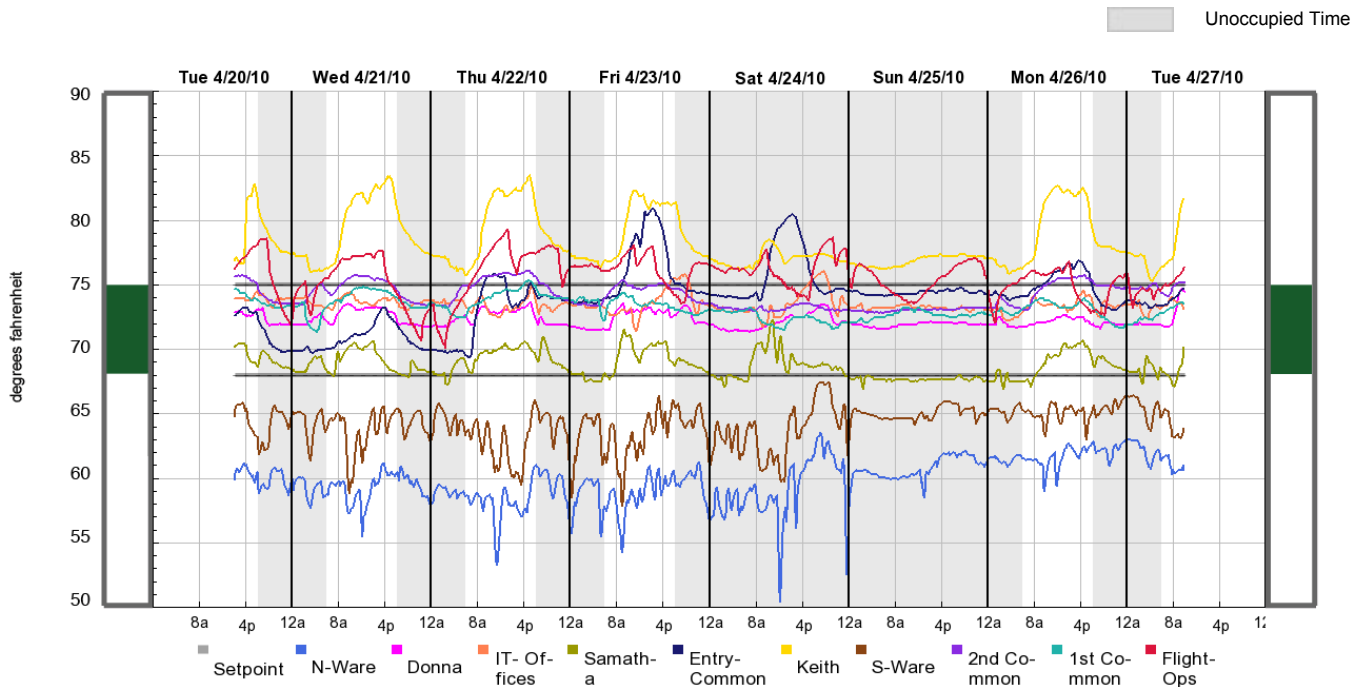
- Increase the amount of heating set back possible during the unoccupied times

Monitor Statistics

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%ToR*	SV†
N-Ware		54	62	60	98%	6
Donna		72	75	73	0%	3
IT- Offices		72	75	74	2%	3
Samatha		67	71	69	11%	4
Entry Common		69	81	74	38%	6
Keith		76	83	80	98%	6
S-Ware		60	66	64	95%	7
2nd Common		73	76	75	60%	2
1st Common		73	75	74	3%	2
Flight Ops		73	79	76	81%	4

These statistics are for occupied times only.

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

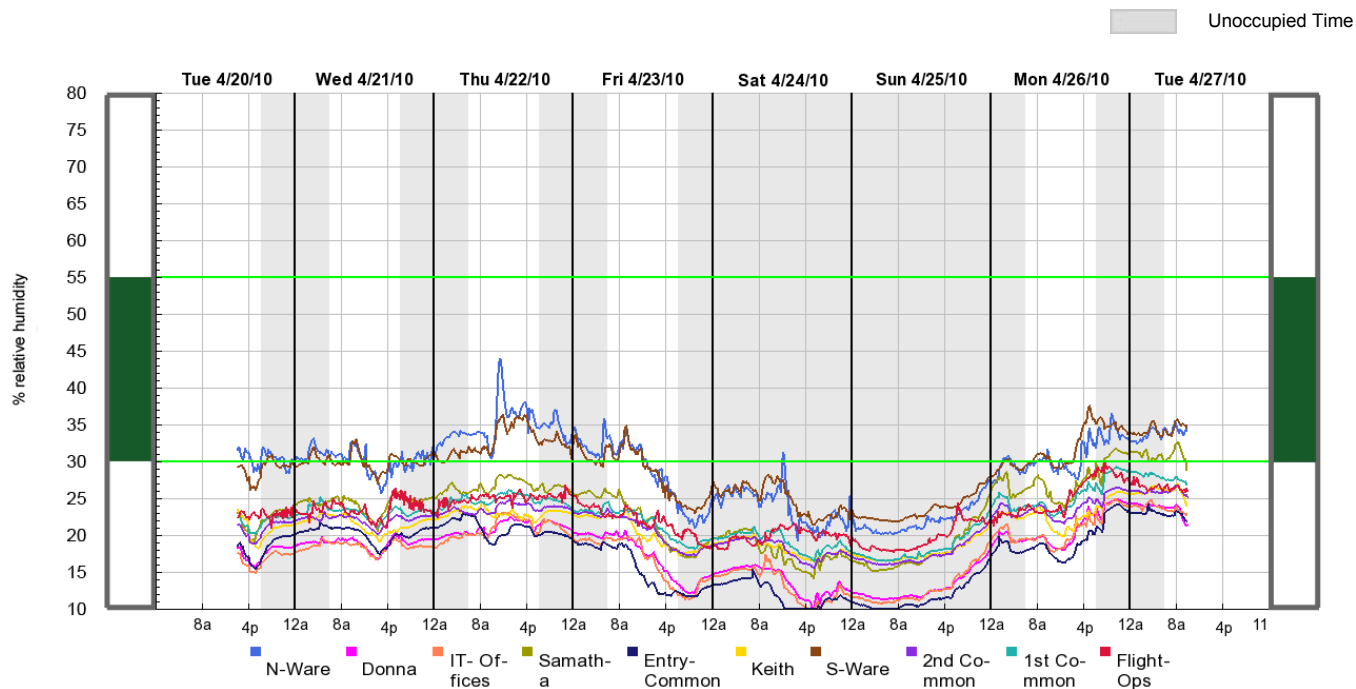
- Add humidification system
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
N-Ware		23	44	31	40%
Donna		13	24	19	100%
IT- Offices		12	24	19	100%
Samatha		18	33	25	94%
Entry Common		12	23	19	100%
Keith		18	27	22	100%
S-Ware		24	38	31	44%
2nd Common		18	27	23	100%
1st Common		19	28	24	100%
Flight Ops		20	29	24	100%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

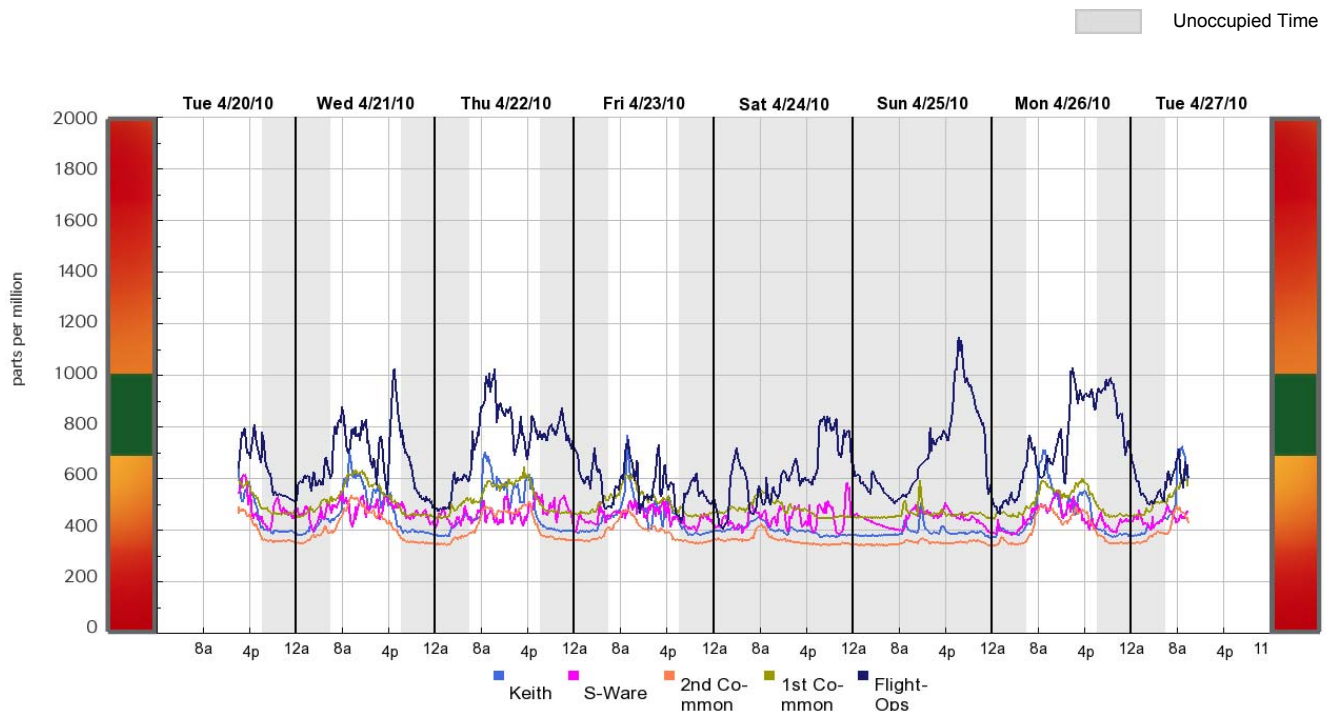
Comfort & Health Recommendations

- Increase the amount of ventilation into the building.

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
Keith		405	767	525	97%
S-Ware		400	613	478	100%
2nd Common		356	536	444	100%
1st Common		464	643	553	100%
Flight Ops		452	1030	725	50%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 8.6 average occupied hours

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

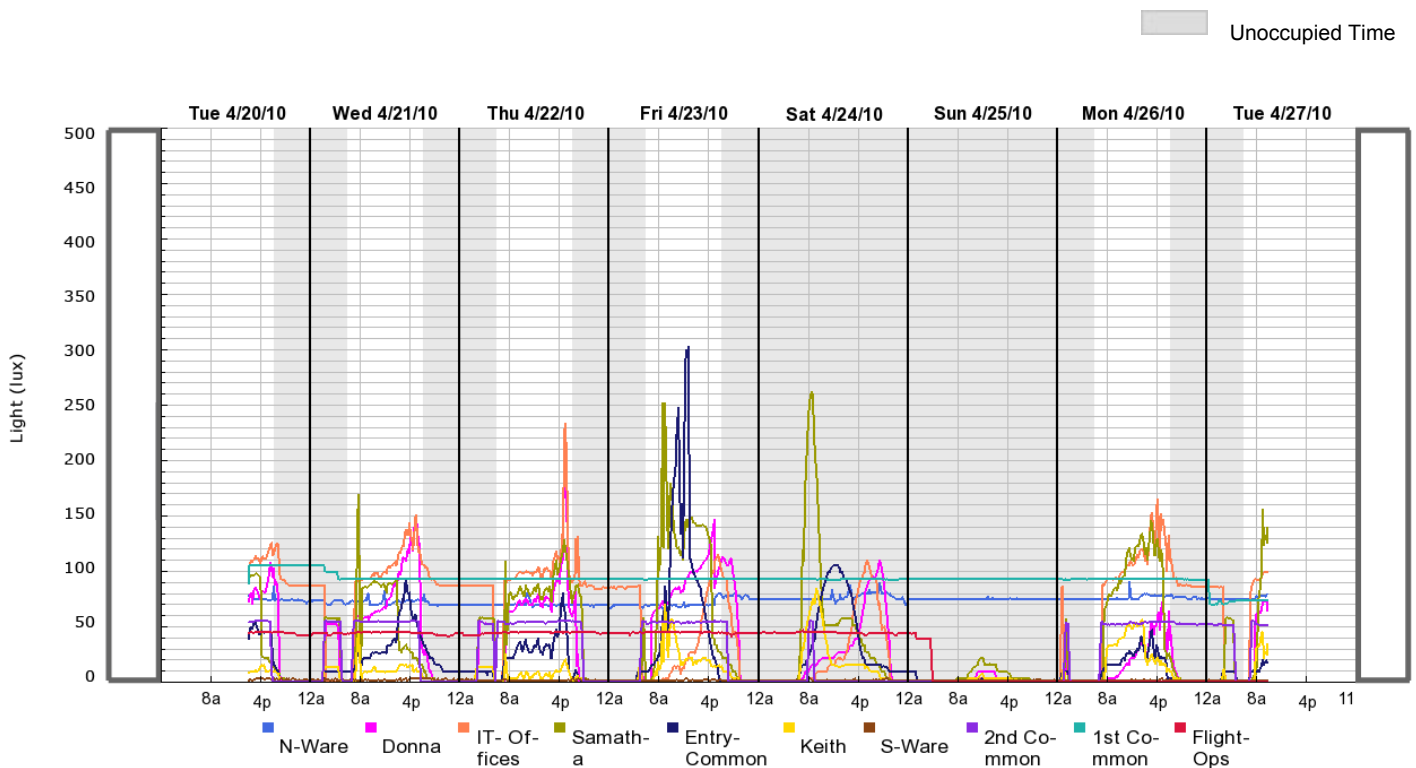
Energy Recommendations Based on Measurements

- Verify the light schedule & reduce unoccupied hours operation

Further Energy Recommendations

- Replace inefficient lamps with new high efficiency lamps
- Install occupancy sensors for individual zones
- Install daylight controls on the perimeter
- Reduce after hours use through coordination with the cleaning crews

Monitor	Alert Lvl	Measured On-Time
N-Ware		23. hrs
Donna		7.5 hrs
IT- Offices		10. hrs
Samatha		7.7 hrs
Entry Common		0.8 hrs
Keith		2.6 hrs
S-Ware		0 hrs
2nd Common		10. hrs
1st Common		23. hrs
Flight Ops		16. hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99502

Outdoor Temperature

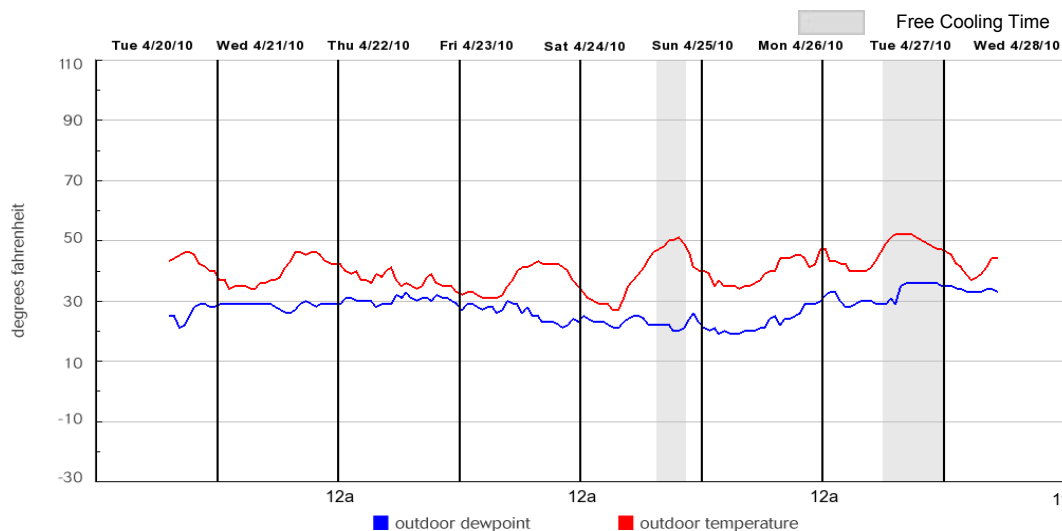
Test Period Avg: 4/20/10 – 4/27/10	Heating Degree Days	Cooling Degree Days
39 °F	26	0

Outdoor Temperature and Dew Point

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dew point during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	xxxxxxxx
Contact	xxxxxxxx
Address	xxxxxxxx
Building Information	
Building Background	Building Usage: Office Building Size (sq ft): 42000 # of Stories: 2 Building Status: Existing Construction type: Cement Block LEED Cert.: None Heating System: Boiler Domestic Hot Water: Gas or Other Fuel Economizer: Yes Cooling System: DX / Packaged Unit
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
N-Ware	20431
Donna	20420
IT- Offices	20418
Samatha	20416
Entry Common	20415
Keith	20300
S-Ware	20295
2nd Common	20293
1st Common	20289
Flight Ops	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	06:00	68	75	Yes
Tue				
Wed	18:00	68	75	No
Thu				
Fri				

Building Description

Office			
Gross Floor Area	12000	Weekly Operating Hours	60
Number of Workers on Main Shift	28	Number of PCs	26
Office Air-Conditioned	50% or more	Office Heated	50% or more

Warehouse (Unrefrigerated)			
Gross Floor Area	30000	Number of Workers on Main Shift	18
Weekly Operating Hours	160	% Air-Conditioned	0
% Heated	100	Walk-in Refrigeration/Freezer Units	4

Parking			
Enclosed Floor Area	0	Non-Enclosed Floor Area (w/roof)	0
Open Floor Area (w/o roof)	20000	Weekly Hours of Access	168

Building Controls Information

Current Controls	
Controls Type	Pneumatic DDC Hybrid
Schedule Type	Time Clock
Air Delivery Method	Variable Air Volume
Air-Flow Modulation	Variable Frequency Drive

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
3/18/09	98525	\$13,626		\$0
4/18/09	89369	\$11,732		\$0
5/18/09	100686	\$13,733		\$0
6/18/09	84672	\$11,397		\$0
7/18/09	122060	\$20,080		\$0
8/18/09	125509	\$14,171		\$0
9/18/09	119851	\$13,374		\$0
10/18/09	116232	\$12,497		\$0
11/18/09	109505	\$11,906		\$0
12/18/09	114397	\$12,454		\$0
1/18/10	124889	\$11,942		\$0
2/18/10	114210	\$11,087		\$0
TOTAL:	1319905	\$157,999		\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
2/14/09 5912		\$6,073
3/3/09 6761		\$6,872
4/7/09 6109		\$6,235
5/11/09 2888		\$2,980
6/14/09 1636		\$1,721
7/14/09 652		\$732
8/14/09 657		\$736
9/14/09 835		\$1,922
10/14/09 3167		\$3,265
11/14/09 6242		\$6,347
12/14/09 7842		\$6,812
1/13/10 7572		\$6,433
TOTAL:	50273	\$50,128

Commercial Energy Savings Assessment



Watt Buster



ASSESSMENT SITE

1008

ASSESSMENT PERFORMED BY

Control Contractors – Anchorage

5660 B Street

Anchorage, Alaska 99518



smart building solutions

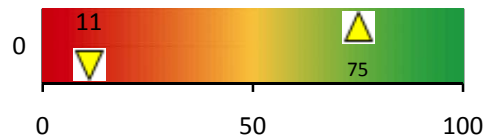


posi⊕iveENERGY

EXECUTIVE SUMMARY



Energy Use

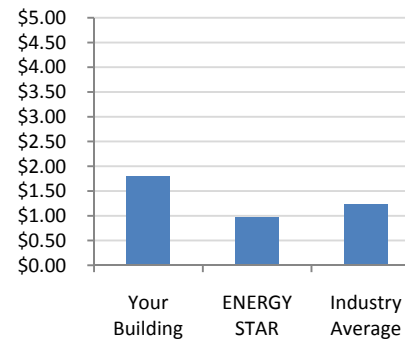


Your building's ENERGY STAR® Energy Performance Rating is 11. Its Energy Use Index is 131 kbtu per sq. ft.

Your building's ENERGY STAR score of 11 ranks you below average versus your peers, and falls well below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

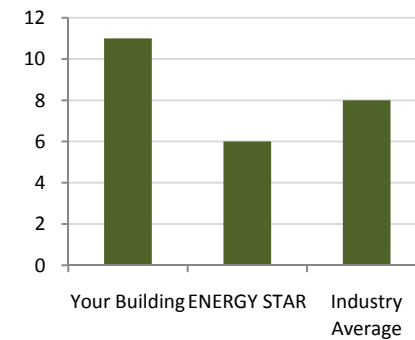


Your building's annual cost per square foot is \$1.80 per sq. ft. overall.

Your building's cost per square foot is \$0.57 more than the industry average. Your annual cost can be reduced by \$32,827 (31%) or \$164,135 over 5 years by achieving an ENERGY STAR score of 50.



Carbon Footprint



Your building's annual carbon footprint is 625 metric tons of CO2 or 11lbs per sq. ft.

Your building's carbon emissions are 44.7% more than the industry average, and can be reduced by 3 lbs per sq. ft. by achieving an ENERGY STAR score of 50.

You could save up to **\$32,827** annually or 164,135 over 5 years by raising your ENERGY STAR score to the level of 50

While a detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR database.

How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

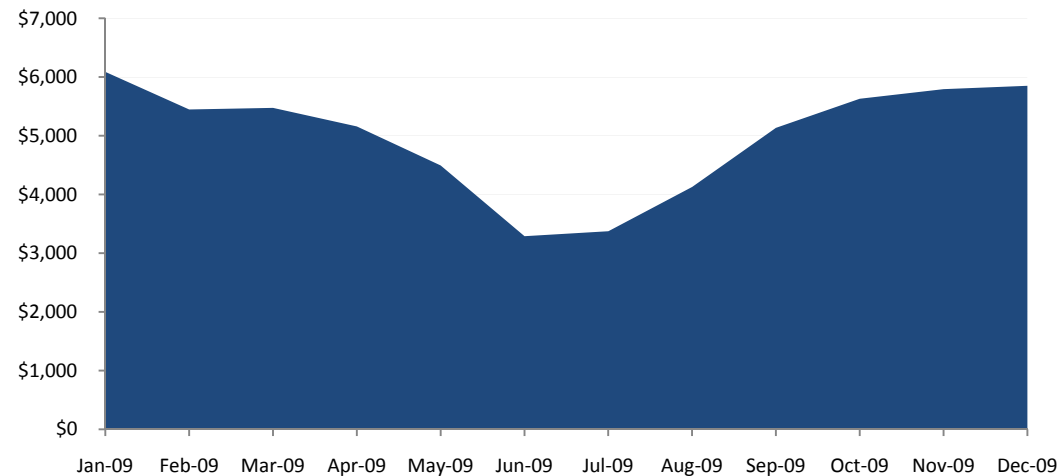


MONTHLY ELECTRICTY COST

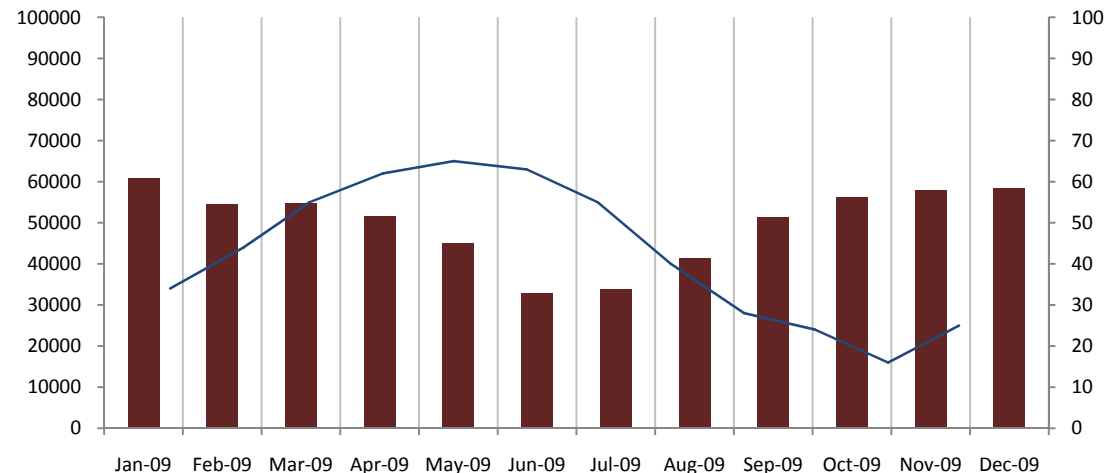
Utility Bill Analysis

Electricity Consumption

- Electricity comprises 56.6% of your total utility cost, and 28.9% of your total utility consumption.
- Your Total Spend on electricity is \$56,620, so when considering savings opportunities, remember you can only save some percentage of that total.



ELECTRICITY CONSUMPTION AND OUTSIDE AIRTEMPERATURE



How Does Your Building Use Fuel Today?

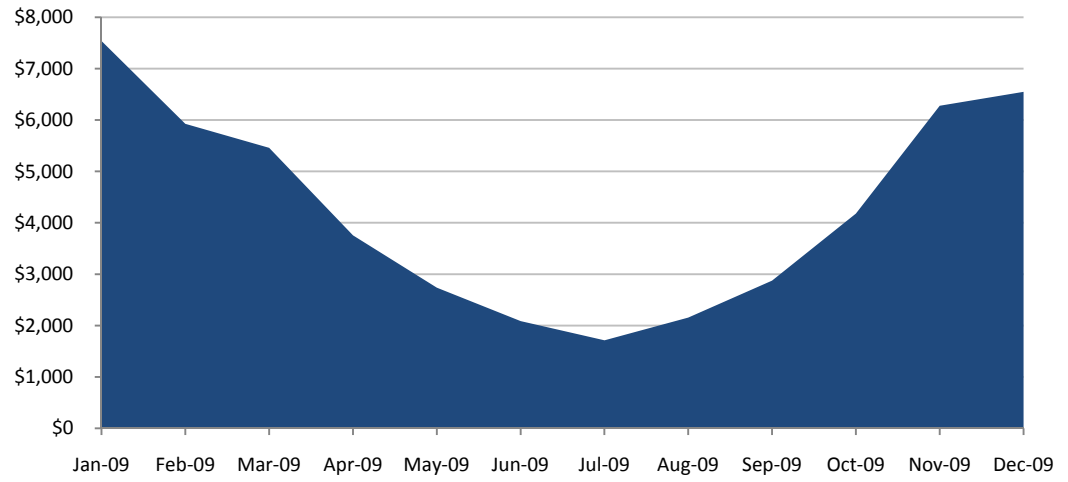
This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

MONTHLY FUEL COST

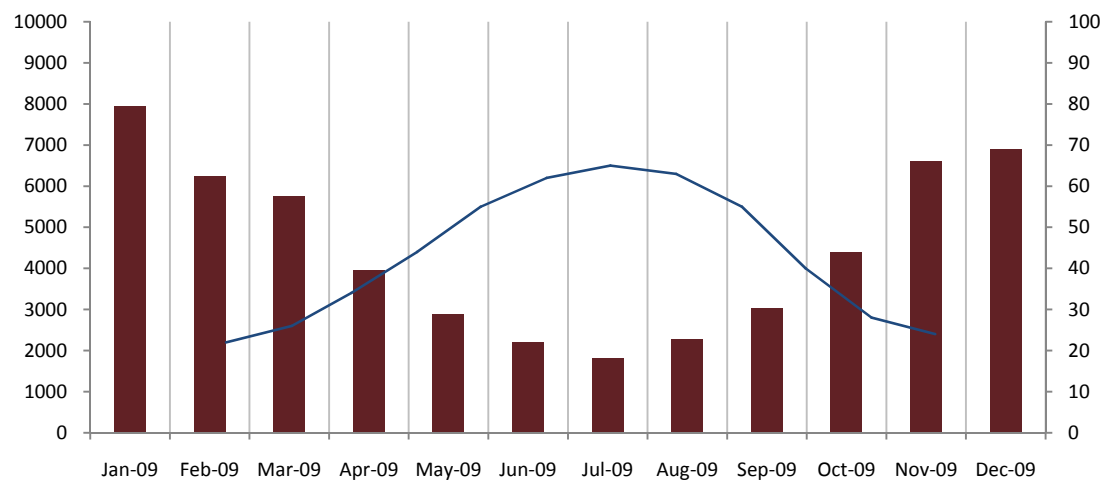
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 43.4% of your total utility cost, and 71.1% of your total utility consumption.
- Your Total Spend on Fuel is \$43,394, so when considering savings opportunities, remember you can only save some percentage



FUEL CONSUMPTION AND OUTSIDE AIRTEMPERATURE



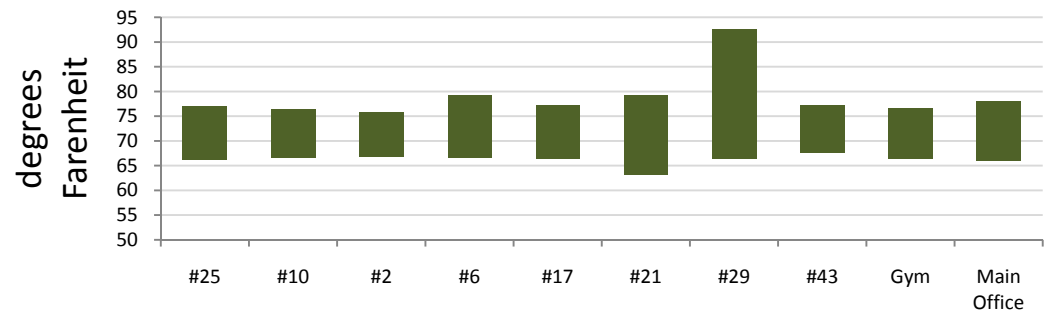
Building Comfort and Ventilation Analysis

This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

TEMPERATURE FINDINGS

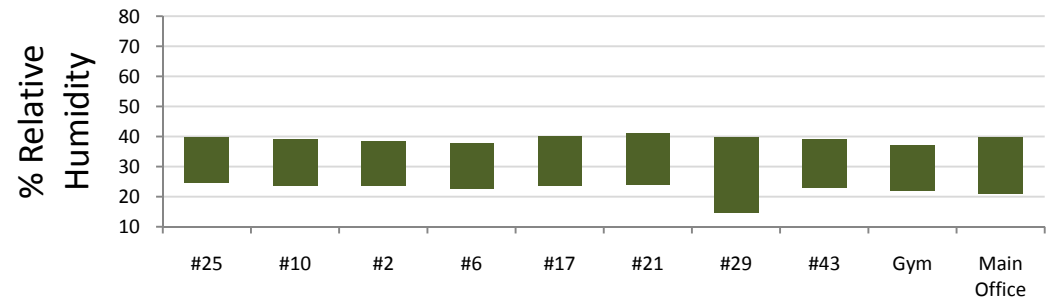
Your building is out of control with ample opportunity to save money.

- 10 space(s) were too warm at times
- 0 space(s) were too cool at times
- 10 space(s) had excessive temperature variation



RELATIVE HUMIDITY

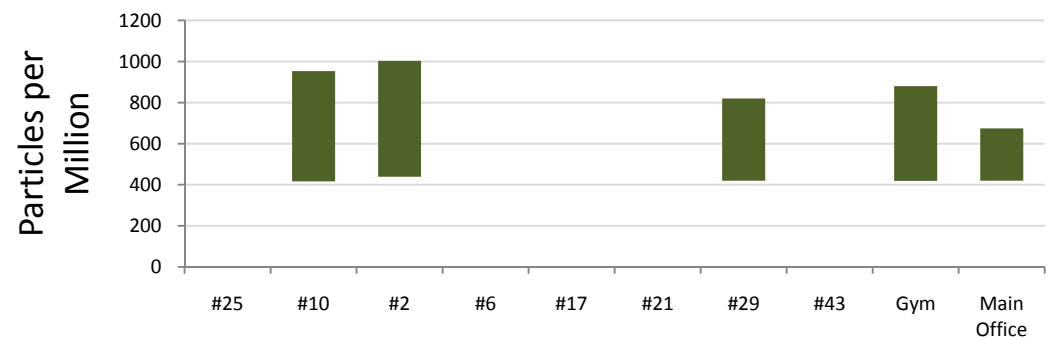
- 0 space(s) had high relative humidity at times
- 10 space(s) had low relative humidity



CARBON DIOXIDE

Your building is over ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating setpoint and raising the cooling setpoint can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

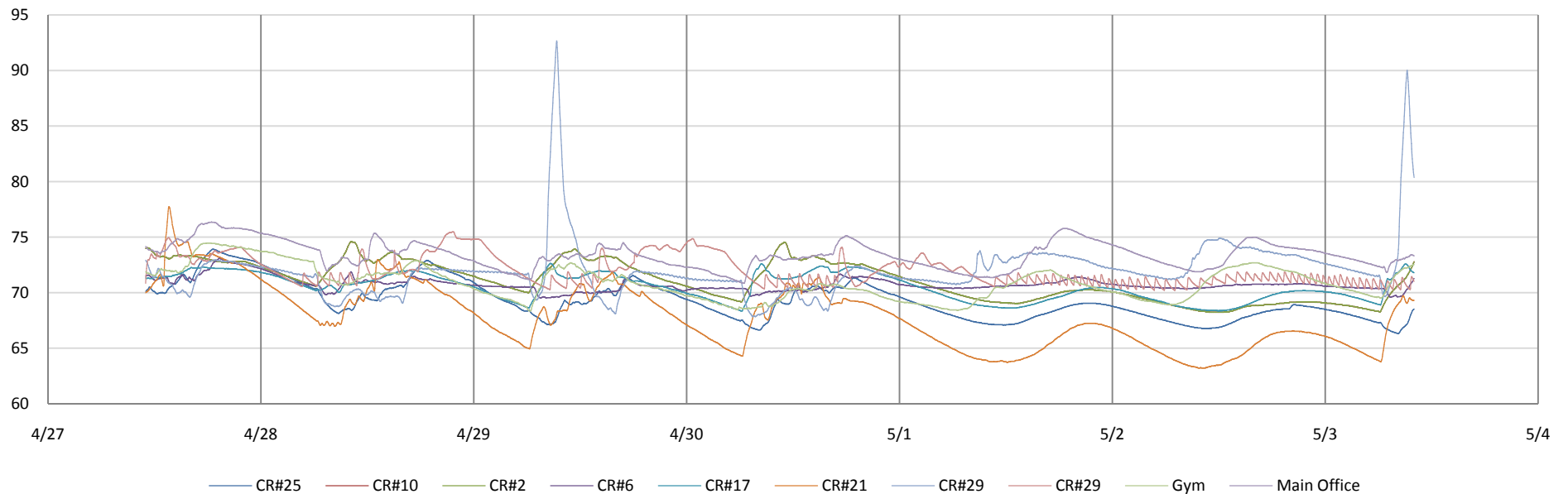
Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently.

Energy Recommendations based on Measurements

- Calibrate thermostats to reduce temperature variation
- Verify the control system is shutting the heat and cooling equipment off
- Move thermostats to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

TIME – TEMPERATURE



Relative-Humidity

Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

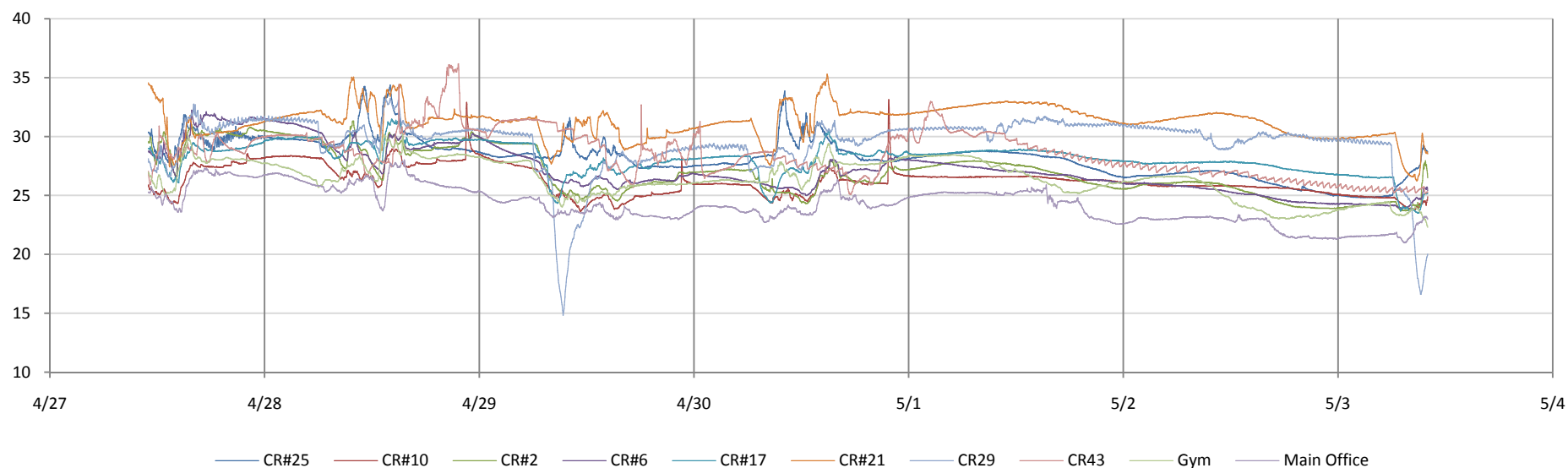
Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

- Add humidification system
- Improve ventilation control

TIME-RELATIVE HUMIDITY



Carbon Dioxide

Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

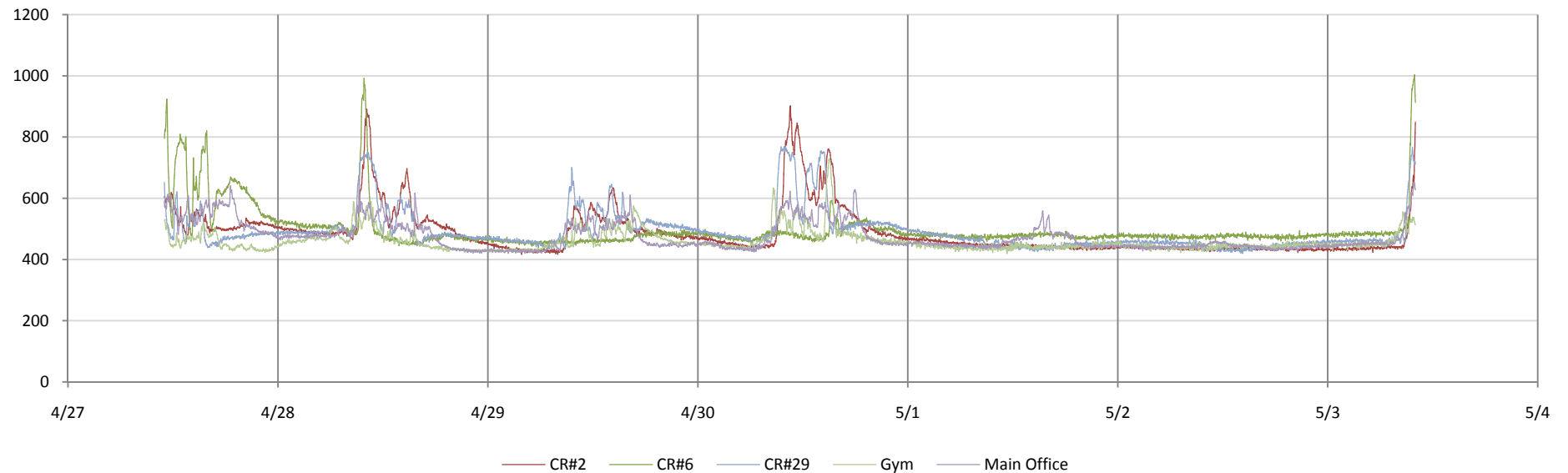
Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building different:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

TIME-CARBON DIOXIDE



Lighting

Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

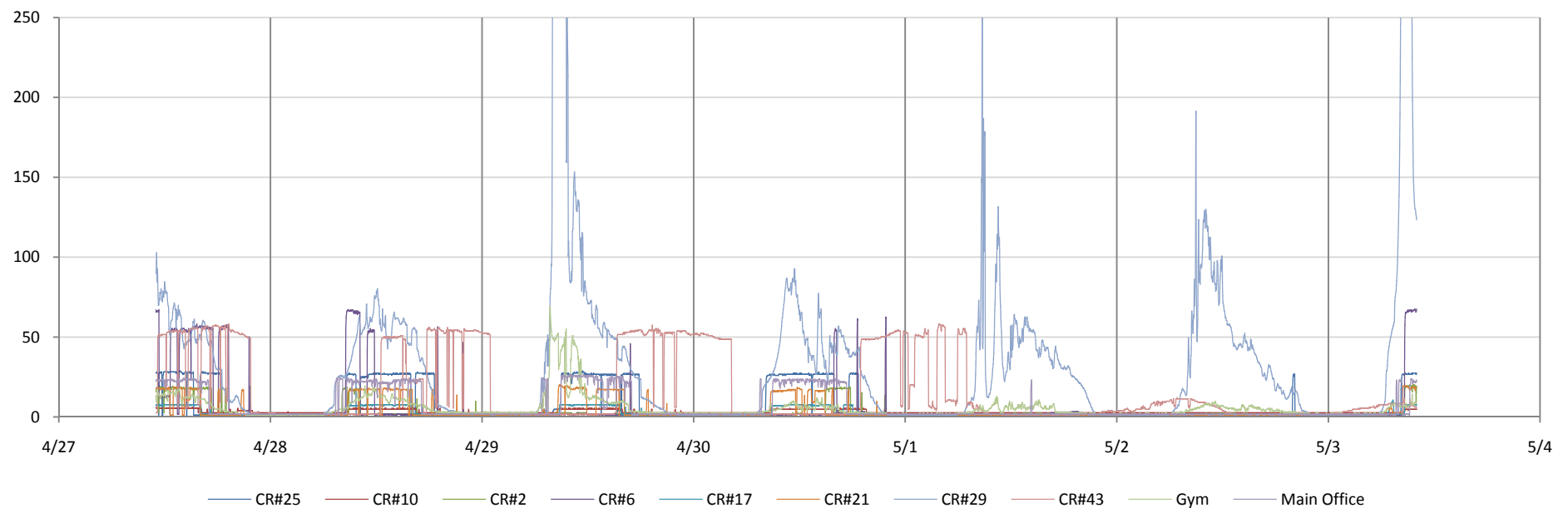
Sources: BOMA, ENERGY STAR, DOE

Energy Saving Opportunities

Energy Recommendations Based on Measurements

- Verify proper lighting levels in each area of the building

TIME_LIGHTING



Building and Monitor Placement Information

General Information

Contact Information	
Building Name	XXXXXXXXXXXXXX
Contact	XXXXXXXXXXXXXX
Address	XXXXXXXXXXXXXX
Building Information	
Building Background	Building Usage K-12 Building Size (sqft): 57,314 # of Stories: 1 Building Status: Existing Construction type: Cement Block LEED Cert.: None Heating System: Boiler Domestic Hot Water: Gas/Fuel Economizer: Yes Cooling System: None
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
Main Office	39
CR# 6	35
CR# 2	42
CR# 21	34
CR# 17	40
CR#10	41
CR# 43	43
CR# 25	36
CR# 29	37
Gym Office	38

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	00:00	68	78	Yes
Tue				
Wed				
Thu				
Fri	23:59	68	78	No

Building Description

K-12			
Gross Floor Area	57,314	Weekly Operating Hours	45
Number of Workers on Main Shift	75	Number of PCs	200
Office Air-Conditioned	0 %	Office Heated	50% or more

Building Controls Information

Current Controls	
Controls Type	Pneumatic DDC Hybrid
Schedule Type	Time Clock
Air Delivery Method	Constant Volume (CV)
Air-Flow Modulation	N/A



STATEMENT OF ENERGY PERFORMANCE 1008

Building ID: 2313380

For 12-month Period Ending: November 30, 2009¹

Date SEP becomes ineligible: N/A

Date SEP Generated: October 05, 2010

Facility

1008
1008
Anchorage, AK 99502

Facility Owner

N/A

Primary Contact for this Facility

N/A

Year Built: 1980**Gross Floor Area (ft²):** 57,458**Energy Performance Rating² (1-100)** 11**Site Energy Use Summary³**

Electricity - Grid Purchase(kBtu)	2,038,718
Natural Gas (kBtu) ⁴	5,491,789
Total Energy (kBtu)	7,530,507

Energy Intensity⁵

Site (kBtu/ft²/yr)	131
Source (kBtu/ft²/yr)	219

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	627
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Electric Distribution Utility

Chugach Electric Assn Inc

National Average Comparison

National Average Site EUI	90
National Average Source EUI	149
% Difference from National Average Source EUI	46%
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) or a Registered Architect (RA) 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 or RA 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	1008	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	1008, Anchorage , AK 99502	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		☐

Data (Data Center)

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	144 Sq. Ft.	Is this the total gross floor area measured between the principal exterior surfaces of the enclosing fixed walls, including all supporting functions for the Data Center? This should include the entire Data Center for stand alone facilities, which may have raised floor computing space, server rack aisles, storage silos, control console areas, battery rooms, mechanical rooms for cooling equipment, administrative office areas, elevator shafts, stairways, break rooms and restrooms. When a Data Center is located within a larger building, the total gross floor area should include the computing space as well as any mechanical rooms or office spaces that support the data center.		☐
IT Energy Configuration	IT Energy is not currently metered at this facility - Apply estimates.	Is there inadequate metering at this facility to measure IT energy consumption at either the Output of the UPS or Input of the PDU?		☐
UPS System Redundancy	N/A(Optional)	Is this the level of redundancy of the Uninterruptible Power Supply (UPS)? If there is no UPS system, is this the redundancy for the PDU Meters that support the IT Load?		☐
Cooling Equipment Redundancy	N/A(Optional)	Is this the level of redundancy for the mechanical cooling equipment at the Data Center?		☐
Annual IT Energy	0.00 kBtu	Does this total IT Energy reflect the total IT load at the Data Center in accordance with the EPA metering requirements? EPA metering requirements are for a meter at the output of the UPS meter. 1. Facilities that do not have a UPS meter are permitted to provide readings from the input of the PDU 2. Facilities for which more than 10% of the UPS load is directed to non-IT equipment are permitted to subtract the non-IT loads if they are sub-metered, or to report a reading from the PDU if the non-IT loads are not sub-metered		☐

K-12 (K-12 School)

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
-----------	---------------------------------------	------------------------	-------	-------------------------------------

Gross Floor Area	57,314 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	200	Is this the number of personal computers in the K12 School?	☐
Number of walk-in refrigeration/freezer units	1	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	0 %	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	10(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'.	☐

Parking (Parking)

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	30,000 Sq. Ft.	Is this the total square footage of the entire parking area (enclosed + nonenclosed + open floor area)?		☐
Enclosed Floor Area	0 Sq. Ft.	Is this the total square footage of the enclosed garage space? An enclosed garage is defined as having both sides and a roof.		☐
Non-Enclosed Floor Area (w/roof)	0 Sq. Ft.	Is this the total square footage of the nonenclosed garage space? This is typically defined as the portion of the garage above ground (contains no sides but is under a roof).		☐
Open Floor Area (w/o roof)	30,000 Sq. Ft.	Is this the total square footage of the nonenclosed parking area without a roof? This is typically defined as open parking lots or the very top level of an above ground parking garage.		☐
Weekly Hours of Access	168 Hours	Is this the total number of hours per week when it is possible for a vehicle to enter or exit?		☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Chugach Electric Assn Inc

Fuel Type: Electricity		
Meter: Electricity (kWh (thousand Watt-hours)) Space(s): Entire Facility Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
10/05/2009	11/04/2009	57,964.00
09/05/2009	10/04/2009	56,311.00
08/05/2009	09/04/2009	51,346.00
07/05/2009	08/04/2009	41,306.00
06/05/2009	07/04/2009	33,742.00
05/05/2009	06/04/2009	32,898.00
04/05/2009	05/04/2009	44,942.00
03/05/2009	04/04/2009	51,596.00
02/05/2009	03/04/2009	54,777.00
01/05/2009	02/04/2009	54,456.00
12/05/2008	01/04/2009	60,901.00
Electricity Consumption (kWh (thousand Watt-hours))		540,239.00
Electricity Consumption (kBtu (thousand Btu))		1,843,295.47
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		1,843,295.47
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☐
Fuel Type: Natural Gas		
Meter: Gas (ccf (hundred cubic feet)) Space(s): Entire Facility		
Start Date	End Date	Energy Use (ccf (hundred cubic feet))
10/05/2009	11/04/2009	6,611.00
09/05/2009	10/04/2009	4,402.00
08/05/2009	09/04/2009	3,027.00
07/05/2009	08/04/2009	2,268.00
06/05/2009	07/04/2009	1,804.00
05/05/2009	06/04/2009	2,198.00
04/05/2009	05/04/2009	2,882.00
03/05/2009	04/04/2009	3,955.00
02/05/2009	03/04/2009	5,749.00
01/05/2009	02/04/2009	6,239.00
12/05/2008	01/04/2009	7,939.00

Gas Consumption (ccf (hundred cubic feet))	47,074.00
Gas Consumption (kBtu (thousand Btu))	4,843,914.60
Total Natural Gas Consumption (kBtu (thousand Btu))	4,843,914.60
Is this the total Natural Gas consumption at this building including all Natural Gas 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.	☐

On-Site Solar and Wind Energy	
Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.	☐

Total IT Energy from All Required Meters	
Annual Site IT Energy (kWh)	0.00
Annual Source IT Energy (kWh)	0.00

Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA 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
1008
1008
Anchorage , AK 99502

Facility Owner
N/A

Primary Contact for this Facility
N/A

General Information

1008	
Gross Floor Area Excluding Parking: (ft ²)	57,458
Year Built	1980
For 12-month Evaluation Period Ending Date:	November 30, 2009

Facility Space Use Summary

Data		Parking	
Space Type	Data Center	Space Type	Parking
Gross Floor Area(ft ²)	144	Gross Floor Area(ft ²)	30,000
IT Energy Configuration	IT Energy is not currently metered at this facility - Apply estimates.	Enclosed Floor Area	0
UPS System Redundancy°	N/A	Non-Enclosed Floor Area (w/roof)	0
Cooling Equipment Redundancy°	N/A	Open Floor Area (w/o roof)	30,000
Annual Source IT Energy (kBtu)	0	Weekly Hours of Access	168
K-12			
Space Type	K-12 School		
Gross Floor Area(ft ²)	57,314		
Open Weekends?	No		
Number of PCs	200		
Number of walk-in refrigeration/freezer units	1		
Presence of cooking facilities	Yes		
Percent Cooled	0		
Percent Heated	100		
Months°	10		
High School?	No		
School District°	Anchorage		

Energy Performance Comparison

Performance Metrics	Evaluation Periods		Comparisons		
	Current (Ending Date 11/30/2009)	Baseline (Ending Date 11/30/2009)	Rating of 75	Target	National Average
Energy Performance Rating	11	11	75	50	50
Energy Intensity					
Site (kBtu/ft ²)	131	131	71	90	90
Source (kBtu/ft ²)	219	219	119	149	149
Energy Cost					
\$/year	\$ 103,645.33	\$ 103,645.33	\$ 56,441.07	\$ 70,818.25	\$ 70,818.25
\$/ft ² /year	\$ 1.80	\$ 1.80	\$ 0.98	\$ 1.23	\$ 1.23
Greenhouse Gas Emissions					
MtCO ₂ e/year	627	627	341	428	428

kgCO ₂ e/ft ² /year	11	11	6	8	8
---	----	----	---	---	---

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.

Statement of Energy Performance

2009

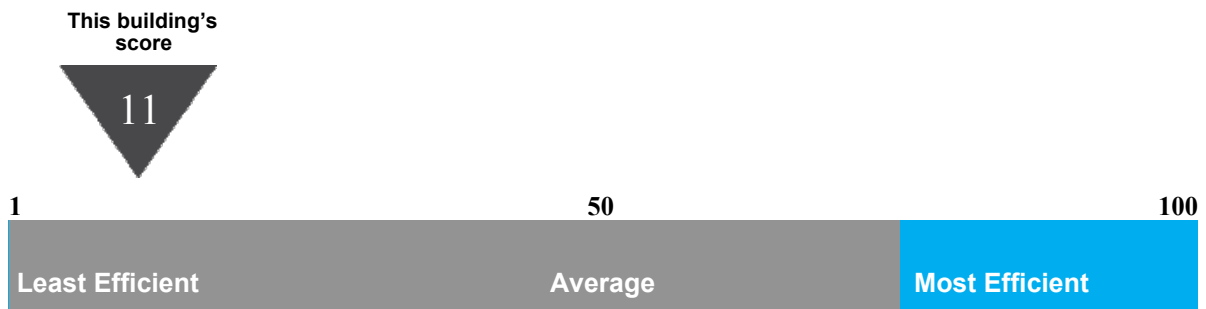
1008

1008

Anchorage , AK 99502

Portfolio Manager Building ID: 2313380

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit energystar.gov/benchmark.



This building uses 219 kBtu per square foot per year.*

*Based on source energy intensity for the 12 month period ending November 2009

Buildings with a score of 75 or higher may qualify for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at energystar.gov

Date of certification



Date Generated: 10/05/2010

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1009

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

CHUGACH
POWERING ALASKA'S FUTURE

CONTROL
CONTRACTORS

smart building solutions



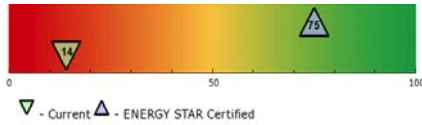
positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

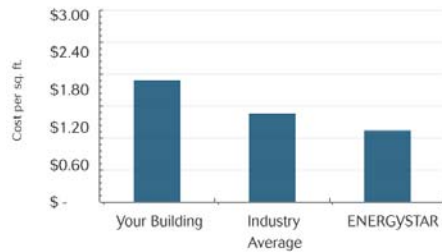


Your building's ENERGY STAR® Energy Performance Rating is **14**. Its Energy Use Index is **119 kbtu per sq. ft.**

Your building's ENERGY STAR score of 14 ranks you below average versus your peers, and falls well below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

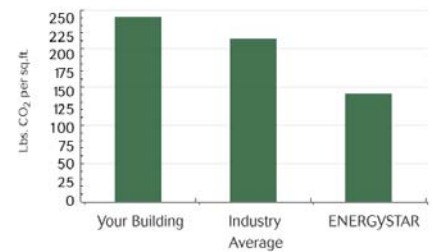


Your building's annual cost per square foot is **\$1.90 per sq. ft.** overall.

Your building's cost per square foot is \$0.52 more than the industry average. Your annual cost can be reduced by \$27,683 or 27.3% by achieving an ENERGY STAR score of 50.



Carbon Footprint



Your building's annual carbon footprint is **581 metric tons of CO₂** or **24.05 lbs per sq. ft.**

Your building's carbon emissions are 13.6% more than the industry average, and can be reduced by 3 lbs per sq. ft. by achieving an ENERGY STAR score of 50.

You could save up to **\$27,683** annually or \$138,415 over 5 years by raising your ENERGY STAR score to the level of 50.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Your building is controlled well
- Your building is over-ventilated



How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

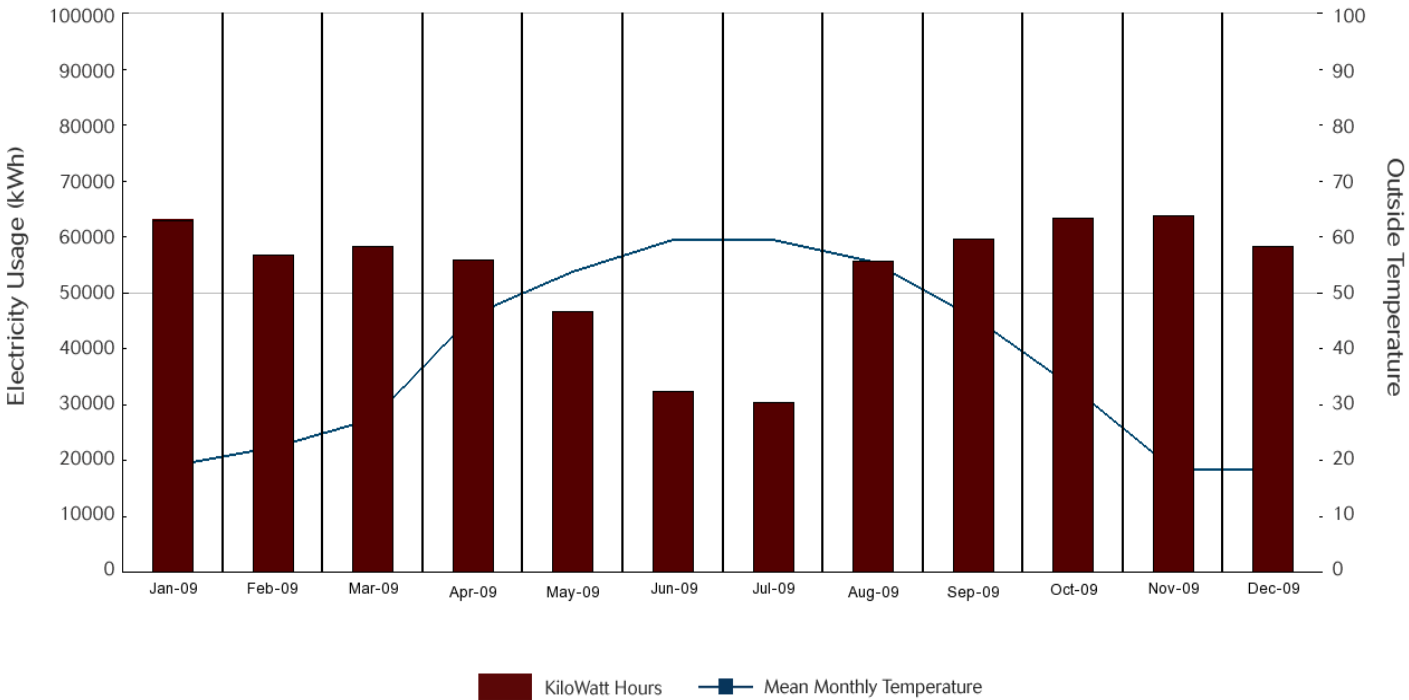
Electricity Consumption

- Electricity comprises 63.5% of your total utility cost, and 34.6% of your total utility consumption.
- Your Total Spend on electricity is \$64,309, so when considering savings opportunities, remember you can only save some percentage of that total.
- Demand costs are included in overall electricity costs.

Monthly Electricity Costs



Electricity Consumption and Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

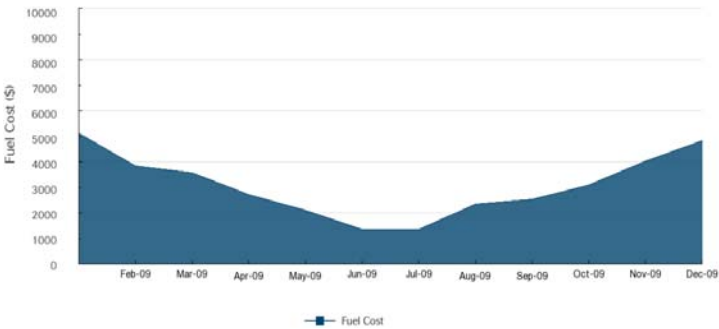


Monthly Fuel Costs

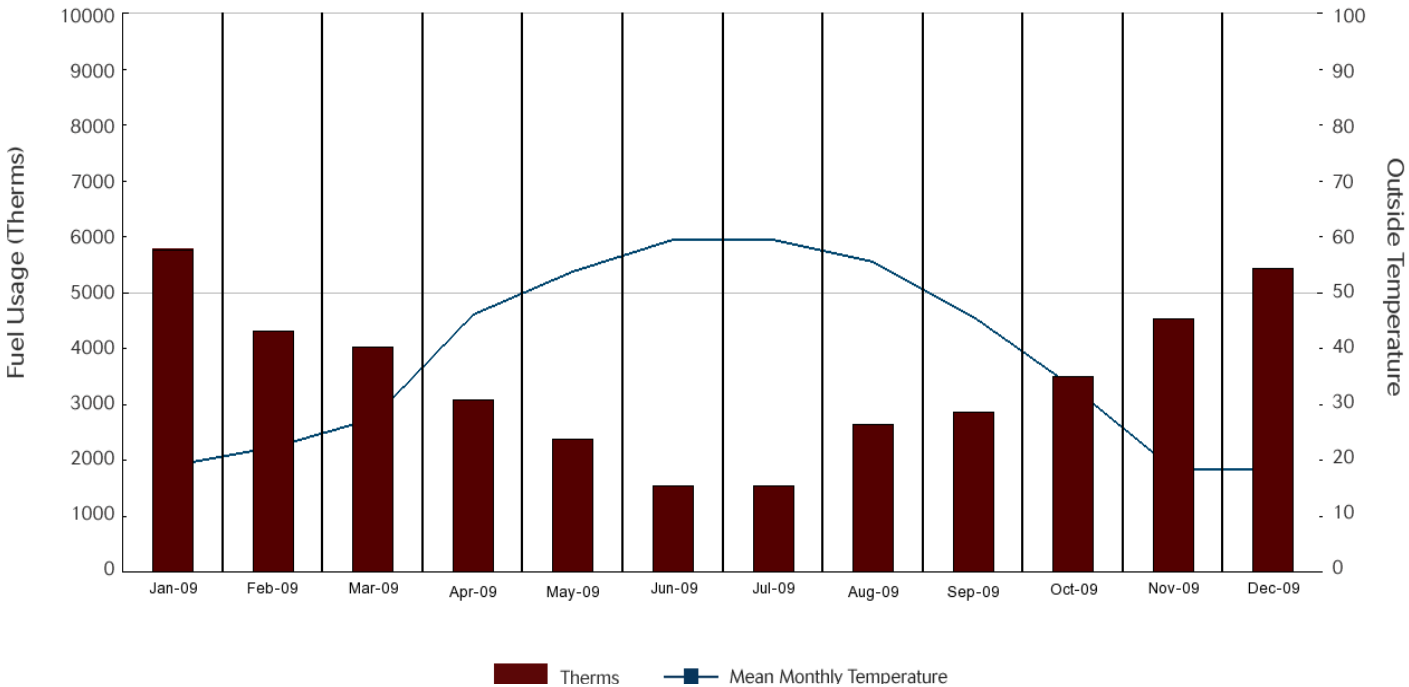
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 36.5% of your total utility cost, and 65.4% of your total utility consumption.
- Your Total Spend on Fuel is \$36,945, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption and Outside Air Temperature



Building Comfort and Ventilation Analysis

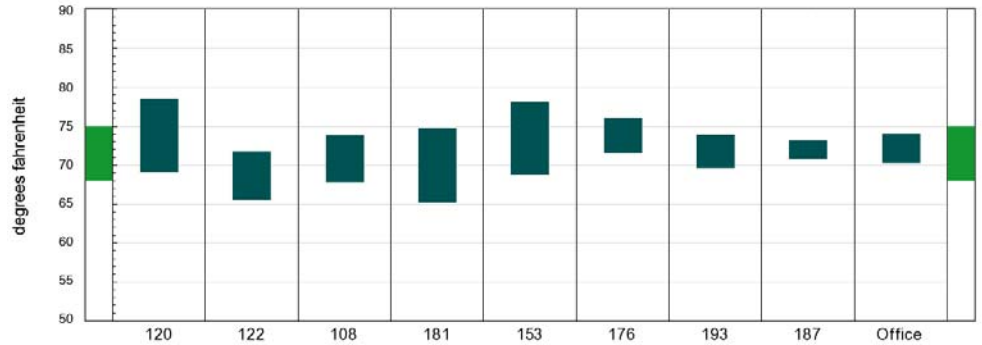
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building is controlled well with little opportunity for savings.

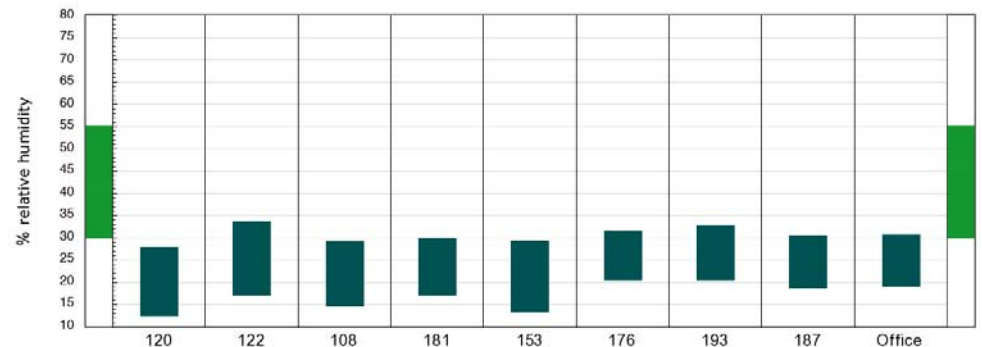
- 2 space(s) were too warm at times
- 2 space(s) were too cool at times
- 3 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 9 space(s) had low relative humidity at times

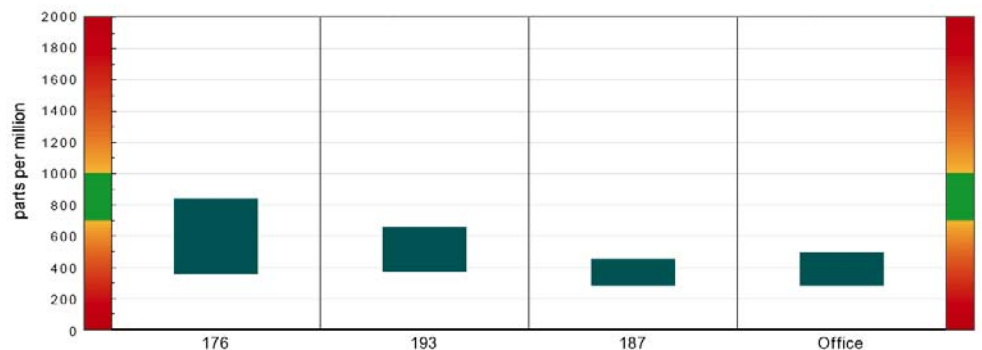


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 4 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: $\pm 1^\circ\text{F}$]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating Set Point is 68 / 68
	Occupied/Unoccupied Cooling Set Point is 73 / 73

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Further Comfort & Energy Recommendations

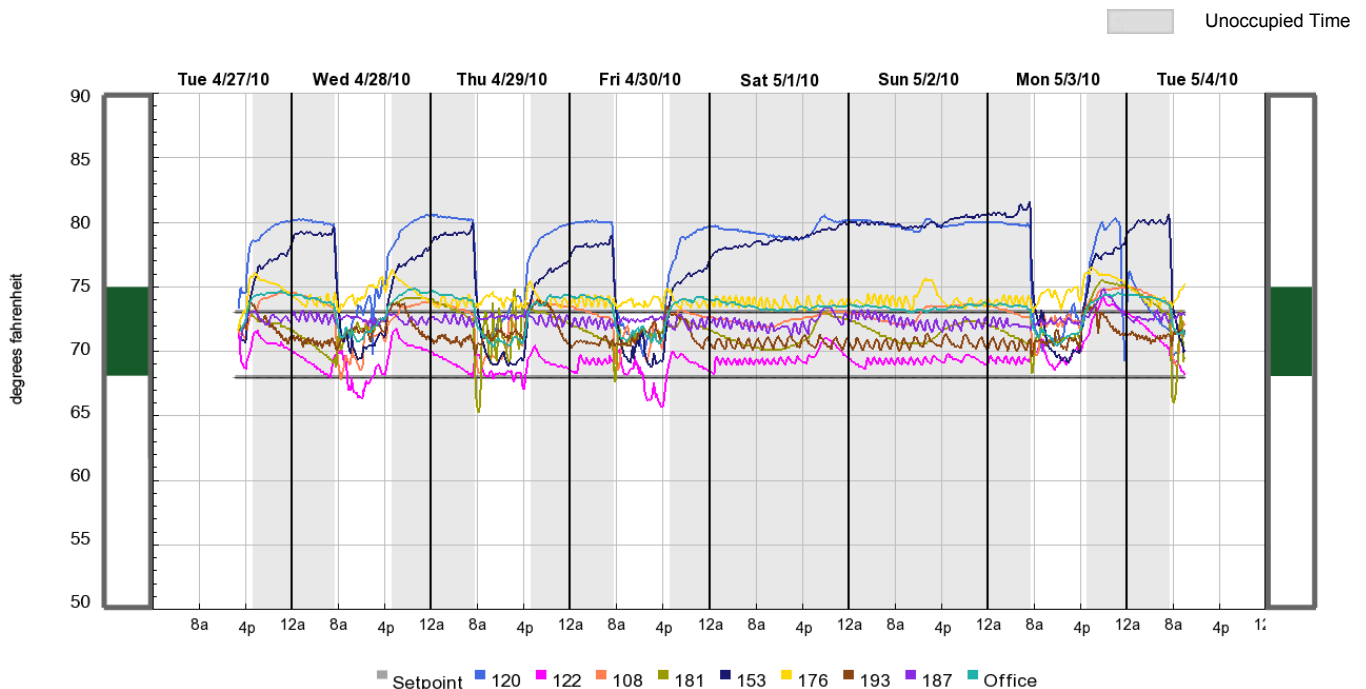
- Raise the cooling set point
- Increase the amount of heating set back possible during the unoccupied times
- Increase the amount of cooling set back possible during

Monitor Statistics

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%To Pt	SV†
120		70	79	73	11%	8
122		66	71	69	23%	4
108		68	74	71	8%	4
181		67	74	71	5%	9
153		69	75	71	3%	8
176		73	76	74	18%	3
193		70	74	72	0%	3
187		72	73	72	0%	1
Office		70	74	72	8%	3

These statistics are for occupied times only.

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

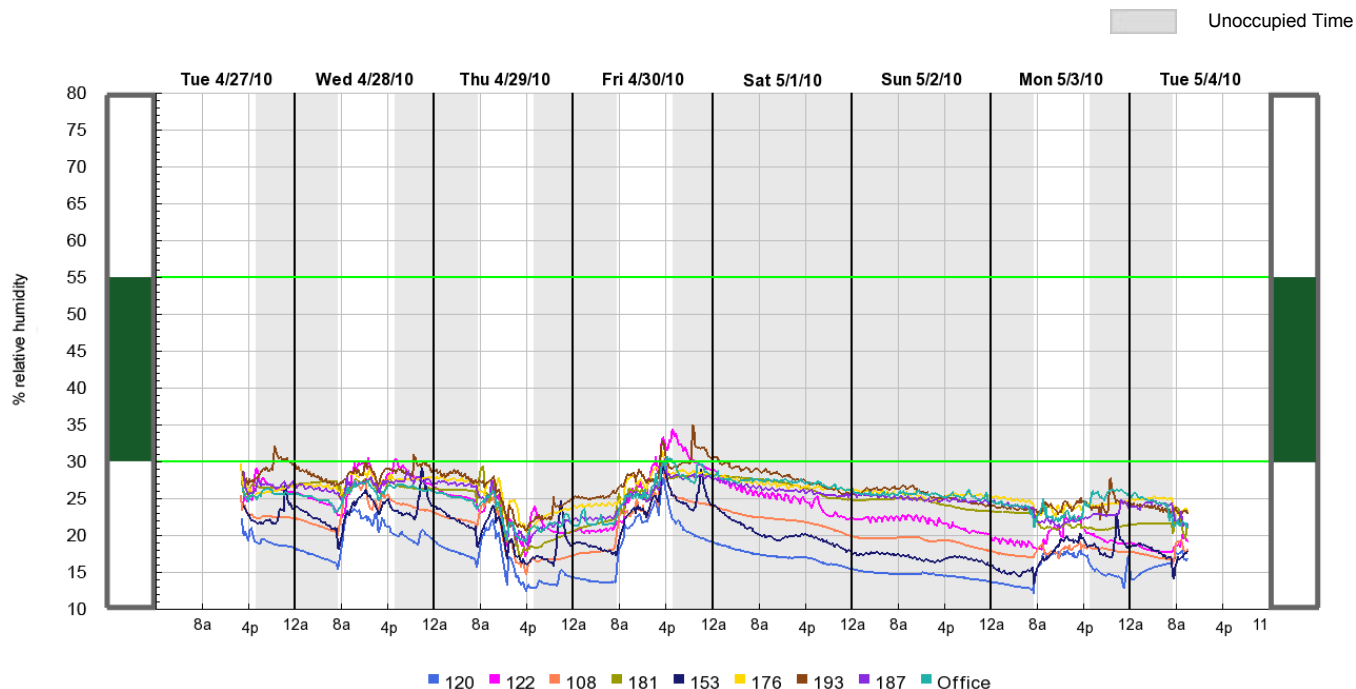
- Add humidification system
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	%
120		12	28	19	100%
122		17	34	24	95%
108		15	29	22	94%
181		17	30	24	99%
153		13	29	21	100%
176		20	31	26	98%
193		21	33	26	97%
187		19	30	24	99%
Office		19	31	24	90%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

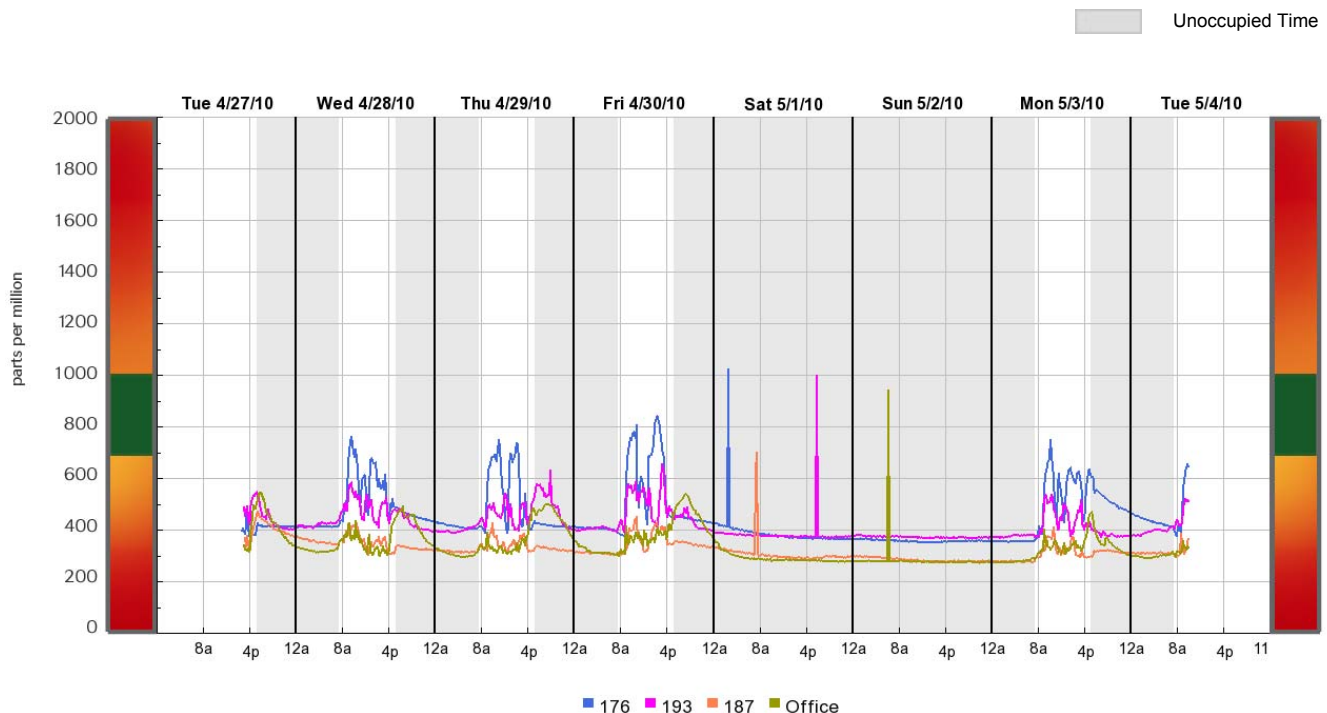
Comfort & Health Recommendations

- No recommendations at this time

Monitor	Alert Lvl	Min	Max	Avg	%
176		361	841	553	89%
193		372	658	474	100%
187		287	451	348	100%
Office		286	497	351	100%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 6.8 average occupied hours

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

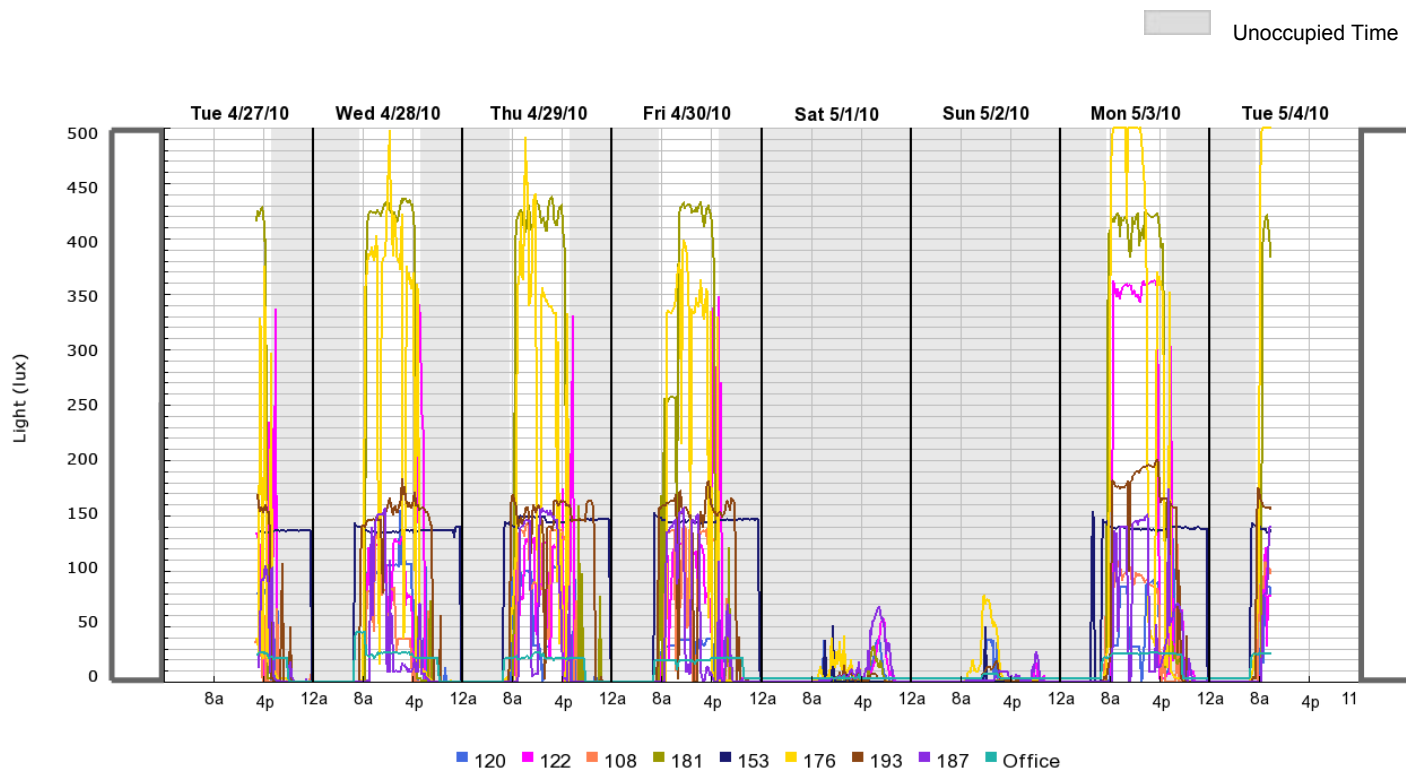
Energy Recommendations Based on Measurements

- Verify the light schedule & reduce unoccupied hours operation

Further Energy Recommendations

- Replace inefficient lamps with new high efficiency lamps
- Install occupancy sensors for individual zones
- Install daylight controls on the perimeter
- Reduce after hours use through coordination with the cleaning crews

Monitor	Alert Lvl	Measured On-Time
120		3.1 hrs
122		5.3 hrs
108		5.3 hrs
181		6.5 hrs
153		10. hrs
176		5.4 hrs
193		8.1 hrs
187		3.6 hrs
Office		12. hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99504

Outdoor Temperature

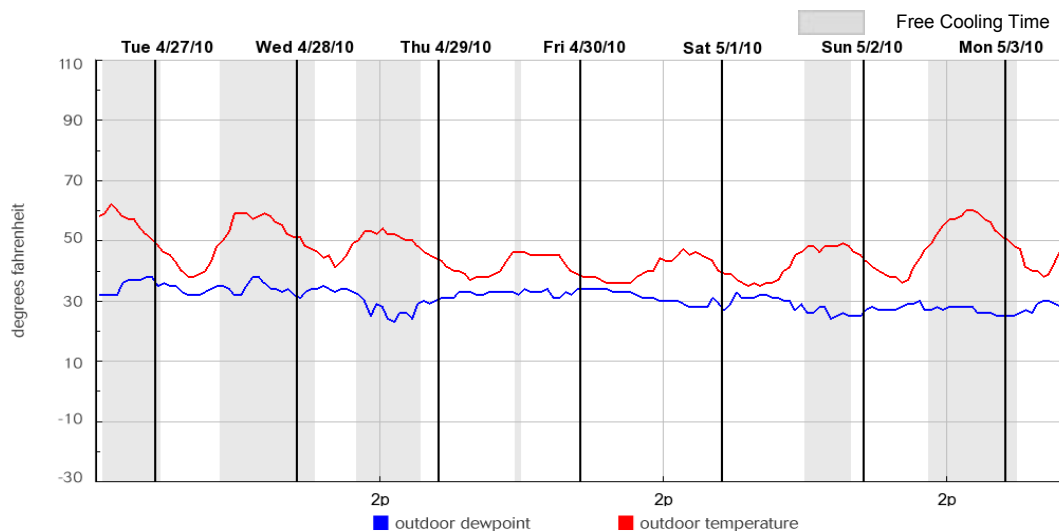
Test Period Avg: 4/27/10 – 5/4/10	Heating Degree Days	Cooling Degree Days
45 °F	20	0

Outdoor Temperature and Dew Point

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dew point during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	XXXXXXXXXX
Contact	XXXXXXXXXX
Address	XXXXXXXXXX
Building Information	
Building Background	Building Usage: K-12 School Building Size (sq ft): 53238 # of Stories: 1 Building Status: Existing Construction type: Cement Block LEED Cert.: None Heating System: Boiler Domestic Hot Water: Gas or Other Fuel Economizer: Yes Cooling System: None
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
120	20431
122	20420
108	20418
181	20416
153	20415
176	20300
193	20295
187	20293
Office	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	07:30	68	73	Yes
Tue				
Wed	17:00	68	73	No
Thu				
Fri				

Building Description

K-12 School			
Gross Floor Area	53238	Open Weekends	No
Number of PCs	185	Walk-in Refrigeration/Freezer Units	01
Presence of Cooking Facilities	Yes	% Air-Conditioned	0
% Heated	100	High School	No

Parking			
Enclosed Floor Area	0	Non-Enclosed Floor Area (w/roof)	0
Open Floor Area (w/o roof)	48000	Weekly Hours of Access	168

Building Controls Information

Current Controls	
Controls Type	Direct Digital
Schedule Type	Time Clock
Air Delivery Method	Variable Air Volume
Air-Flow Modulation	Variable Frequency Drive

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
1/15/09	62859	\$6,286		\$0
2/15/09	56619	\$5,662		\$0
3/15/09	58190	\$5,819		\$0
4/15/09	55763	\$5,576		\$0
5/15/09	46596	\$4,660		\$0
6/15/09	32345	\$3,235		\$0
7/15/09	30234	\$3,023		\$0
8/15/09	55674	\$5,567		\$0
9/15/09	59532	\$5,953		\$0
10/15/09	63240	\$6,324		\$0
11/15/09	63713	\$6,371		\$0
12/15/09	58330	\$5,833		\$0
TOTAL:	643095	\$64,309		\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
1/15/09 5749		\$5,117
2/15/09 4318		\$3,843
3/15/09 4026		\$3,583
4/15/09 3069		\$2,731
5/15/09 2364		\$2,103
6/15/09 1530		\$1,361
7/15/09 1531		\$1,362
8/15/09 2640		\$2,349
9/15/09 2858		\$2,543
10/15/09 3491		\$3,106
11/15/09 4523		\$4,025
12/15/09 5418		\$4,822
TOTAL:	41517	\$36,945

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1010

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

CHUGACH
POWERING ALASKA'S FUTURE

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smart building solutions



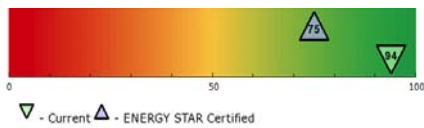
positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

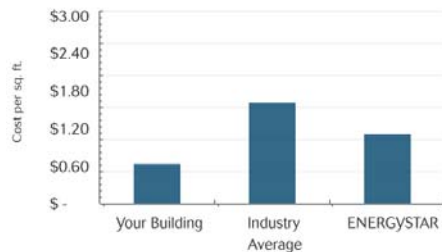


Your building's ENERGY STAR® Energy Performance Rating is **94**. Its Energy Use Index is **32 kbtu per sq. ft.**

Your building's ENERGY STAR score of 94 ranks you above average versus your peers, and is a good candidate to become certified through the ENERGY STAR program if it is not already.



Cost

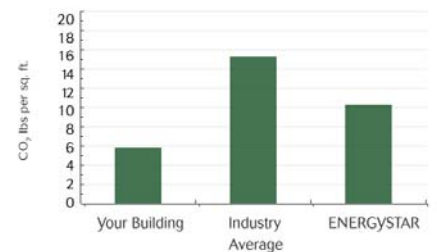


Your building's annual cost per square foot is **\$0.61 per sq. ft.** overall.

Your building is already performing at a high efficiency level and has a small amount of cost per square foot savings potential still available.



Carbon Footprint



Your building's annual carbon footprint is **59 metric tons of CO₂** or **5.78 lbs per sq. ft.**

Your building already has a low carbon footprint, but can be further reduced by moving to a net zero energy strategy.

Your building is already performing at a high level and is a good candidate to become certified through the ENERGY STAR program if it is not already.

Key Findings

- Your building has some control issues
- Your building is over-ventilated



How Does Your Building Use Electricity Today?

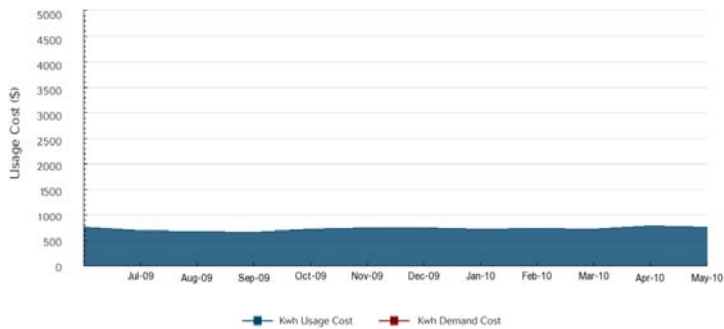
This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

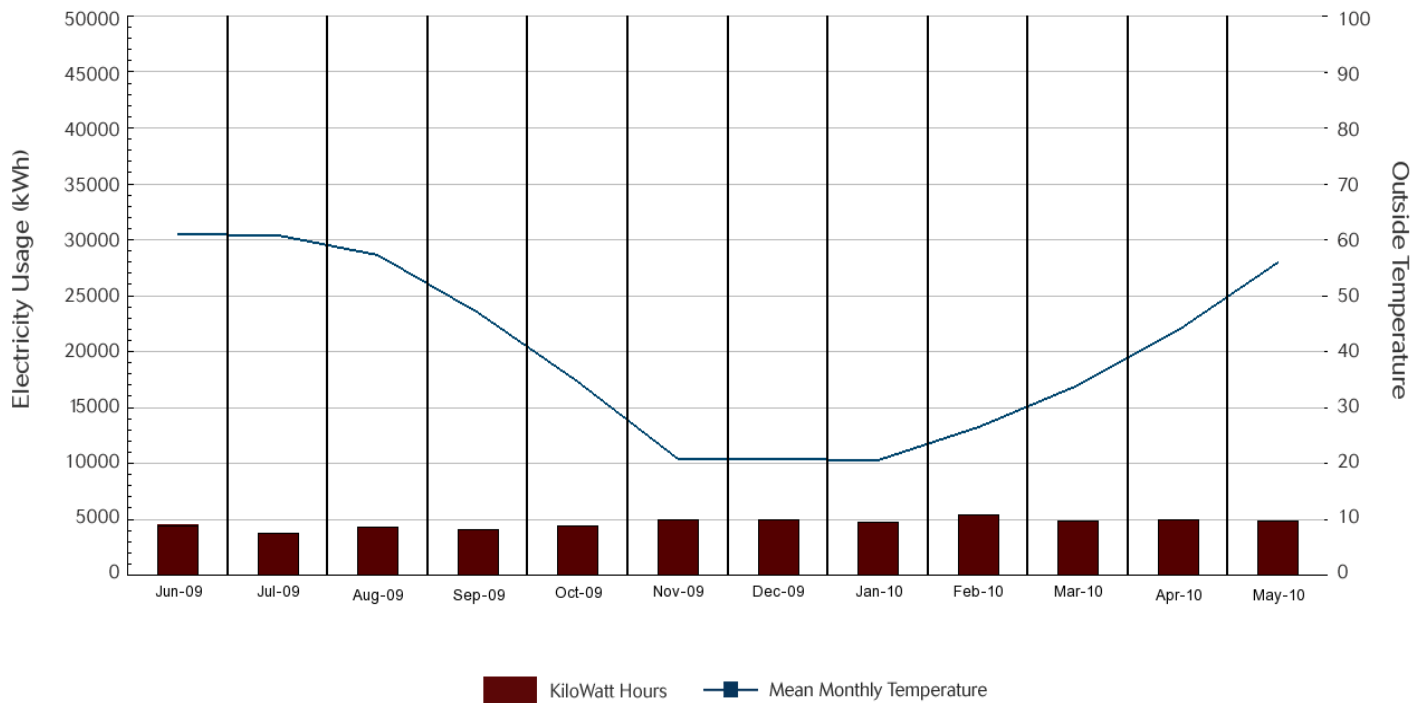
Electricity Consumption

- Electricity comprises 63.5% of your total utility cost, and 26.3% of your total utility consumption.
- Your Total Spend on electricity is \$8,738, so when considering savings opportunities, remember you can only save some percentage of that total.

Monthly Electricity Costs



Electricity Consumption And Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

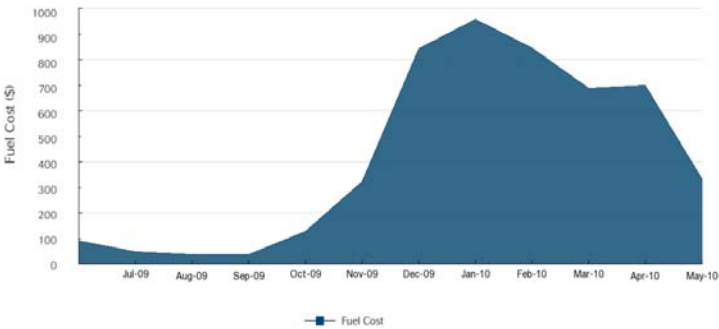


Monthly Fuel Costs

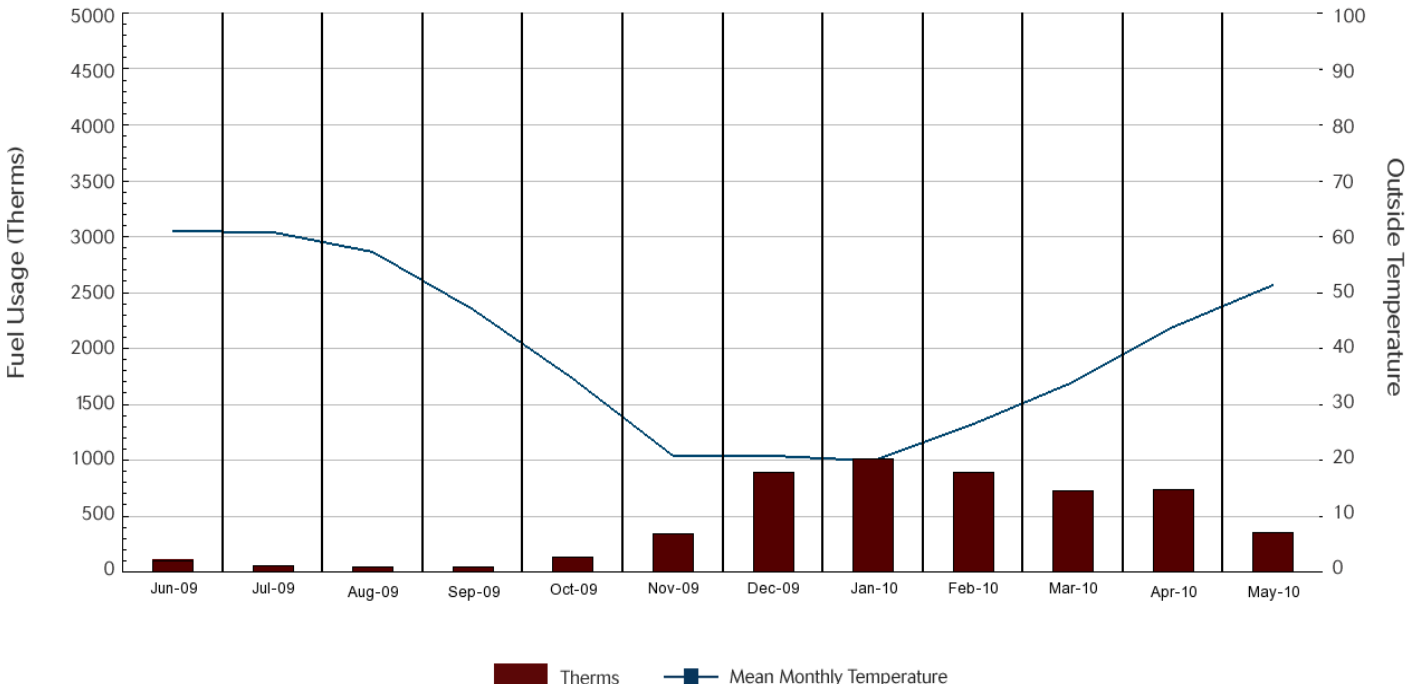
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 36.5% of your total utility cost, and 73.7% of your total utility consumption.
- Your Total Spend on Fuel is \$5,031, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption And Outside Air Temperature



Building Comfort and Ventilation Analysis

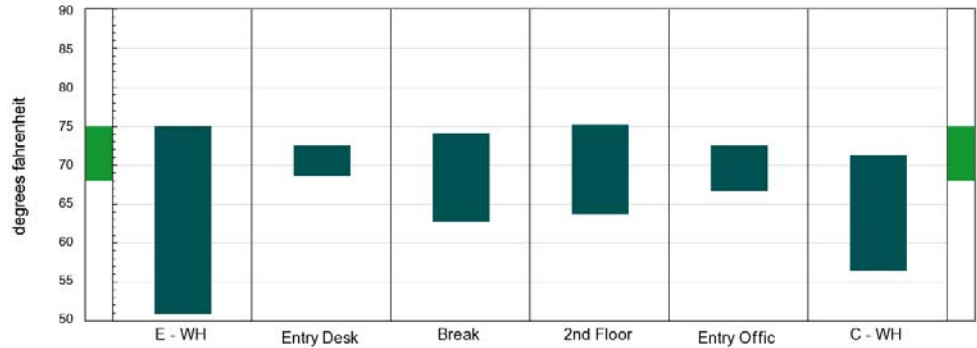
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building has some control issues in specific sections.

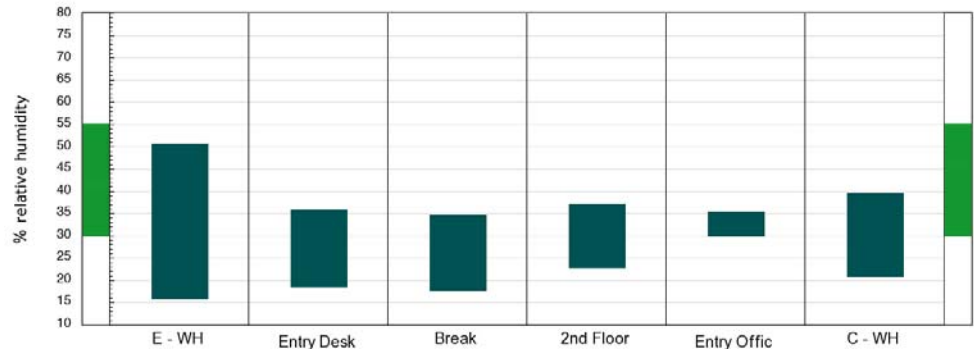
- 2 space(s) were too warm at times
- 3 space(s) were too cool at times
- 1 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 6 space(s) had low relative humidity at times

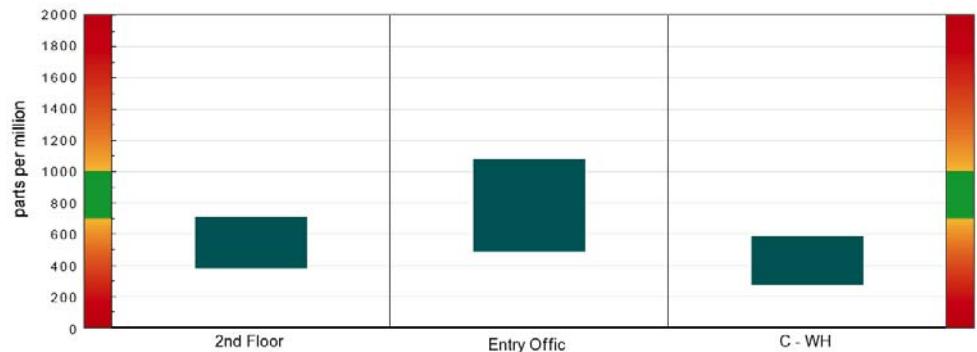


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 1 space(s) had elevated carbon dioxide levels
- 3 space(s) had low carbon dioxide levels





The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating setpoint and raising the cooling setpoint can save significant energy while maintaining a comfortable and productive working environment.

Alert Lvl	
	Occupied/Unoccupied Heating Setpoint is 60 / 60
	Occupied/Unoccupied Cooling Setpoint is 85 / 85

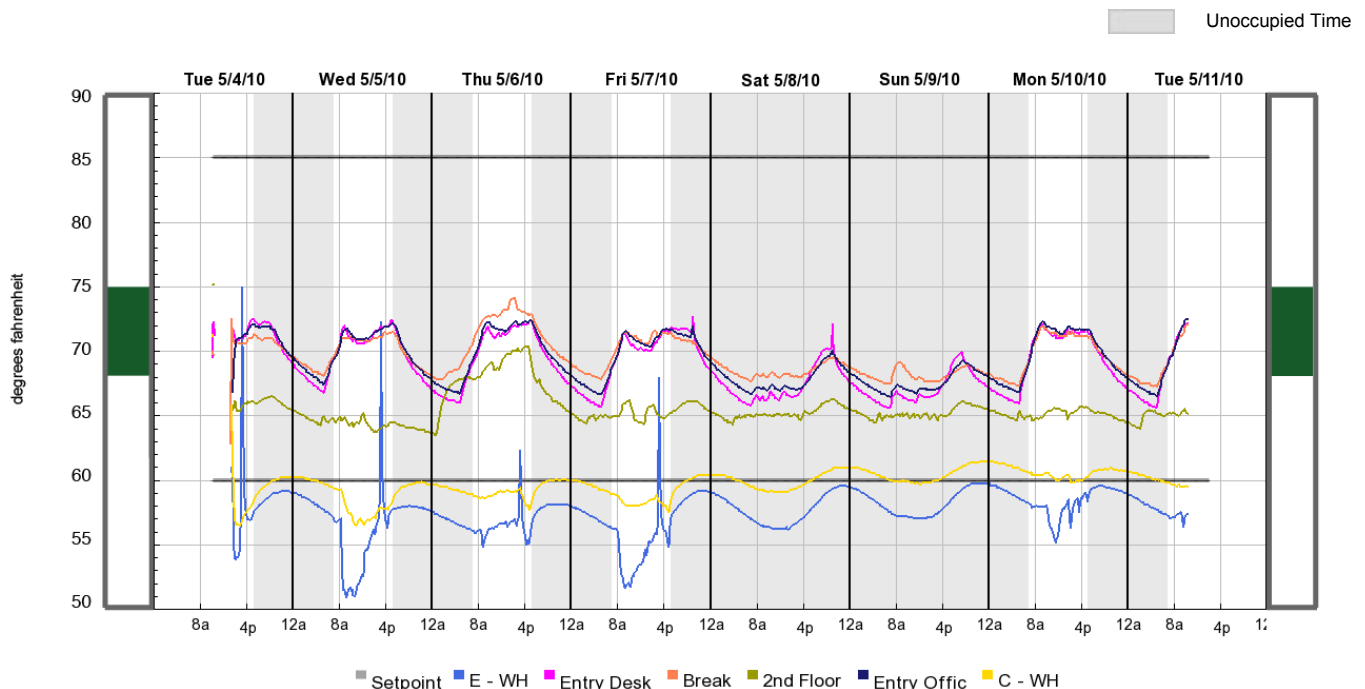
Our findings indicate there are several ways to save money by operating your building differently:

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

●

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%ToR*	SV†
E - WH		51	62	56	93%	20
Entry Desk		69	72	71	1%	3
Break		70	74	71	5%	3
2nd Floor		64	70	66	82%	2
Entry Office		69	72	71	3%	3
C - WH		56	60	59	99%	3

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

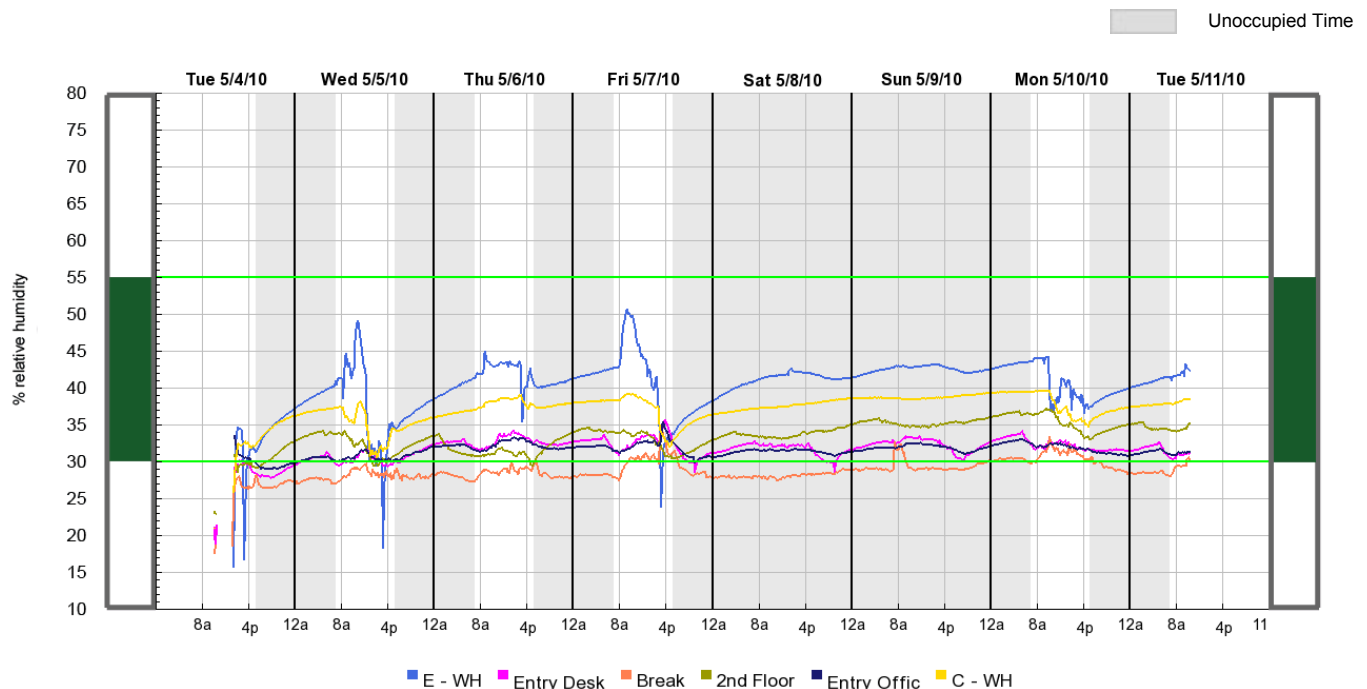
- Add humidification system
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
E - WH		16	51	40	10%
Entry Desk		19	36	32	22%
Break		18	35	29	66%
2nd Floor		23	37	33	17%
Entry Office		30	35	32	6%
C - WH		21	40	36	5%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

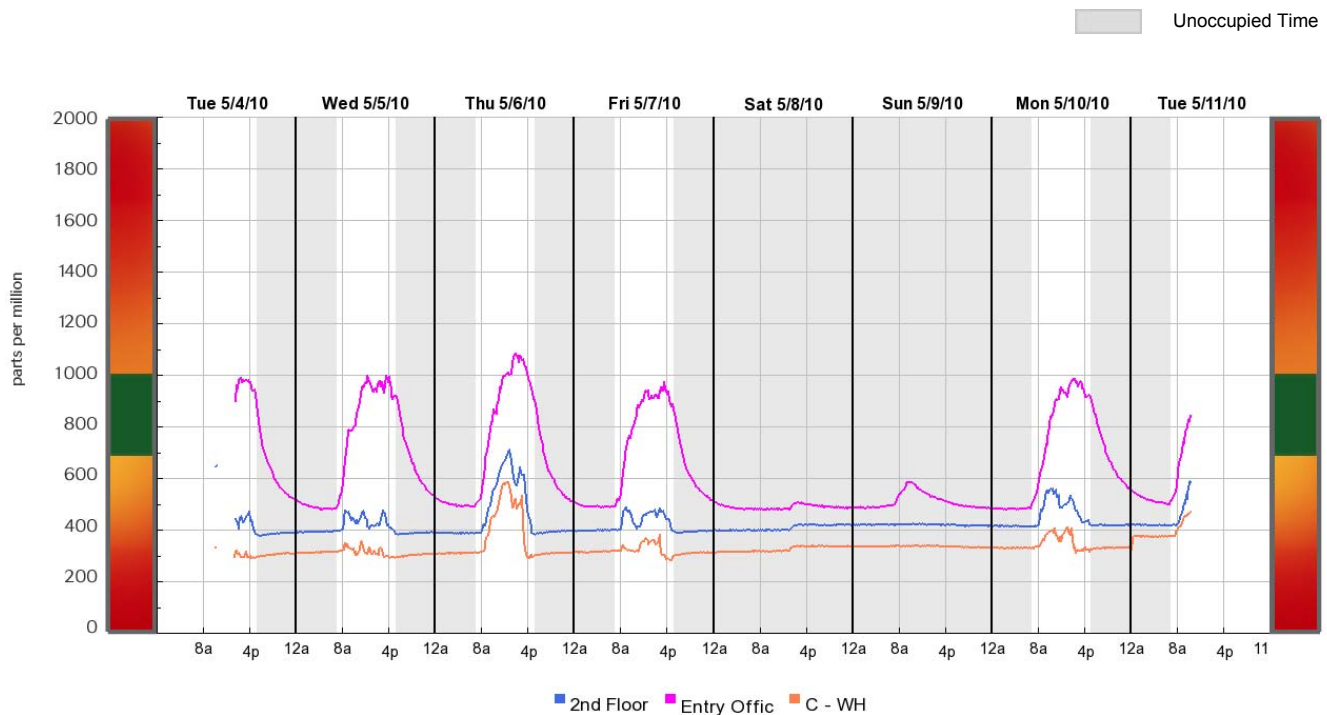
Comfort & Health Recommendations

- Increase the amount of ventilation into the building.

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
2nd Floor		383	709	473	99%
Entry Office		487	1082	847	32%
C - WH		281	585	358	100%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 7.1 average occupied hours

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

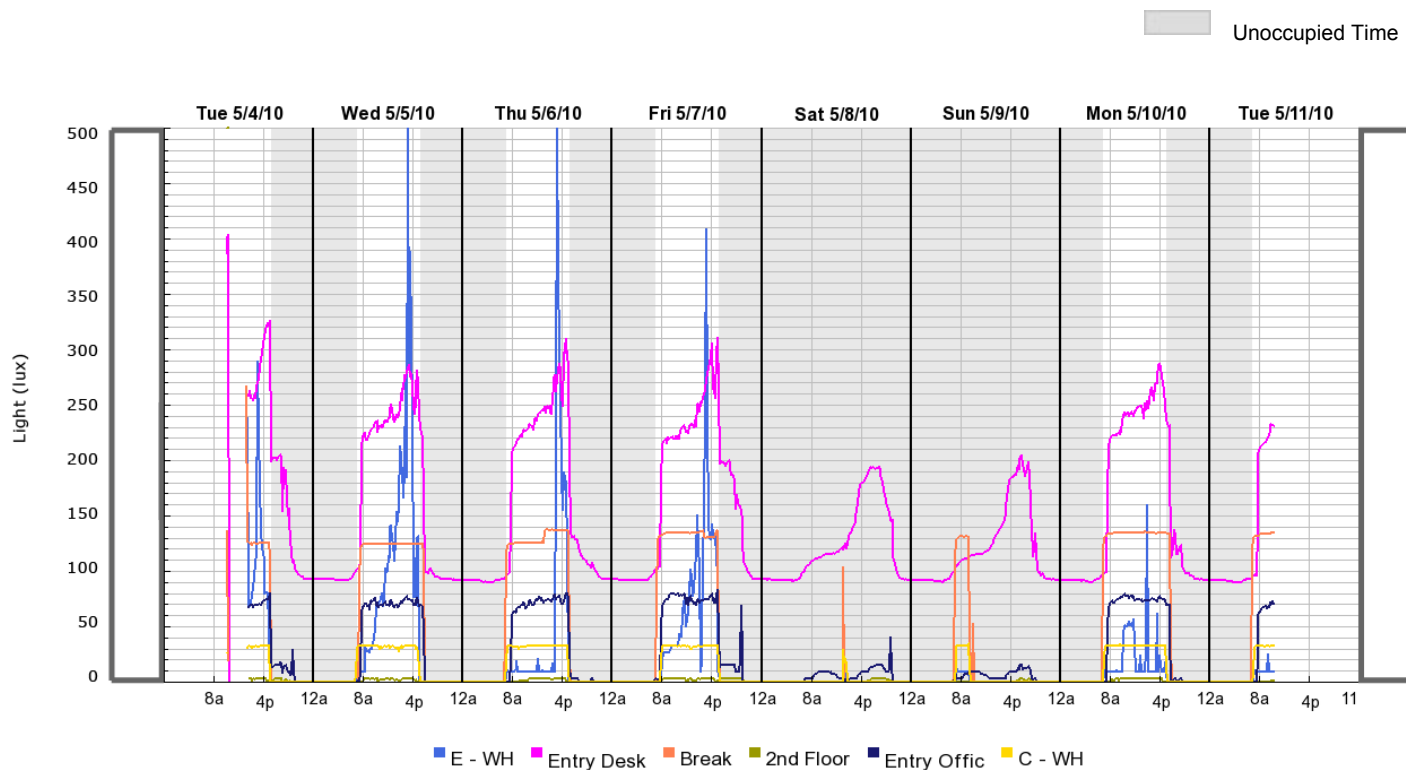
Energy Recommendations Based on Measurements

- Verify the light schedule & reduce unoccupied hours operation

Further Energy Recommendations

- Replace inefficient lamps with new high efficiency lamps
- Install occupancy sensors for individual zones
- Install daylight controls on the perimeter
- Reduce after hours use through coordination with the cleaning crews

Monitor	Alert Lvl	Measured On-Time
E - WH		2.1 hrs
Entry Desk		22. hrs
Break		7.2 hrs
2nd Floor		0.9 hrs
Entry Office		5.2 hrs
C - WH		7.8 hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99518

Outdoor Temperature

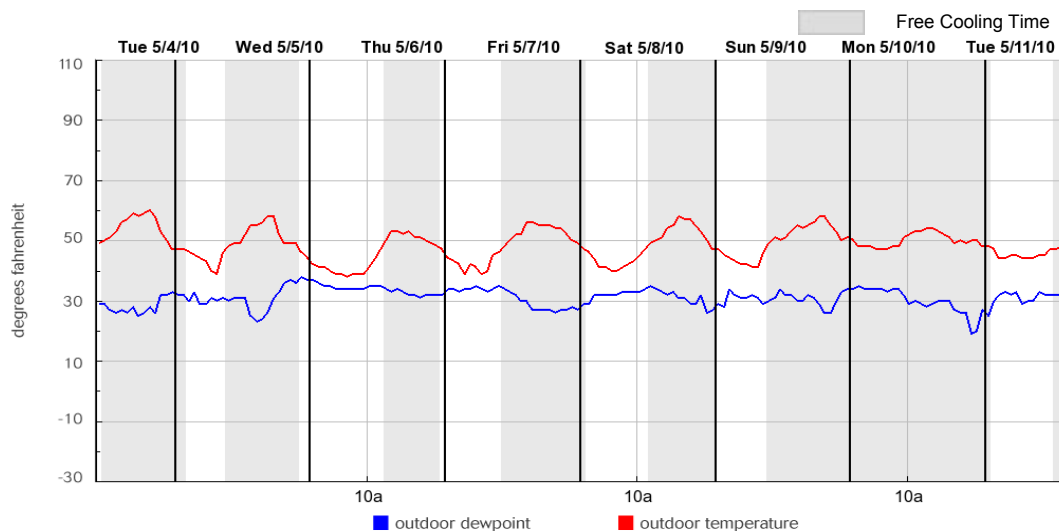
Test Period Avg: 5/4/10 – 5/11/10	Heating Degree Days	Cooling Degree Days
49 °F	16	0

Outdoor Temperature and Dewpoint

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dewpoint during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	
Contact	
Address	
Building Information	
Building Background	Building Usage: Office Building Size (sq ft): 22500 # of Stories: 2 Building Status: Existing Construction type: Wood Frame LEED Cert.: None Heating System: Boiler Domestic Hot Water: Gas or Other Fuel Economizer: No Cooling System: None
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
E - WH	20418
Entry Desk	20416
Break	20415
2nd Floor	20300
Entry Office	20289
C - WH	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	07:00	60	85	Yes
Tue				
Wed	17:00	60	85	No
Thu				
Fri				

Building Description

Office			
Gross Floor Area	5000	Weekly Operating Hours	50
Number of Workers on Main Shift	5	Number of PCs	7
Office Air-Conditioned	Not Air Conditioned	Office Heated	50% or more

Warehouse (Unrefrigerated)			
Gross Floor Area	17500	Number of Workers on Main Shift	8
Weekly Operating Hours	50	% Air-Conditioned	0
% Heated	100	Walk-in Refrigeration/Freezer Units	0

Parking			
Enclosed Floor Area	0	Non-Enclosed Floor Area (w/roof)	0
Open Floor Area (w/o roof)	5000	Weekly Hours of Access	168

Building Controls Information

Current Controls	
Controls Type	Thermostat
Schedule Type	On/Off (Auto fan)
Air Delivery Method	Constant Volume (CV)
Air-Flow Modulation	N/A

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
6/15/09	4433	\$765	20	\$0
7/15/09	3769	\$691	25	\$0
8/15/09	4237	\$674	20	\$0
9/15/09	4094	\$668	21	\$0
10/15/09	4349	\$723	25	\$0
11/15/09	4941	\$750	23	\$0
12/15/09	4936	\$752	23	\$0
1/15/10	4743	\$715	25	\$0
2/15/10	5359	\$735	23	\$0
3/15/10	4846	\$719	25	\$0
4/15/10	4893	\$782	28	\$0
5/15/10	4831	\$764	27	\$0
TOTAL:	55431	\$8,738	285	\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
6/15/09 96		\$91
7/15/09 50		\$47
8/15/09 40		\$38
9/15/09 40		\$38
10/15/09 134		\$127
11/15/09 341		\$323
12/15/09 887		\$842
1/2/10 1008		\$957
2/15/10 891		\$846
3/15/10 726		\$689
4/15/10 736		\$699
5/1/10 352		\$334
TOTAL:	5301	\$5,031

Commercial Energy Savings Assessment



Watt Buster



ASSESSMENT SITE

1011

ASSESSMENT PERFORMED BY

Control Contractors – Anchorage

5660 B Street

Anchorage, Alaska 99518



smart building solutions

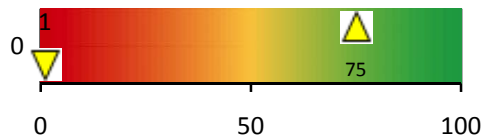


posi⊕iveENERGY

EXECUTIVE SUMMARY



Energy Use

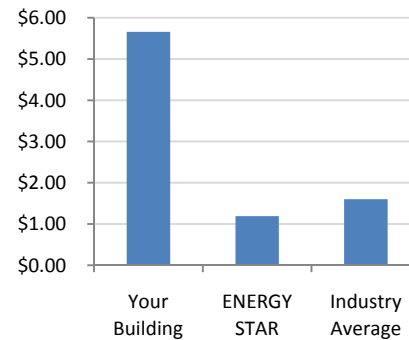


Your building's ENERGY STAR® Energy Performance Rating is 1. Its Energy Use Index is 224 kbtu per sq. ft.

Your building's ENERGY STAR score of 1 ranks you below average versus your peers, and falls well below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

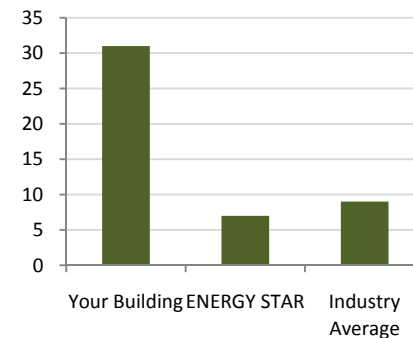


Your building's annual cost per square foot is \$5.66 per sq. ft. overall.

Your building's cost per square foot is \$4.06 more than the industry average. Your annual cost can be reduced by \$81,214 (71.8%) or \$406,070 over 5 years by achieving an ENERGY STAR score of 50.



Carbon Footprint



Your building's annual carbon footprint is 613 metric tons of CO2 or 31lbs per sq. ft.

Your building's carbon emissions are 254.3% more than the industry average, and can be reduced by 22 lbs per sq. ft. by achieving an ENERGY STAR score of 50.

You could save up to \$81,214 annually or \$406,070 over 5 years by raising your ENERGY STAR score to the level of 50

While a detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR database.

How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

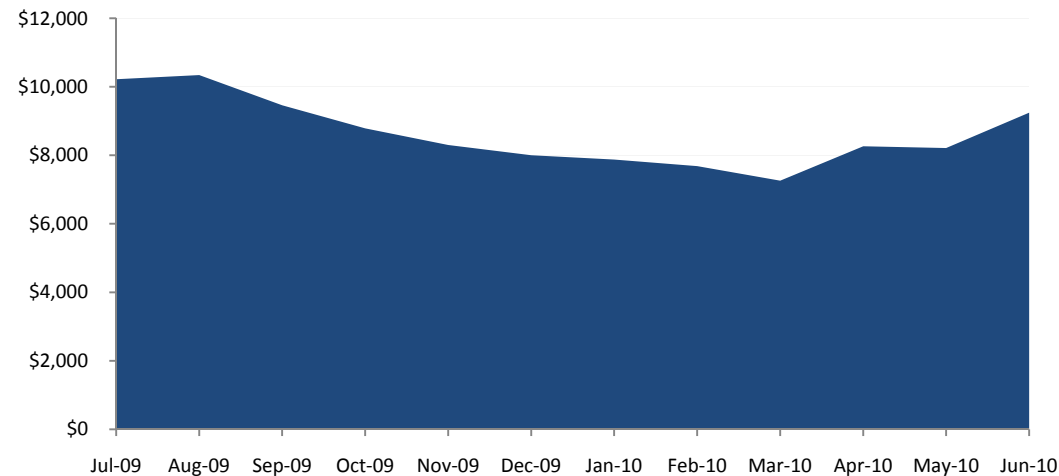


MONTHLY ELECTRICTY COST

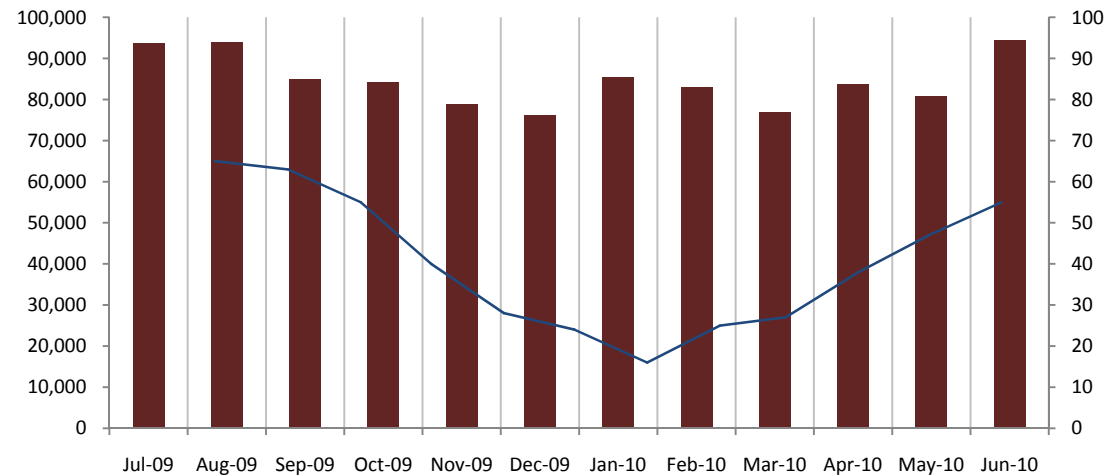
Utility Bill Analysis

Electricity Consumption

- Electricity comprises 66.0% of your total utility cost, and 35.0% of your total utility consumption.
- Your Total Spend on electricity is \$103,678, so when considering savings opportunities, remember you can only save some percentage of that total.



ELECTRICITY CONSUMPTION AND OUTSIDE AIRTEMPERATURE



How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read



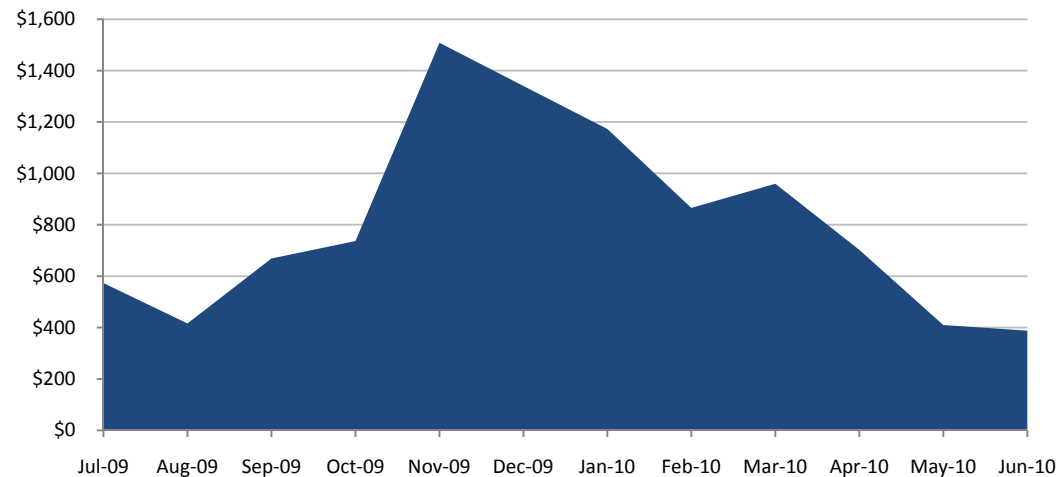
MONTHLY FUEL COST

Utility Bill Analysis

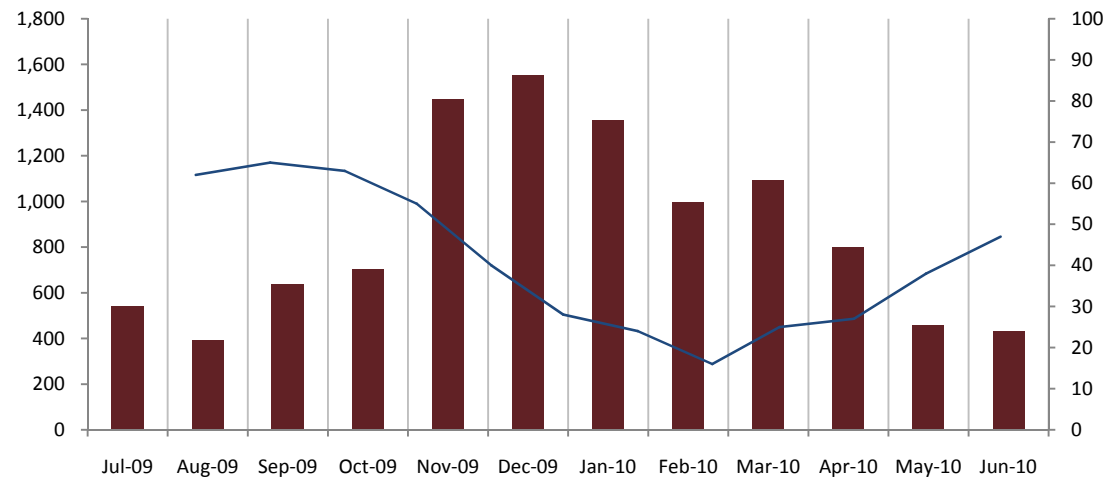
Fuel Consumption

- Fuel comprises 34.0% of your total utility cost, and 65.0% of your total utility consumption.

Your Total Spend on Fuel is \$9,745, so when considering savings opportunities, remember you can only save some percentage



FUEL CONSUMPTION AND OUTSIDE AIRTEMPERATURE

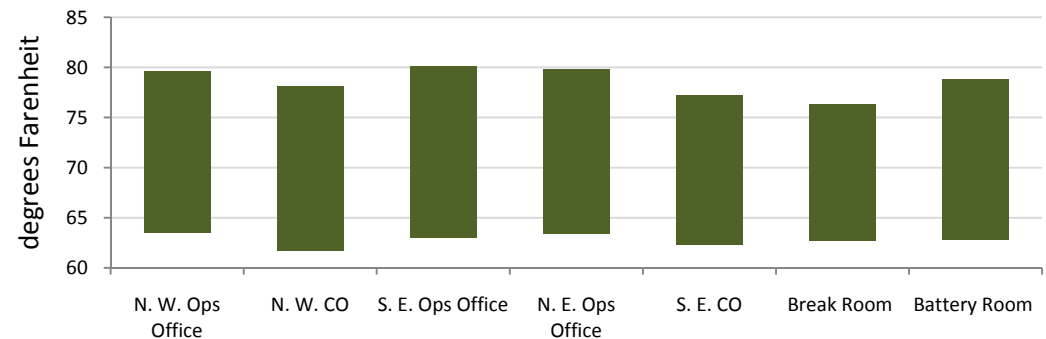


Building Comfort and Ventilation Analysis

This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

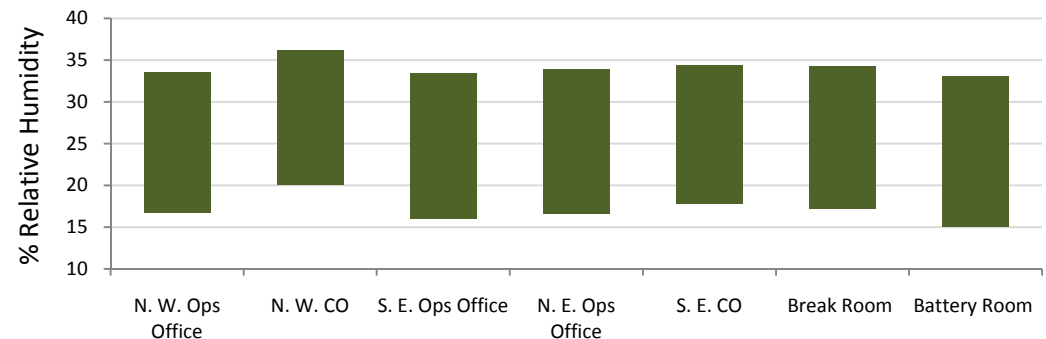
TEMPERATURE FINDINGS

- 3 space(s) were too warm at times
- space(s) were too cool at times
- 4 space(s) had excessive temperature variation



RELATIVE HUMIDITY

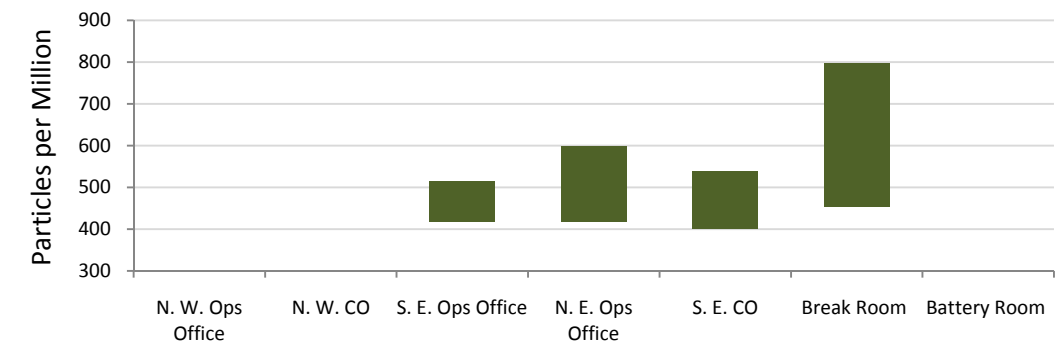
- 4 space(s) had high relative humidity at times
- 2 space(s) had low relative humidity



CARBON DIOXIDE

Your building is over ventilated and can save energy by reducing the overall amount of outside air ventilation

- 1 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating setpoint and raising the cooling setpoint can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

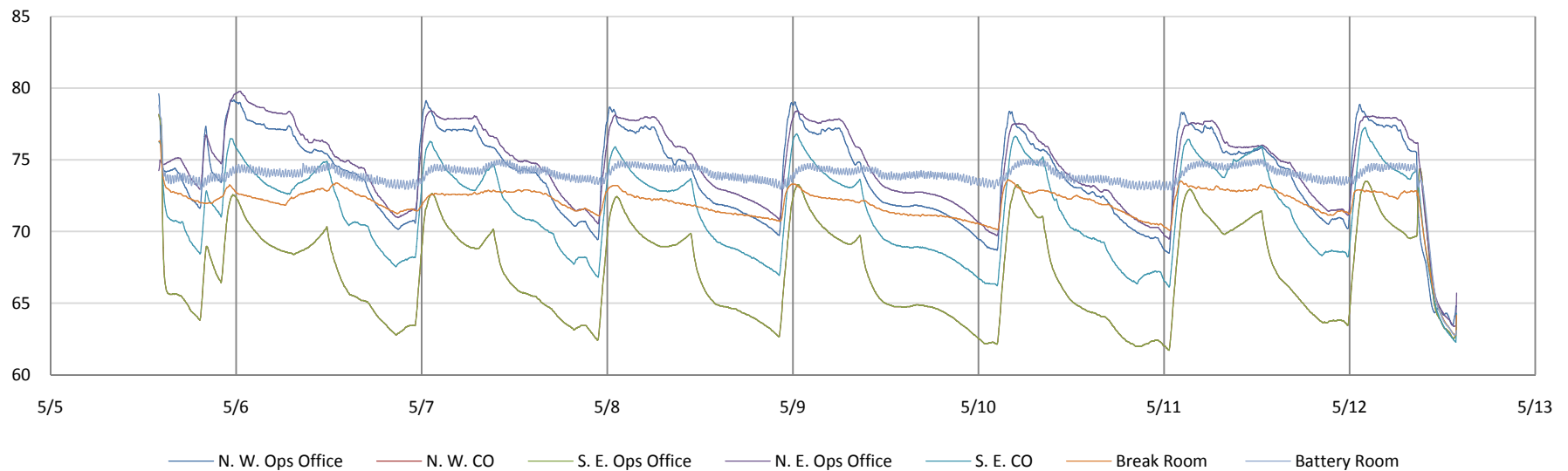
ENERGY SAVING OPPORTUNITIES

Our findings indicate there are several ways to save money by operating your building differently.

Energy Recommendations based on Measurements

- Calibrate thermostats to reduce temperature variation
- Verify the control system is shutting the heat and cooling equipment off
- Move thermostats to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

TIME – TEMPERATURE



Relative-Humidity

Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

ANALYSIS AND RECOMMENDATIONS

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

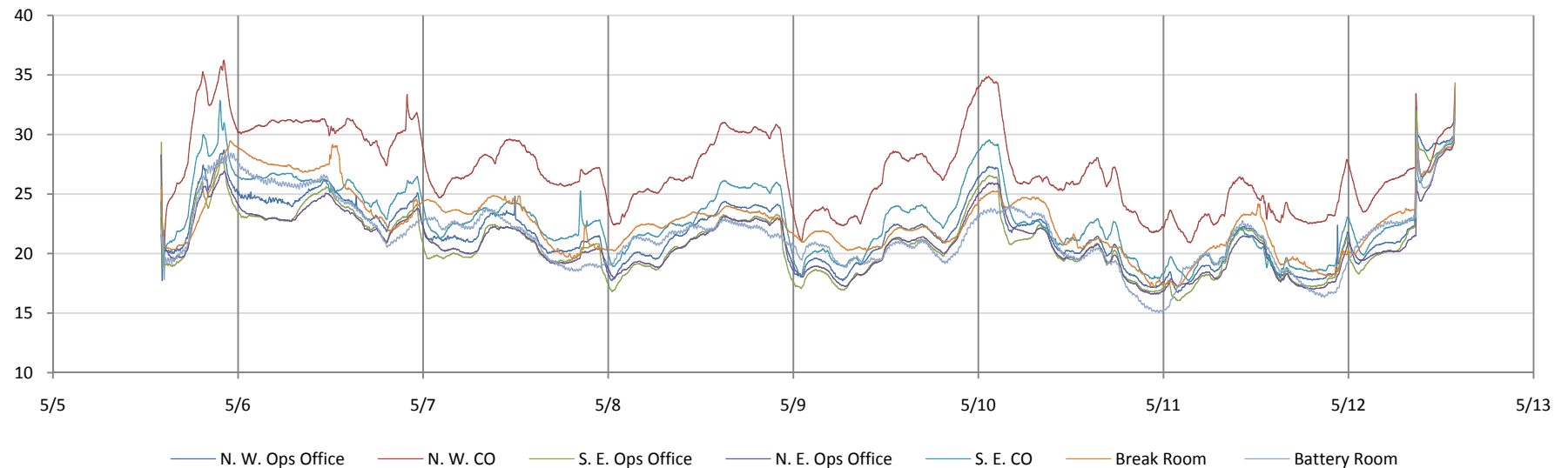
Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

- Add humidification system
- Improve ventilation control

TIME-RELATIVE HUMIDITY



Carbon Dioxide

Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

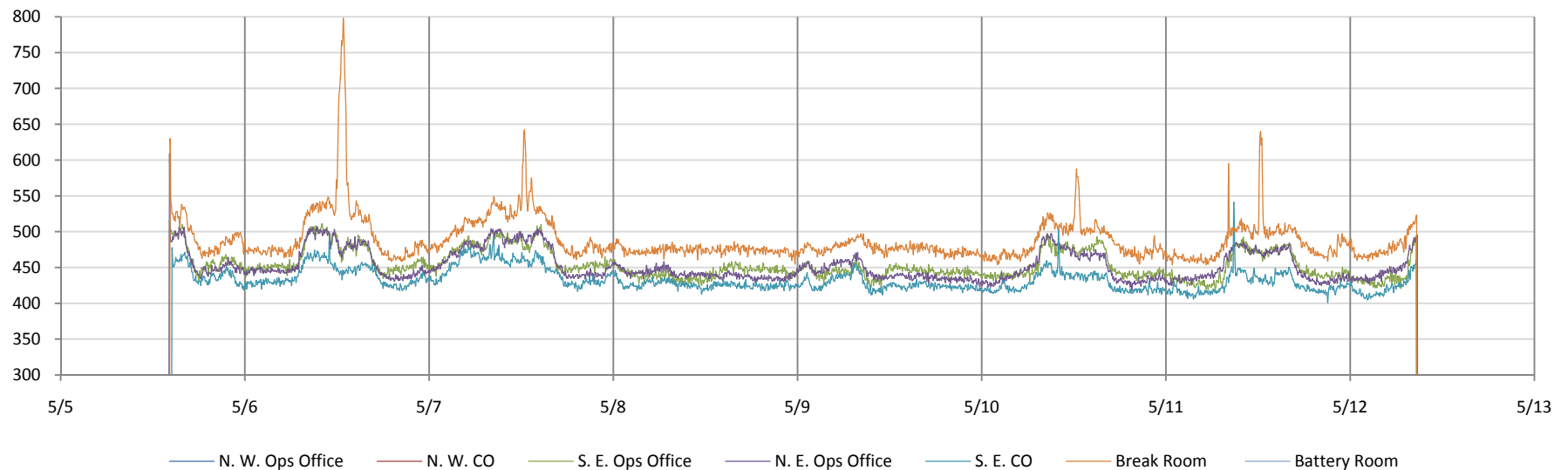
Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building different:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

TIME-CARBON DIOXIDE



Lighting

Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

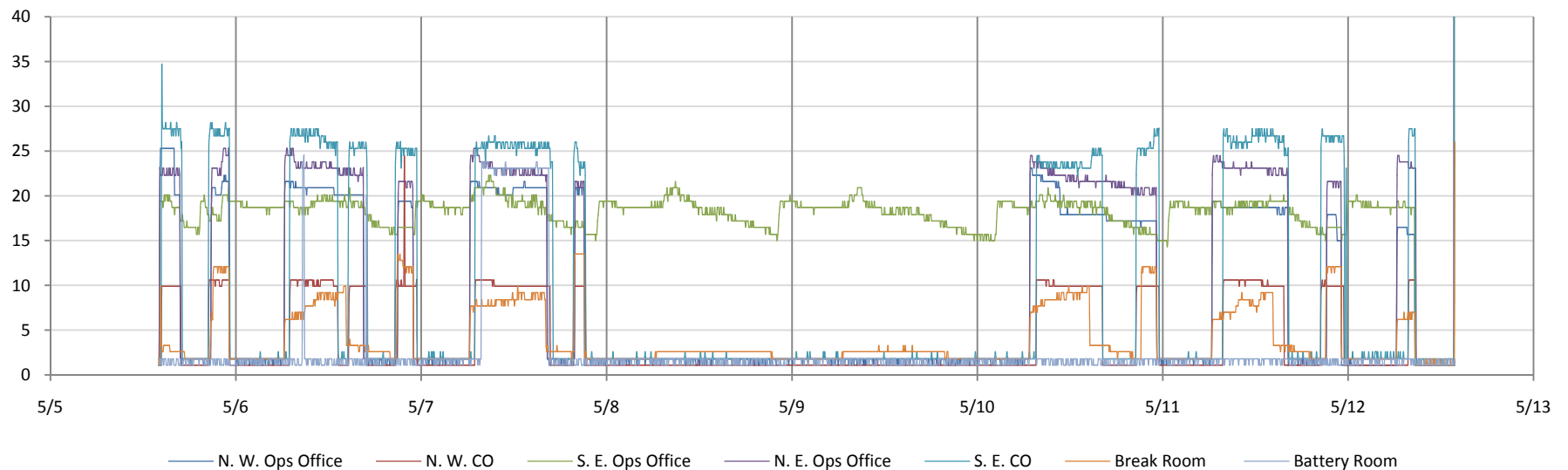
Sources: BOMA, ENERGY STAR, DOE

Energy Saving Opportunities

Energy Recommendations Based on Measurements

- Verify proper lighting levels in each area of the building

TIME LIGHTING



Building and Monitor Placement Information

General Information

Contact Information	
Building Name	
Contact	
Address	1014
Building Information	
Building Background	Building Usage: Office Building Size (sqft): 20,000 # of Stories: Building Status: Existing Construction type: Cement Block LEED Cert.: None Heating System: Boiler Domestic Hot Water: Electric Resistance Economizer: Yes Cooling System: Chiller - Cooling Tower
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
35	N. W. Ops Office
36	N. W. CO
37	S. E. Ops Office
38	N. E. Ops Office
39	
40	
41	S. E. CO
42 Break	Room
43 Batter	y Room
44	



STATEMENT OF ENERGY PERFORMANCE 1011

Building ID: 2350577

For 12-month Period Ending: May 31, 2010¹

Date SEP becomes ineligible: N/A

Date SEP Generated: October 05, 2010

Facility

1011
1011
Anchorage , AK 99518

Facility Owner

N/A

Primary Contact for this Facility

N/A

Year Built: 1980**Gross Floor Area (ft²):** 17,770**Energy Performance Rating² (1-100)** 1**Site Energy Use Summary³**

Electricity - Grid Purchase(kBtu)	3,375,026
Natural Gas (kBtu) ⁴	1,112,216
Total Energy (kBtu)	4,487,242

Energy Intensity⁵

Site (kBtu/ft ² /yr)	253
Source (kBtu/ft ² /yr)	700

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	613
---	-----

Electric Distribution Utility

Chugach Electric Assn Inc

National Average Comparison

National Average Site EUI	63
National Average Source EUI	175
% Difference from National Average Source EUI	300%
Building Type	Office

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) or a Registered Architect (RA) 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 or RA 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	1011	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	Office	Is this an accurate description of the space in question?		☐
Location	1011, Anchorage , AK 99518	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		☐
Office (Office)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	17,770 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.		☐
Weekly operating hours	45 Hours	Is this the total number of hours per week that the Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		☐
Workers on Main Shift	15	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100. The normal worker density ranges between 0.3 and 5.3 workers per 1000 square feet (92.8 square meters)		☐
Number of PCs	15	Is this the number of personal computers in the Office?		☐
Percent Cooled	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐
Parking (Parking)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	10,000 Sq. Ft.	Is this the total square footage of the entire parking area (enclosed + nonenclosed + open floor area)?		☐

Enclosed Floor Area	0 Sq. Ft.	Is this the total square footage of the enclosed garage space? An enclosed garage is defined as having both sides and a roof.	☐
Non-Enclosed Floor Area (w/roof)	0 Sq. Ft.	Is this the total square footage of the nonenclosed garage space? This is typically defined as the portion of the garage above ground (contains no sides but is under a roof).	☐
Open Floor Area (w/o roof)	10,000 Sq. Ft.	Is this the total square footage of the nonenclosed parking area without a roof? This is typically defined as open parking lots or the very top level of an above ground parking garage.	☐
Weekly Hours of Access	168 Hours	Is this the total number of hours per week when it is possible for a vehicle to enter or exit?	☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Chugach Electric Assn Inc

Fuel Type: Electricity		
Meter: ACSElectr (kWh (thousand Watt-hours)) Space(s): Entire Facility Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
04/06/2010	05/06/2010	83,680.00
03/05/2010	04/06/2010	76,880.00
02/04/2010	03/05/2010	82,960.00
01/04/2010	02/04/2010	85,440.00
12/03/2009	01/04/2010	76,240.00
11/04/2009	12/03/2009	78,880.00
10/05/2009	11/04/2009	84,240.00
09/03/2009	10/05/2009	84,880.00
08/04/2009	09/03/2009	94,000.00
07/06/2009	08/04/2009	93,840.00
06/04/2009	07/06/2009	74,320.00
ACSElectr Consumption (kWh (thousand Watt-hours))		915,360.00
ACSElectr Consumption (kBtu (thousand Btu))		3,123,208.32
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		3,123,208.32
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☐
Fuel Type: Natural Gas		
Meter: 5536 (ccf (hundred cubic feet)) Space(s): Entire Facility		
Start Date	End Date	Energy Use (ccf (hundred cubic feet))
04/30/2010	05/29/2010	459.00
03/30/2010	04/29/2010	797.00
03/01/2010	03/29/2010	1,093.00
01/30/2010	02/28/2010	997.00
12/30/2009	01/29/2010	1,354.00
11/30/2009	12/29/2009	1,551.00
10/30/2009	11/29/2009	1,449.00
09/30/2009	10/29/2009	702.00
08/30/2009	09/29/2009	636.00
07/30/2009	08/29/2009	391.00
06/30/2009	07/29/2009	543.00

5536 Consumption (ccf (hundred cubic feet))	9,972.00
5536 Consumption (kBtu (thousand Btu))	1,026,118.80
Total Natural Gas Consumption (kBtu (thousand Btu))	1,026,118.80
Is this the total Natural Gas consumption at this building including all Natural Gas 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.	☐
--	--------------------------

On-Site Solar and Wind Energy

Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.	☐
---	--------------------------

Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA 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

1011
1011
Anchorage , AK 99518

Facility Owner

N/A

Primary Contact for this Facility

N/A

General Information

1011	
Gross Floor Area Excluding Parking: (ft ²)	17,770
Year Built	1980
For 12-month Evaluation Period Ending Date:	May 31, 2010

Facility Space Use Summary

Office		Parking	
Space Type	Office	Space Type	Parking
Gross Floor Area(ft ²)	17,770	Gross Floor Area(ft ²)	10,000
Weekly operating hours	45	Enclosed Floor Area	0
Workers on Main Shift	15	Non-Enclosed Floor Area (w/roof)	0
Number of PCs	15	Open Floor Area (w/o roof)	10,000
Percent Cooled	50% or more	Weekly Hours of Access	168
Percent Heated	50% or more		

Energy Performance Comparison

Performance Metrics	Evaluation Periods		Comparisons		
	Current (Ending Date 05/31/2010)	Baseline (Ending Date 05/31/2010)	Rating of 75	Target	National Average
Energy Performance Rating	1	1	75	N/A	50
Energy Intensity					
Site (kBtu/ft ²)	253	253	47	N/A	63
Source (kBtu/ft ²)	700	700	131	N/A	175
Energy Cost					
\$/year	\$ 113,111.88	\$ 113,111.88	\$ 21,137.93	N/A	\$ 28,260.05
\$/ft ² /year	\$ 6.37	\$ 6.37	\$ 1.19	N/A	\$ 1.59
Greenhouse Gas Emissions					
MtCO ₂ e/year	613	613	115	N/A	153
kgCO ₂ e/ft ² /year	35	35	7	N/A	9

More than 50% of your building is defined as Office. 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.

Statement of Energy Performance

2010

1011

1011

Anchorage , AK 99518

Portfolio Manager Building ID: 2350577

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit energystar.gov/benchmark.

This building's
score

1

1

50

100

Least Efficient

Average

Most Efficient

This building uses 700 kBtu per square foot per year.*

*Based on source energy intensity for the 12 month period ending May 2010

Buildings with a score of
75 or higher may qualify
for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at energystar.gov

Date of certification



Date Generated: 10/05/2010

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1012

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

CHUGACH
POWERING ALASKA'S FUTURE

CONTROL
CONTRACTORS

smart building solutions



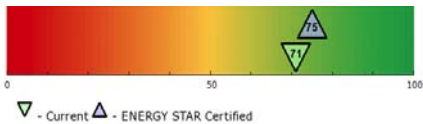
positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

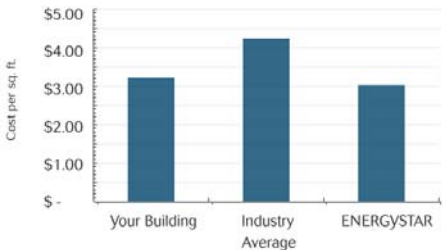


Your building's ENERGY STAR® Energy Performance Rating is **71**. Its Energy Use Index is **175 kbtu per sq. ft.**

Your building's ENERGY STAR score of 71 ranks you above average versus your peers, but your building may still have good opportunity to raise your ENERGY STAR score.



Cost

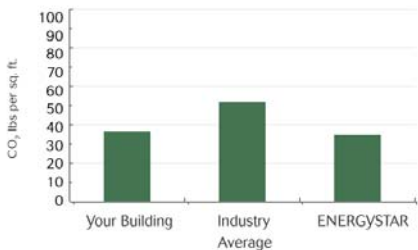


Your building's annual cost per square foot is **\$3.20 per sq. ft.** overall.

Your annual cost can be reduced by \$11,849 or 32.0% by achieving an ENERGY STAR score of 90.



Carbon Footprint



Your building's annual carbon footprint is **191 metric tons of CO₂** or **36.39 lbs per sq. ft.**

Your building's carbon emissions are 46.9% more than an energy efficient facility, and can further be reduced by 12 lbs per sq. ft. by achieving an ENERGY STAR score of 90.

You could save up to **\$11,849** annually or **\$59,245** over 5 years by raising your ENERGY STAR score to the level of 90.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

-
-
-
-
-
-



How Does Your Building Use Electricity Today?

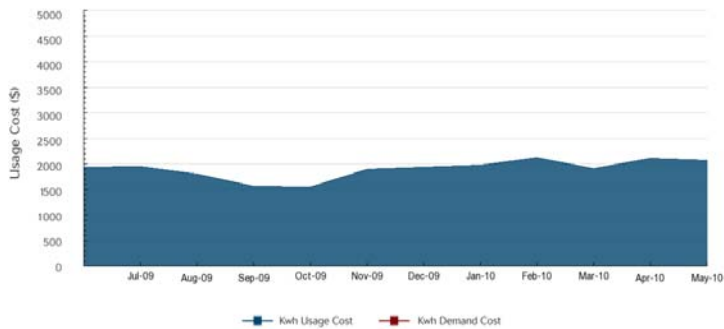
This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

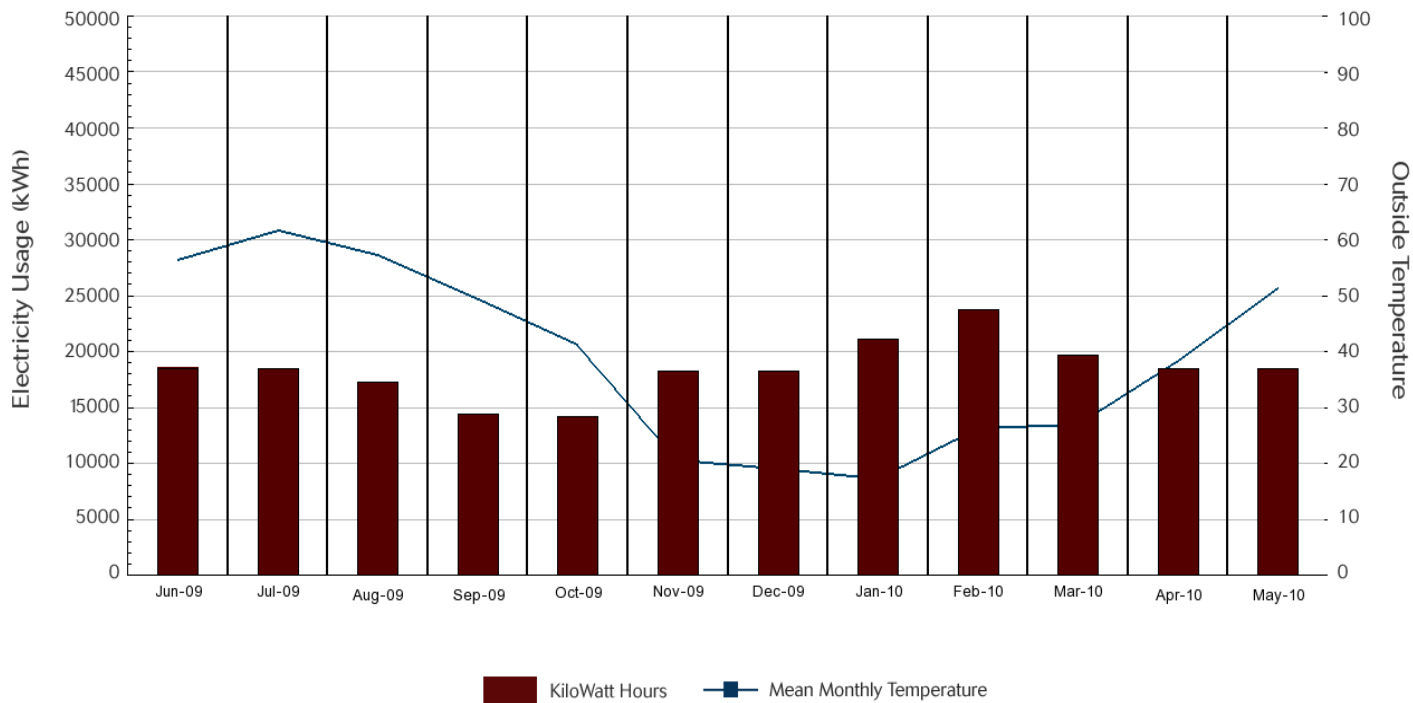
Electricity Consumption

- Electricity comprises 61.6% of your total utility cost, and 37.2% of your total utility consumption.
- Your Total Spend on electricity is \$22,799, so when considering savings opportunities, remember you can only save some percentage of that total.
- Demand costs are included in the total electricity costs.

Monthly Electricity Costs



Electricity Consumption And Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

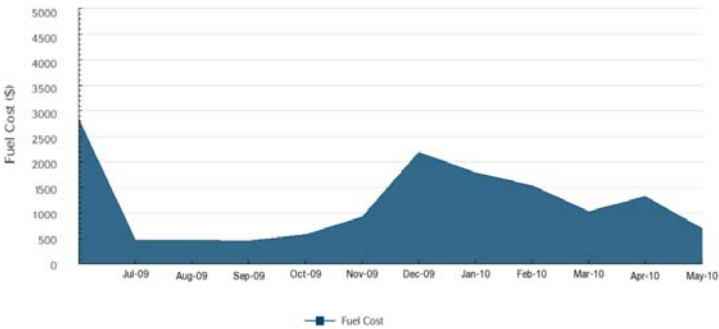


Monthly Fuel Costs

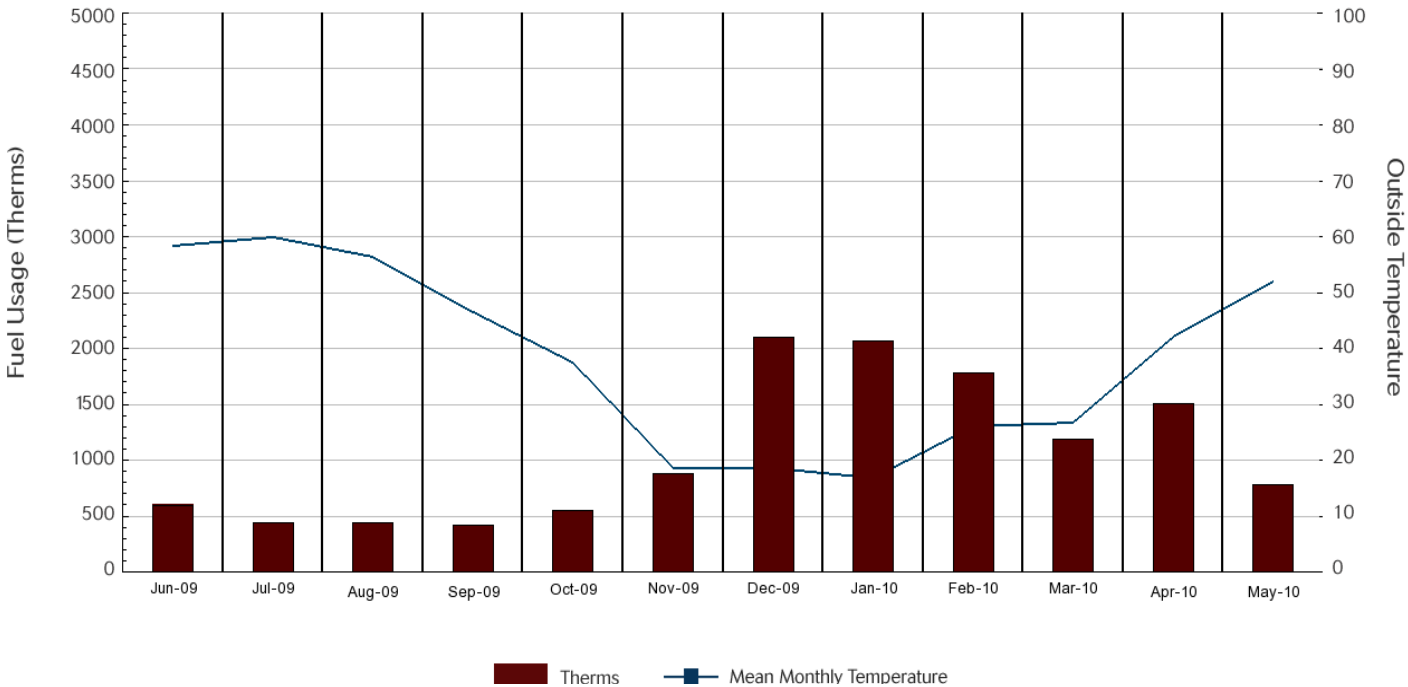
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 38.4% of your total utility cost, and 62.8% of your total utility consumption.
- Your Total Spend on Fuel is \$14,223, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption And Outside Air Temperature



Building Comfort and Ventilation Analysis

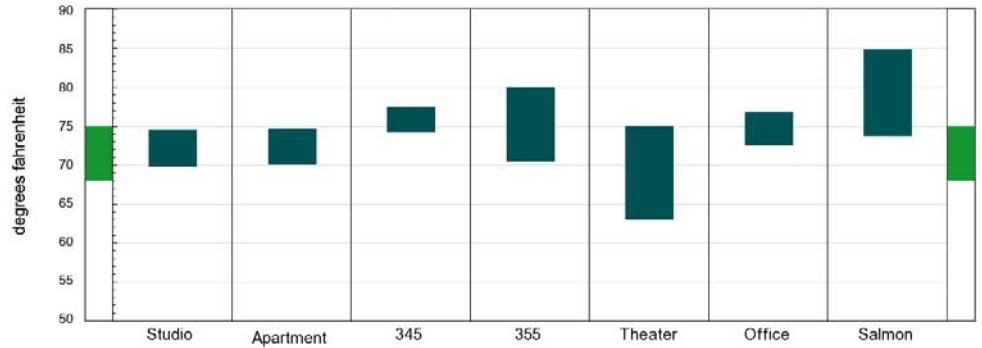
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building is out of control with ample opportunity to save energy.

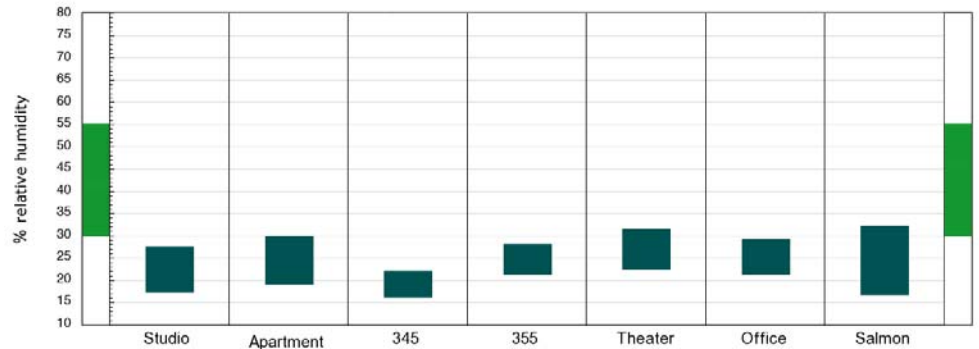
- 4 space(s) were too warm at times
- 4 space(s) were too cool at times
- 5 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 7 space(s) had low relative humidity at times

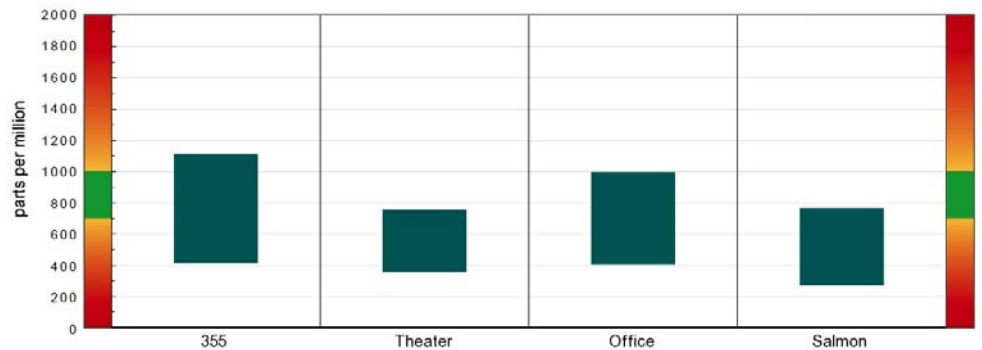


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 2 space(s) had elevated carbon dioxide levels
- 4 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: $\pm 1^\circ\text{F}$]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating Set Point is 68 / 68
	Occupied/Unoccupied Cooling Set Point is 78 / 78

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Further Comfort & Energy Recommendations

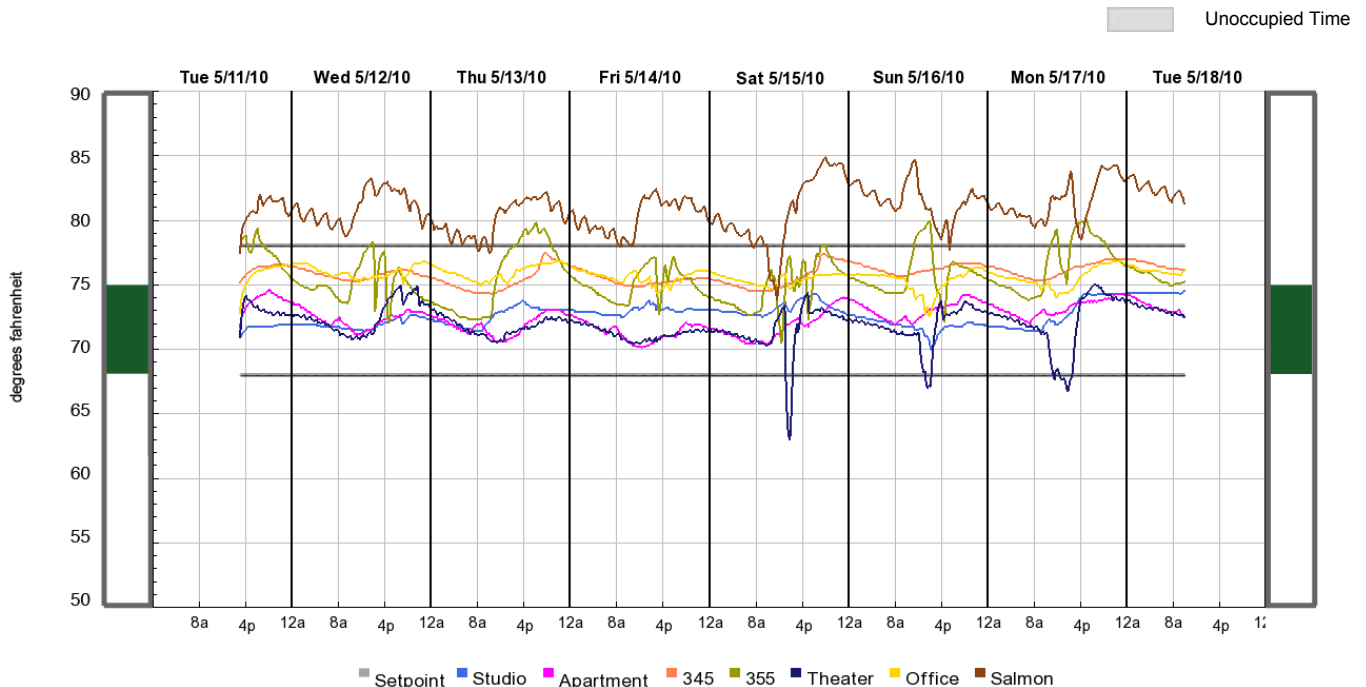
- Increase the amount of heating set back possible during the unoccupied times

Monitor Statistics

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%To Pt	SV†
Studio		70	74	73	0%	2
Apartment		70	74	72	0%	5
345		74	77	76	80%	2
355		72	80	76	54%	8
Theater		66	75	72	3%	11
Office		73	77	76	87%	3
Salmon		75	84	81	94%	9

These statistics are for occupied times only.

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

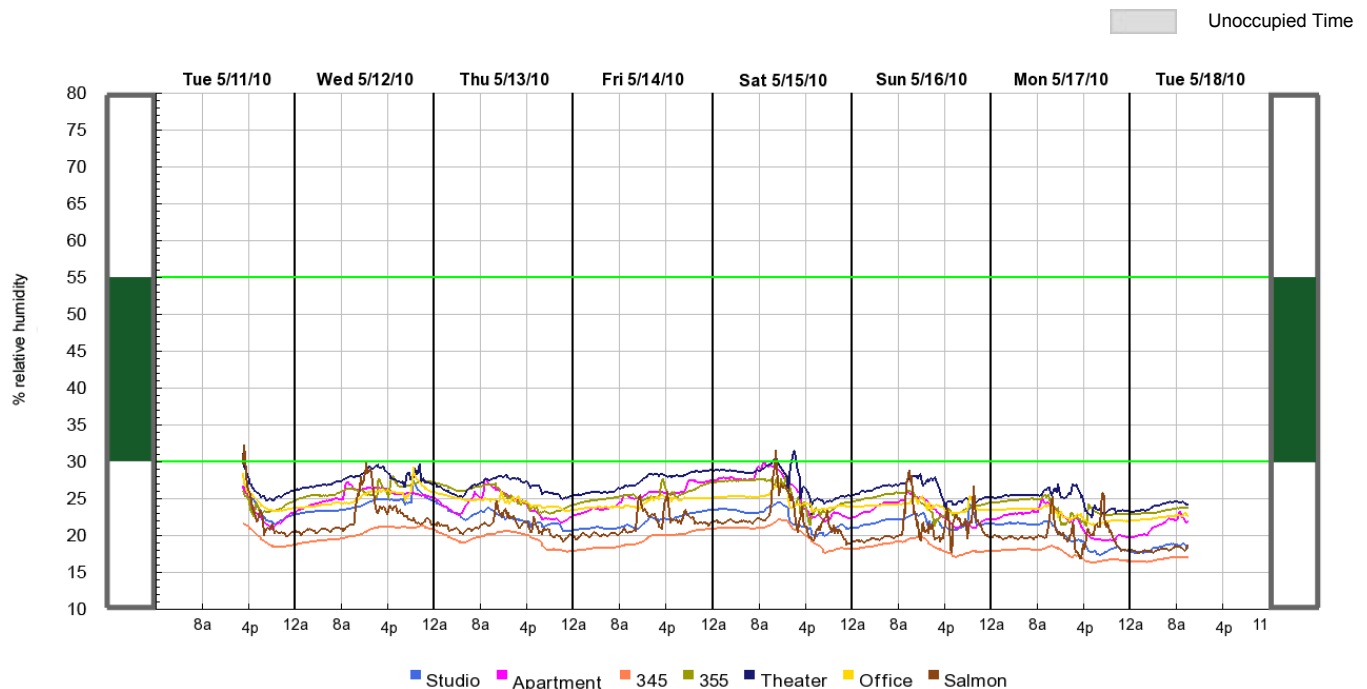
- Add humidification system
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	%
Studio		17	27	22	100%
Apartment		19	30	24	100%
345		16	22	19	100%
355		21	28	25	100%
Theater		23	31	26	94%
Office		21	29	24	100%
Salmon		17	32	21	99%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

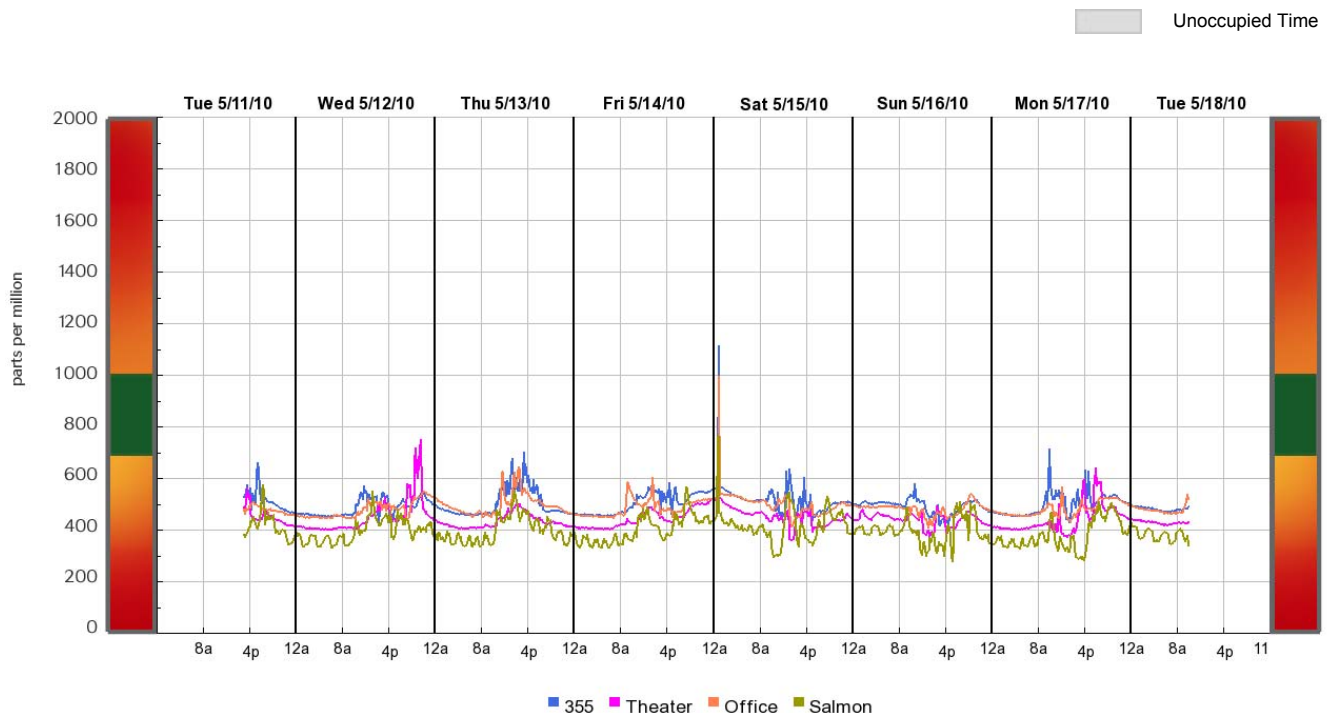
Comfort & Health Recommendations

- Increase the amount of ventilation into the building.

Monitor	Alert Lvl	Min	Max	Avg	%
355		418	1115	498	100%
Theater		360	752	441	95%
Office		408	996	485	100%
Salmon		276	762	397	100%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 24 average occupied hours

Energy Savings Opportunities

Our findings indicate your building is not wasting energy on lights.

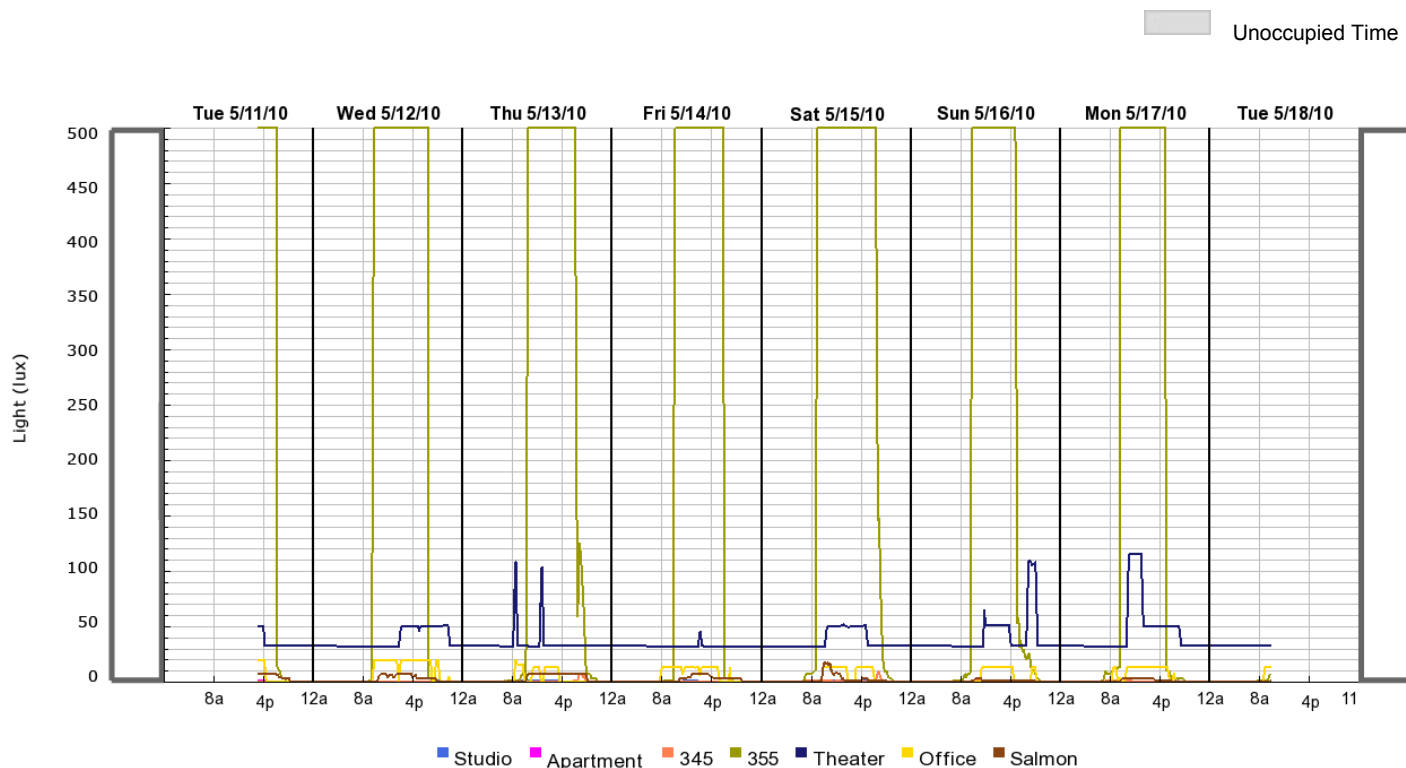
Energy Recommendations Based on Measurements

- No recommendations at this time.

Further Energy Recommendations

- No recommendations at this time.

Monitor	Alert Lvl	Measured On-Time
Studio		0 hrs
Apartment		2.2 hrs
345		3.2 hrs
355		8.9 hrs
Theater		8.8 hrs
Office		7.5 hrs
Salmon		2.8 hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99501

Outdoor Temperature

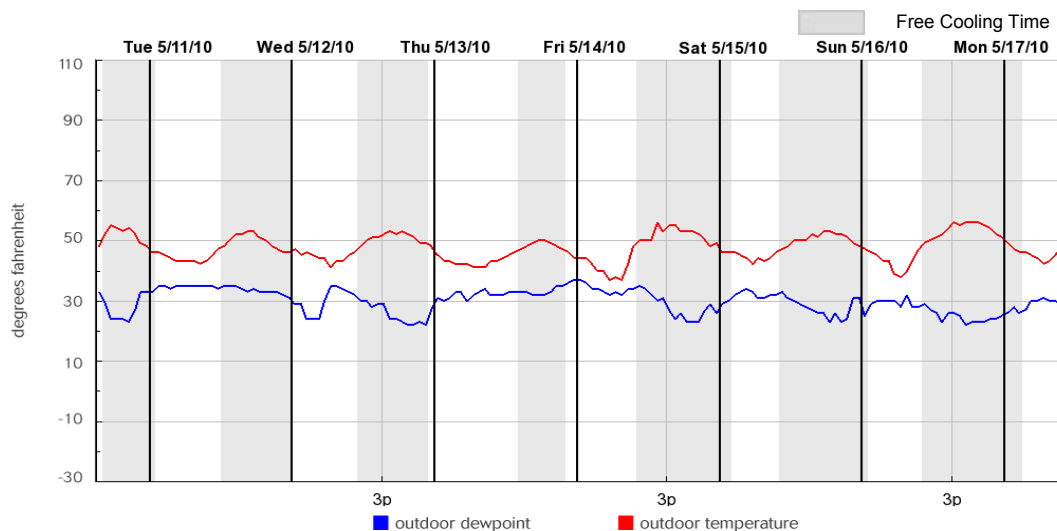
Test Period Avg: 5/11/10 – 5/18/10	Heating Degree Days	Cooling Degree Days
47 °F	18	0

Outdoor Temperature and Dew Point

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dew point during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	XXX
Contact	XXX
Address	Anchorage, AK 99501
Building Information	
Building Background	Building Usage: Retail Building Size (sq ft): 11568 # of Stories: 2 Building Status: Existing Construction type: Cement Block LEED Cert.: None Heating System: Boiler Domestic Hot Water: Gas or Other Fuel (Low Usage) Economizer: No Cooling System: None
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
Studio	20418
Apartment	20416
345	20415
355	20300
Theater	20295
Office	20289
Salmon	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	00:00	68	78	Yes
Tue				
Wed				
Thu	23:59	68	78	No
Fri				
Sat				
Sun				

Building Description

Office			
Gross Floor Area	5000	Weekly Operating Hours	65
Number of Workers on Main Shift	4	Number of PCs	11
Office Air-Conditioned	50% or more	Office Heated	50% or more

Retail			
Gross Floor Area	6568	Weekly Operating Hours	70
Open/Closed Refrigeration/Freezer Cases	3	Walk-in Refrigeration/Freezer Units	2
Number of Workers on Main Shift	12	Number of PCs	4
Number of Cash Registers	4	% Air-Conditioned	0
% Heated	100	Exterior Entrance	Yes

Parking			
Enclosed Floor Area	0	Non-Enclosed Floor Area (w/roof)	0
Open Floor Area (w/o roof)	7500	Weekly Hours of Access	168

Building Controls Information

Current Controls	
Controls Type	Pneumatic
Schedule Type	Time Clock
Air Delivery Method	Variable Air Volume
Air-Flow Modulation	N/A

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
6/2/09	18480	\$1,937		\$0
7/2/09	18480	\$1,951		\$0
8/2/09	17280	\$1,797		\$0
9/2/09	14400	\$1,560		\$0
10/2/09	14160	\$1,549		\$0
11/2/09	18240	\$1,892		\$0
12/2/09	18240	\$1,936		\$0
1/2/10	21120	\$1,978		\$0
2/2/10	23760	\$2,122		\$0
3/2/10	19680	\$1,907		\$0
4/2/10	18480	\$2,105		\$0
5/2/10	18480	\$2,065		\$0
TOTAL:	220800	\$22,799		\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
6/10/09 594		\$2,823
7/10/09 438		\$464
8/10/09 436		\$462
9/10/09 421		\$447
10/10/09 546		\$576
11/10/09 881		\$922
12/10/09 2101		\$2,182
1/10/10 2068		\$1,785
2/1/10 1777		\$1,535
3/1/10 1183		\$1,026
4/10/10 1502		\$1,314
5/3/10 779		\$687
TOTAL:	12726	\$14,223

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE

1013

ASSESSMENT PERFORMED BY

Control Contractors – Anchorage

5660 B Street

Anchorage, Alaska 99518



smart building solutions

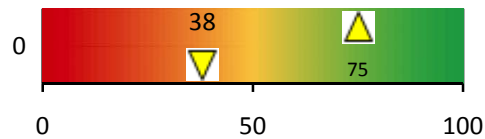


posi⊕iveENERGY

EXECUTIVE SUMMARY



Energy Use

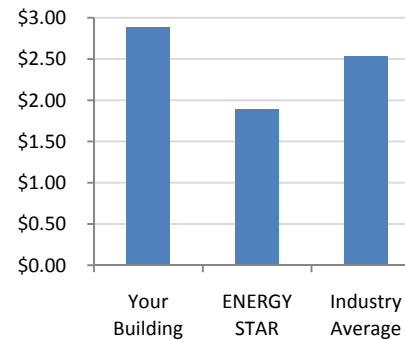


Your building's ENERGY STAR® Energy Performance Rating is 38. Its Energy Use Index is 133 kbtu per sq. ft.

Your building's ENERGY STAR score of 38 ranks you below average versus your peers, and falls well below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

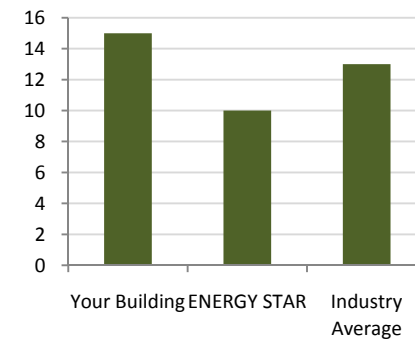


Your building's annual cost per square foot is \$2.88 per sq. ft. overall.

Your building's cost per square foot is \$0.34 more than the industry average. Your annual cost can be reduced by \$10,225 (11.7%) or \$51,125 over 5 years by achieving an ENERGY STAR score of 50.



Carbon Footprint



Your building's annual carbon footprint is 453 metric tons of CO2 or 15lbs per sq. ft.

Your building's carbon emissions are 13.3% more than the industry average, and can be reduced by 2 lbs per sq. ft. by achieving an ENERGY STAR score of 50.

You could save up to \$10,225 annually or \$51,125 over 5 years by raising your ENERGY STAR score to the level of 50

While a detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR database.

How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

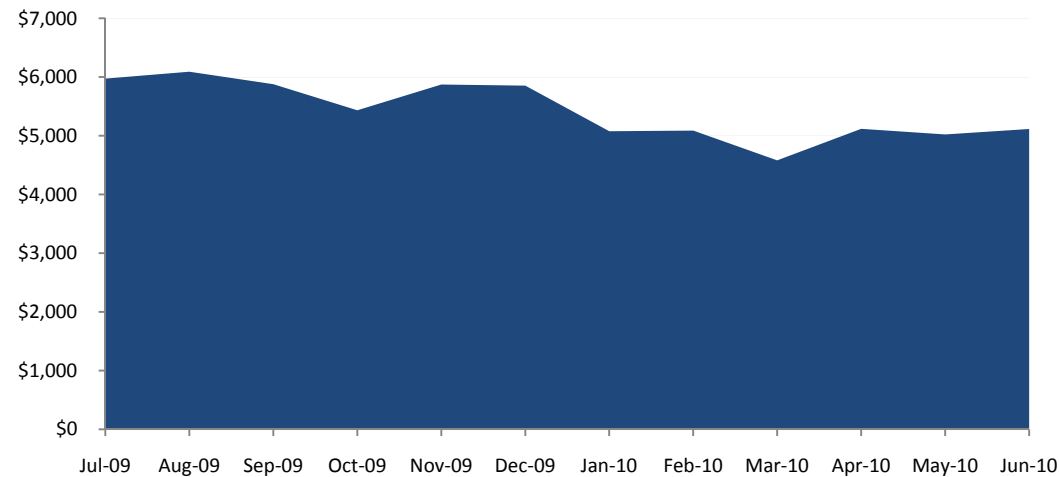


MONTHLY ELECTRICTY COST

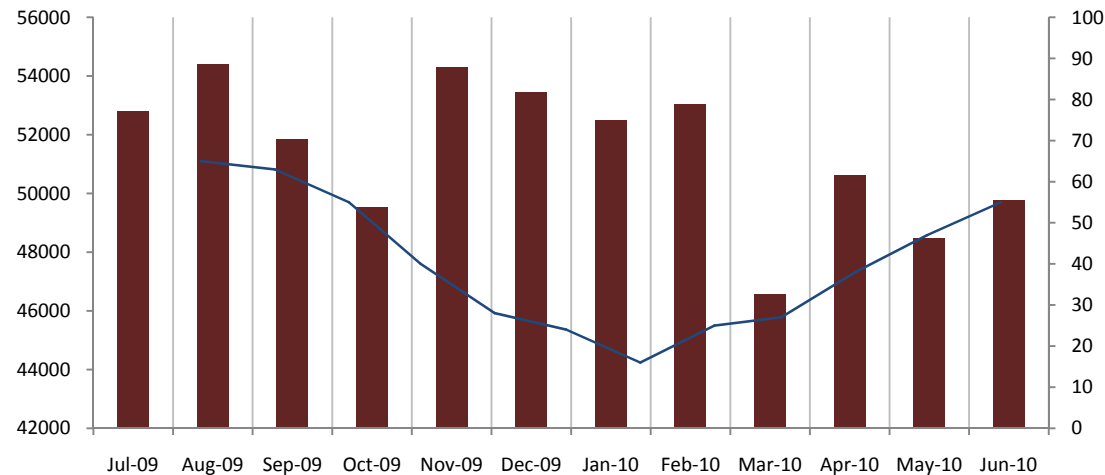
Utility Bill Analysis

Electricity Consumption

- Electricity comprises 78% of your total utility cost, and 53% of your total utility consumption.
- Your Total Spend on electricity is \$65,119, so when considering savings opportunities, remember you can only save some percentage of that total.



ELECTRICITY CONSUMPTION AND OUTSIDE AIRTEMPERATURE



How Does Your Building Use Fuel Today?

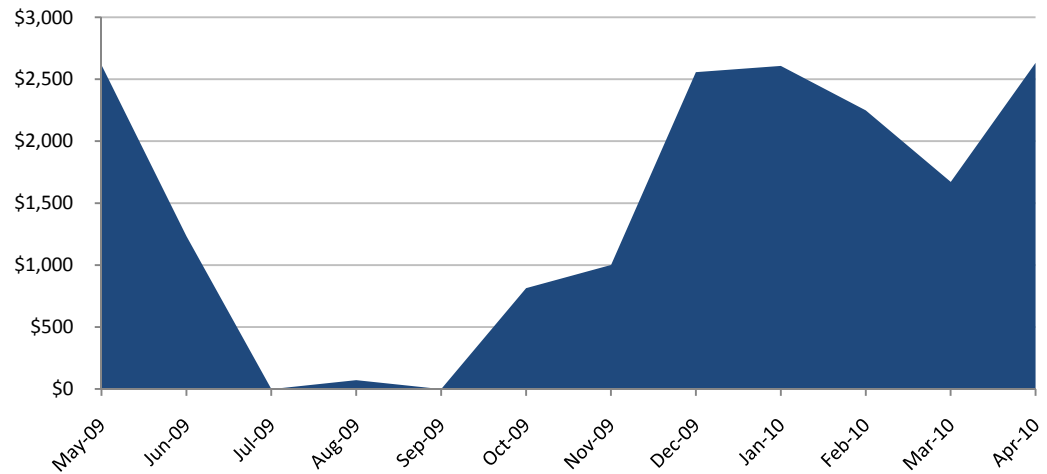
This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

MONTHLY FUEL COST

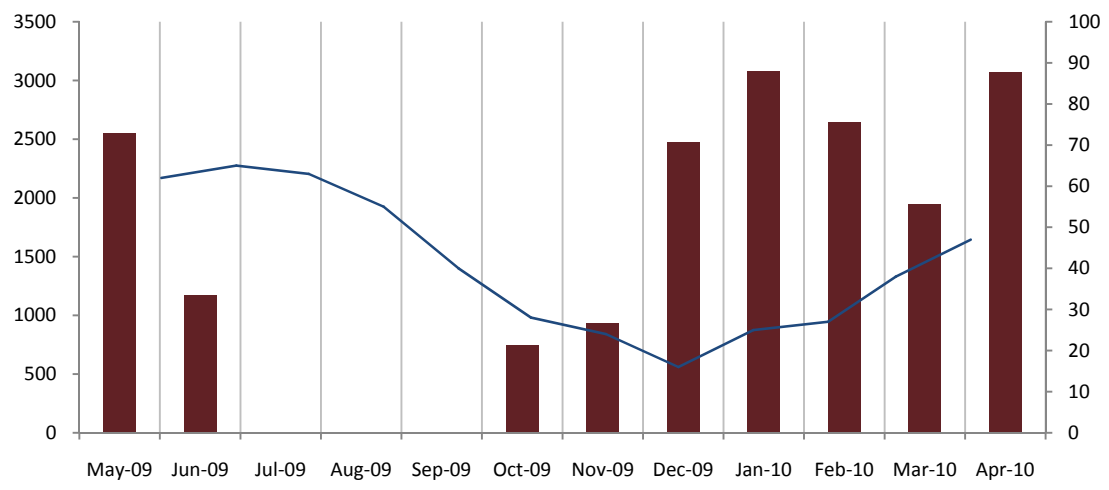
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 22% of your total utility cost, and 47% of your total utility consumption.
- Your Total Spend on Fuel is \$17,461, so when considering savings opportunities, remember you can only save some percentage



FUEL CONSUMPTION AND OUTSIDE AIRTEMPERATURE

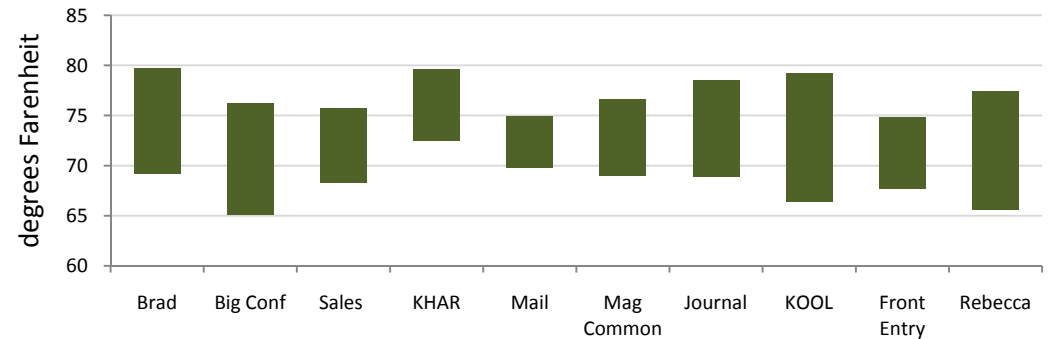


Building Comfort and Ventilation Analysis

This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

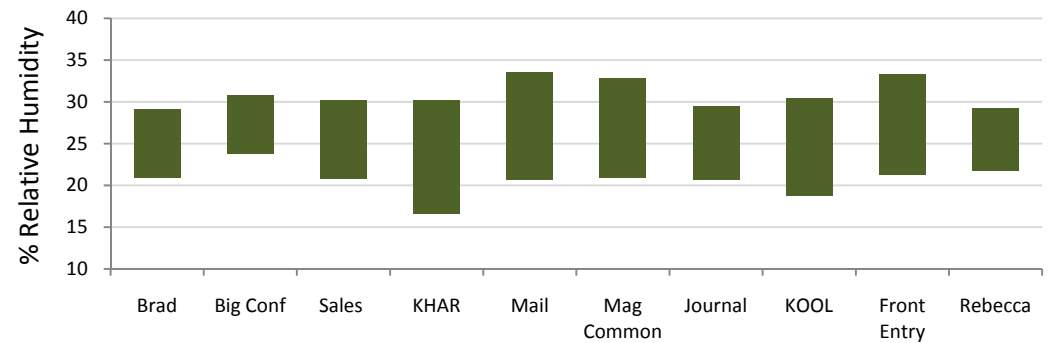
TEMPERATURE FINDINGS

- 7 space(s) were too warm at times
- 0 space(s) were too cool at times
- 5 space(s) had excessive temperature variation



RELATIVE HUMIDITY

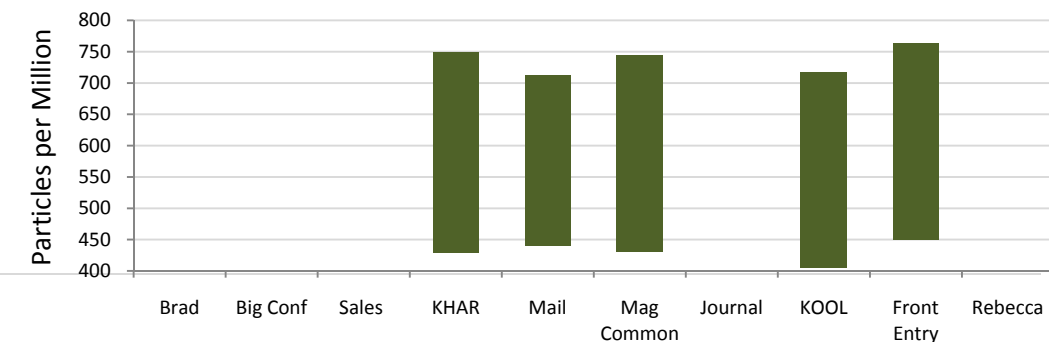
- 0 space(s) had high relative humidity at times
- 10 space(s) had low relative humidity



CARBON DIOXIDE

Your building is over ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating setpoint and raising the cooling setpoint can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

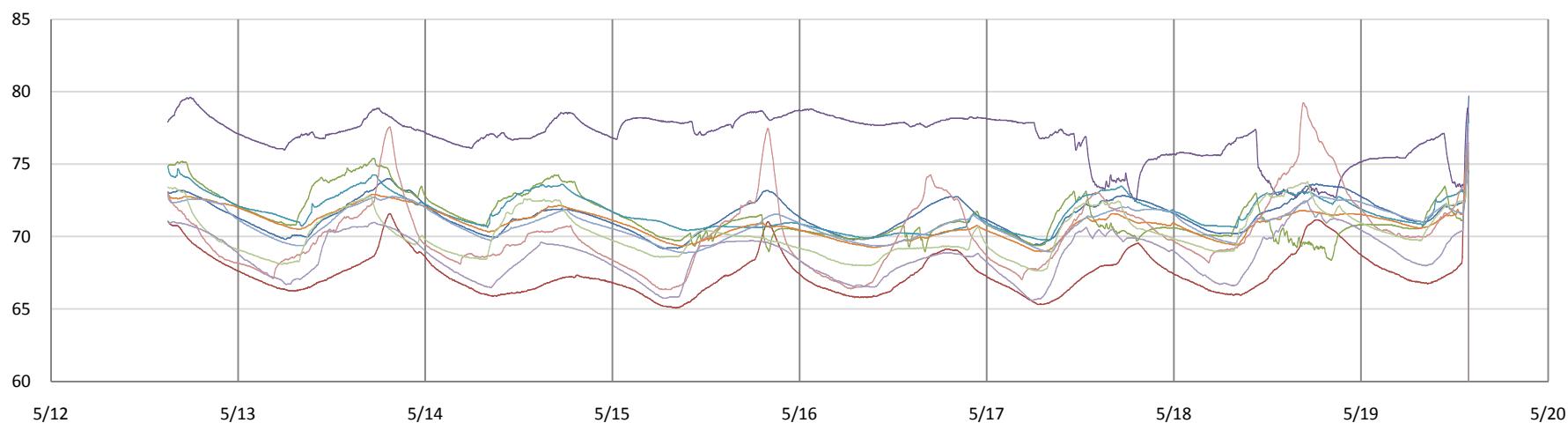
ENERGY SAVING OPPORTUNITIES

Our findings indicate there are several ways to save money by operating your building differently.

Energy Recommendations based on Measurements

- Calibrate thermostats to reduce temperature variation
- Verify the control system is shutting the heat and cooling equipment off
- Move thermostats to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

TIME – TEMPERATURE



Relative-Humidity

Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

ANALYSIS AND RECOMMENDATIONS

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

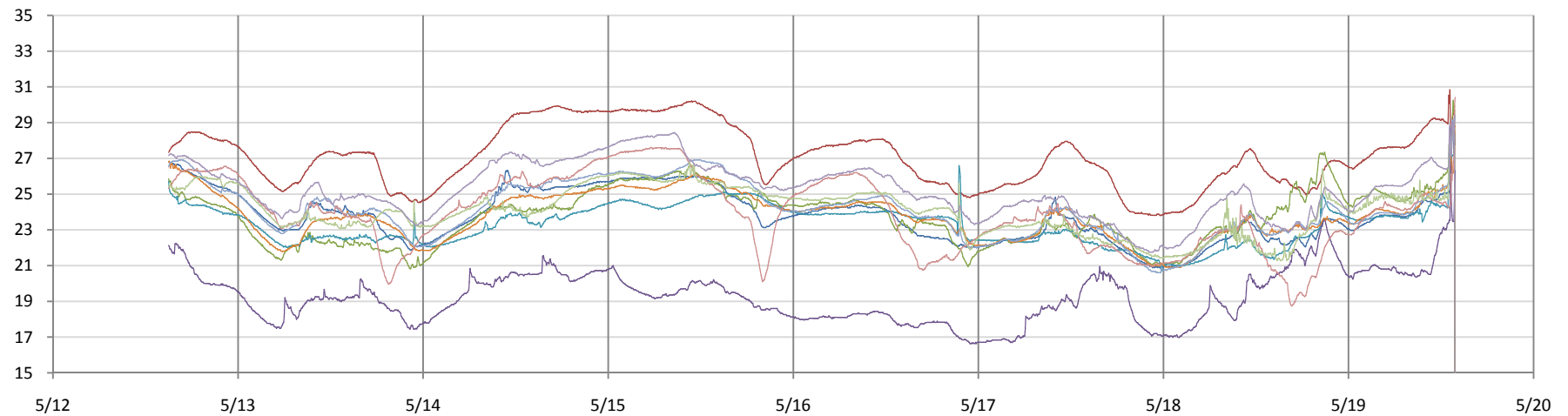
Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

- Add humidification system
- Improve ventilation control

TIME-RELATIVE HUMIDITY



Carbon Dioxide

Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

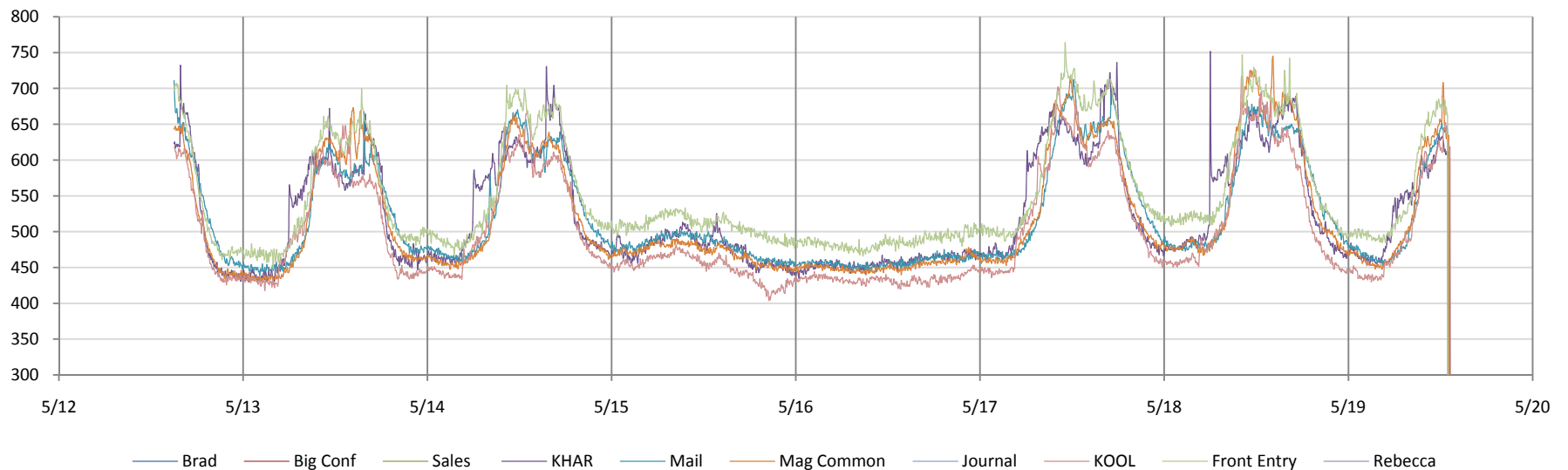
Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building different:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

TIME-CARBON DIOXIDE



Lighting

Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

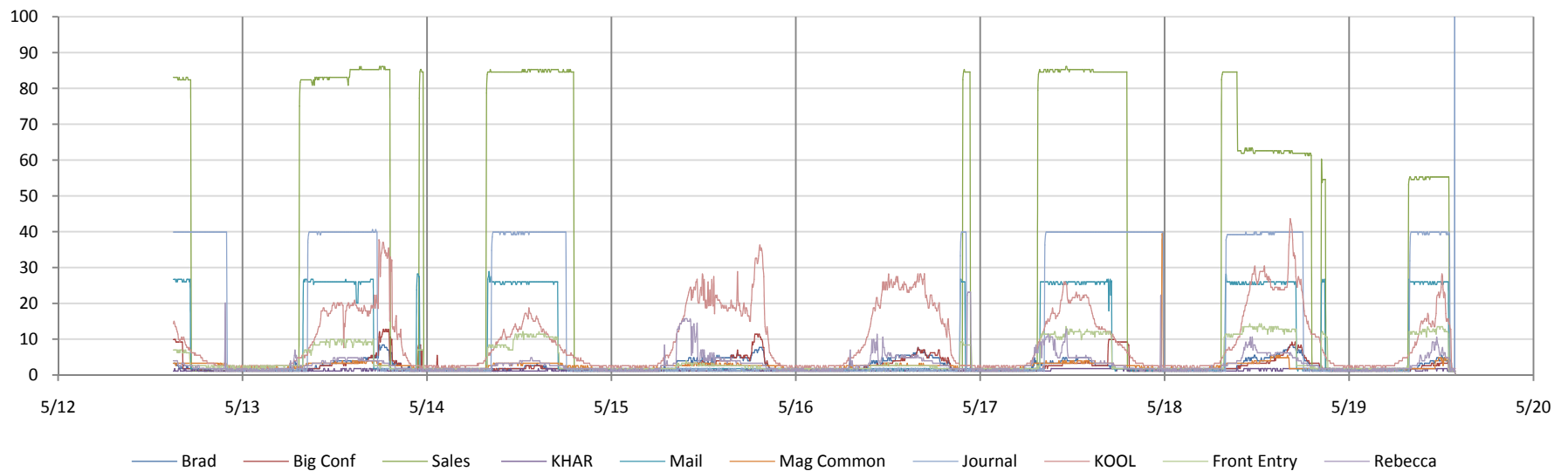
Sources: BOMA, ENERGY STAR, DOE

Energy Saving Opportunities

Energy Recommendations Based on Measurements

- Verify proper lighting levels in each area of the building

TIME LIGHTING





STATEMENT OF ENERGY PERFORMANCE 1013

Building ID: 2350578

For 12-month Period Ending: March 31, 2010¹

Date SEP becomes ineligible: N/A

Date SEP Generated: October 05, 2010

Facility

1013
1013
Anchorage, AK 99518

Facility Owner

N/A

Primary Contact for this Facility

N/A

Year Built: 1980**Gross Floor Area (ft²):** 30,350**Energy Performance Rating²** (1-100) 38**Site Energy Use Summary³**

Electricity - Grid Purchase(kBtu)	2,143,731
Natural Gas (kBtu) ⁴	1,895,900
Total Energy (kBtu)	4,039,631

Energy Intensity⁵

Site (kBtu/ft ² /yr)	133
Source (kBtu/ft ² /yr)	301

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	453
---	-----

Electric Distribution Utility

Chugach Electric Assn Inc

National Average Comparison

National Average Site EUI	118
National Average Source EUI	266
% Difference from National Average Source EUI	13%
Building Type	Office

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) or a Registered Architect (RA) 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 or RA 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	1013	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	Office	Is this an accurate description of the space in question?		☐
Location	1013, Anchorage , AK 99518	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		☐
Office (Office)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	30,350 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.		☐
Weekly operating hours	80 Hours	Is this the total number of hours per week that the Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		☐
Workers on Main Shift	50	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100. The normal worker density ranges between 0.3 and 5.3 workers per 1000 square feet (92.8 square meters)		☐
Number of PCs	100	Is this the number of personal computers in the Office?		☐
Percent Cooled	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐
Parking (Parking)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	10,000 Sq. Ft.	Is this the total square footage of the entire parking area (enclosed + nonenclosed + open floor area)?		☐

Enclosed Floor Area	0 Sq. Ft.	Is this the total square footage of the enclosed garage space? An enclosed garage is defined as having both sides and a roof.	☐
Non-Enclosed Floor Area (w/roof)	0 Sq. Ft.	Is this the total square footage of the nonenclosed garage space? This is typically defined as the portion of the garage above ground (contains no sides but is under a roof).	☐
Open Floor Area (w/o roof)	10,000 Sq. Ft.	Is this the total square footage of the nonenclosed parking area without a roof? This is typically defined as open parking lots or the very top level of an above ground parking garage.	☐
Weekly Hours of Access	168 Hours	Is this the total number of hours per week when it is possible for a vehicle to enter or exit?	☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Chugach Electric Assn Inc

Fuel Type: Electricity		
Meter: Electricity (kWh (thousand Watt-hours)) Space(s): Entire Facility Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
02/18/2010	03/17/2010	46,560.00
01/18/2010	02/17/2010	53,040.00
12/18/2009	01/17/2010	52,480.00
11/18/2009	12/17/2009	53,440.00
10/18/2009	11/17/2009	54,320.00
09/18/2009	10/17/2009	49,520.00
08/18/2009	09/17/2009	51,840.00
07/18/2009	08/17/2009	54,400.00
06/18/2009	07/17/2009	52,800.00
05/18/2009	06/17/2009	54,560.00
04/18/2009	05/17/2009	53,200.00
Electricity Consumption (kWh (thousand Watt-hours))		576,160.00
Electricity Consumption (kBtu (thousand Btu))		1,965,857.92
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		1,965,857.92
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☐
Fuel Type: Natural Gas		
Meter: Gas (ccf (hundred cubic feet)) Space(s): Entire Facility		
Start Date	End Date	Energy Use (ccf (hundred cubic feet))
02/03/2010	03/02/2010	1,944.00
01/03/2010	02/02/2010	2,642.00
12/03/2009	01/02/2010	3,076.00
11/03/2009	12/02/2009	2,476.00
10/03/2009	11/02/2009	935.00
09/03/2009	10/02/2009	745.00
08/03/2009	09/02/2009	0.00
07/03/2009	08/02/2009	8.00
06/03/2009	07/02/2009	0.00
05/03/2009	06/02/2009	1,169.00
04/03/2009	05/02/2009	2,547.00

Gas Consumption (ccf (hundred cubic feet))	15,542.00
Gas Consumption (kBtu (thousand Btu))	1,599,271.80
Total Natural Gas Consumption (kBtu (thousand Btu))	1,599,271.80
Is this the total Natural Gas consumption at this building including all Natural Gas 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.	☐

On-Site Solar and Wind Energy	
Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.	☐

Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA 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

1013
1013
Anchorage , AK 99518

Facility Owner

N/A

Primary Contact for this Facility

N/A

General Information

1013	
Gross Floor Area Excluding Parking: (ft ²)	30,350
Year Built	1980
For 12-month Evaluation Period Ending Date:	March 31, 2010

Facility Space Use Summary

Office		Parking	
Space Type	Office	Space Type	Parking
Gross Floor Area(ft ²)	30,350	Gross Floor Area(ft ²)	10,000
Weekly operating hours	80	Enclosed Floor Area	0
Workers on Main Shift	50	Non-Enclosed Floor Area (w/roof)	0
Number of PCs	100	Open Floor Area (w/o roof)	10,000
Percent Cooled	50% or more	Weekly Hours of Access	168
Percent Heated	50% or more		

Energy Performance Comparison

Performance Metrics	Evaluation Periods		Comparisons		
	Current (Ending Date 03/31/2010)	Baseline (Ending Date 03/31/2010)	Rating of 75	Target	National Average
Energy Performance Rating	38	38	75	50	50
Energy Intensity					
Site (kBtu/ft ²)	133	133	87	118	118
Source (kBtu/ft ²)	301	301	198	266	266
Energy Cost					
\$/year	\$ 87,411.12	\$ 87,411.12	\$ 57,339.33	\$ 77,185.79	\$ 77,185.79
\$/ft ² /year	\$ 2.88	\$ 2.88	\$ 1.89	\$ 2.54	\$ 2.54
Greenhouse Gas Emissions					
MtCO ₂ e/year	453	453	297	400	400
kgCO ₂ e/ft ² /year	15	15	10	13	13

More than 50% of your building is defined as Office. 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.

Statement of Energy Performance

2010

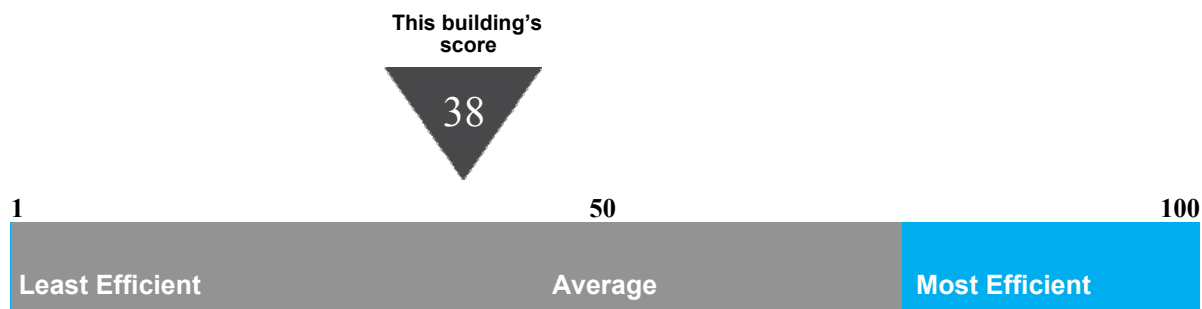
1013

1013

Anchorage , AK 99518

Portfolio Manager Building ID: 2350578

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit energystar.gov/benchmark.



This building uses 301 kBtu per square foot per year.*

*Based on source energy intensity for the 12 month period ending March 2010

Buildings with a score of
75 or higher may qualify
for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at energystar.gov

Date of certification



Date Generated: 10/05/2010

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1014

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

CHUGACH
POWERING ALASKA'S FUTURE

CONTROL
CONTRACTORS

smart building solutions



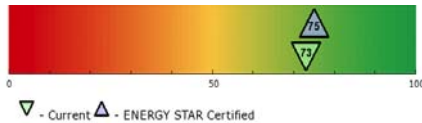
positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

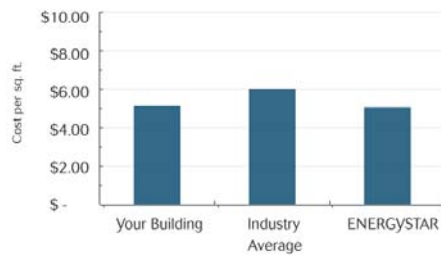


Your building's ENERGY STAR® Energy Performance Rating is **73**. Its Energy Use Index is **223 kbtu per sq. ft.**

Your building's ENERGY STAR score of 73 ranks you above average versus your peers, but your building may still have good opportunity to raise your ENERGY STAR score.



Cost

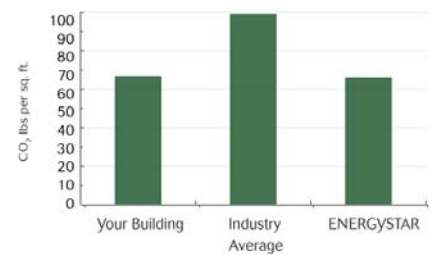


Your building's annual cost per square foot is **\$5.10 per sq. ft.** overall.

Your annual cost can be reduced by \$18,404 or 15.7% by achieving an ENERGY STAR score of 90.



Carbon Footprint



Your building's annual carbon footprint is **695 metric tons of CO₂** or **66.60 lbs per sq. ft.**

Your building's carbon emissions are 18.6% more than an energy efficient facility, and can further be reduced by 10 lbs per sq. ft. by achieving an ENERGY STAR score of 90.

You could save up to **\$18,404** annually or **\$92,020** over 5 years by raising your ENERGY STAR score to the level of 90.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Your building has some control issues in specific sections.
- Your building is over-ventilated

How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

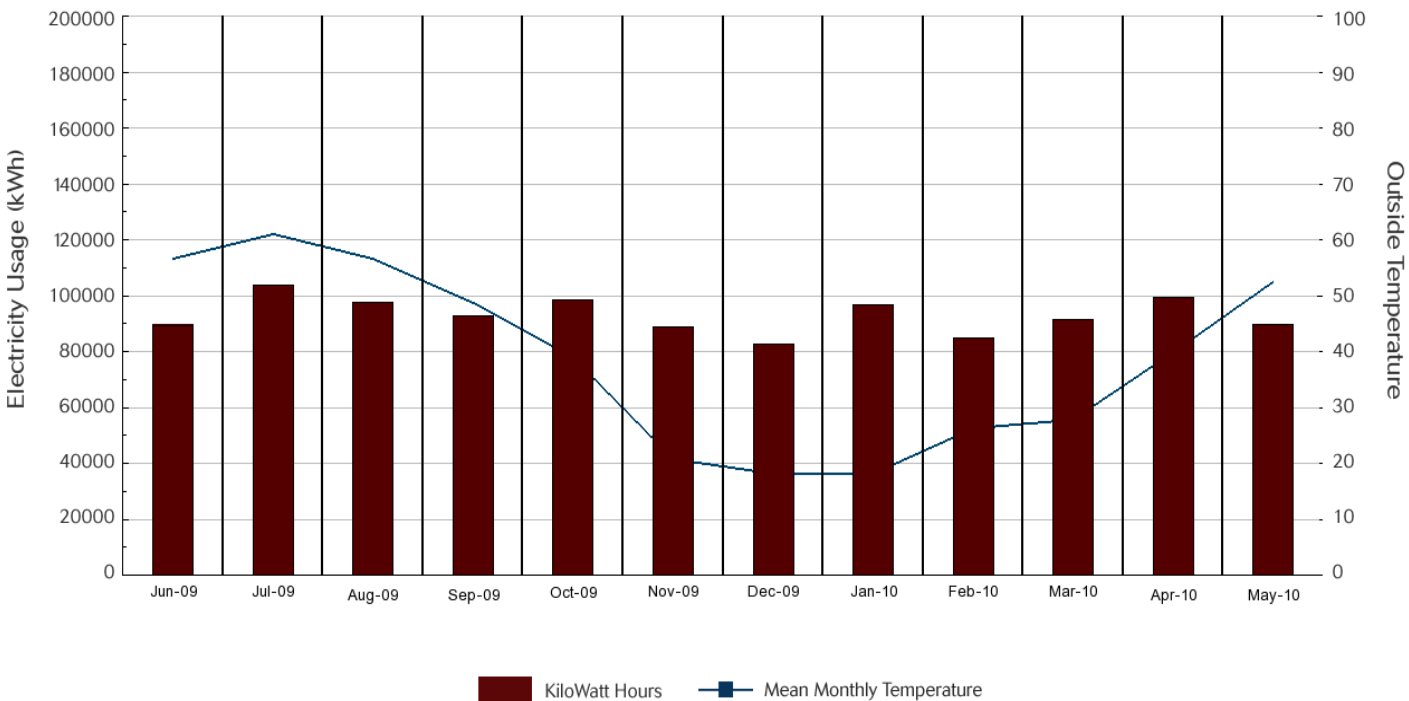
Electricity Consumption

- Electricity comprises 89.1% of your total utility cost, and 74.2% of your total utility consumption.
- Your Total Spend on electricity is \$104,469, so when considering savings opportunities, remember you can only save some percentage of that total.
- Demand costs are part of the total electricity costs.

Monthly Electricity Costs



Electricity Consumption and Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

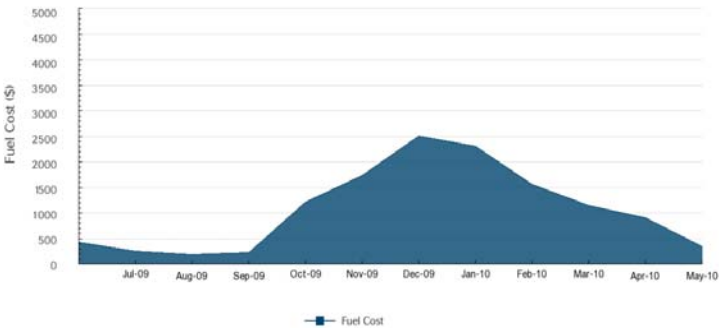


Monthly Fuel Costs

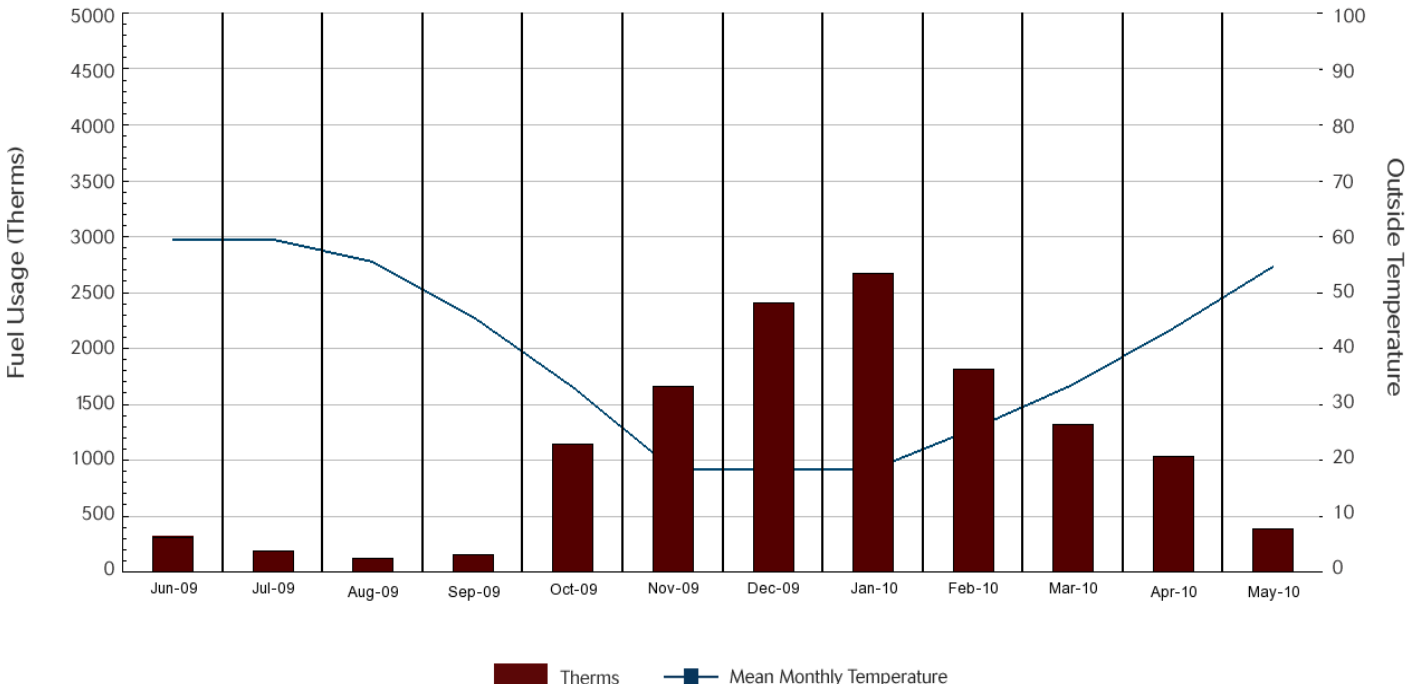
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 10.9% of your total utility cost, and 25.8% of your total utility consumption.
- Your Total Spend on Fuel is \$12,782, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption and Outside Air Temperature



Building Comfort and Ventilation Analysis

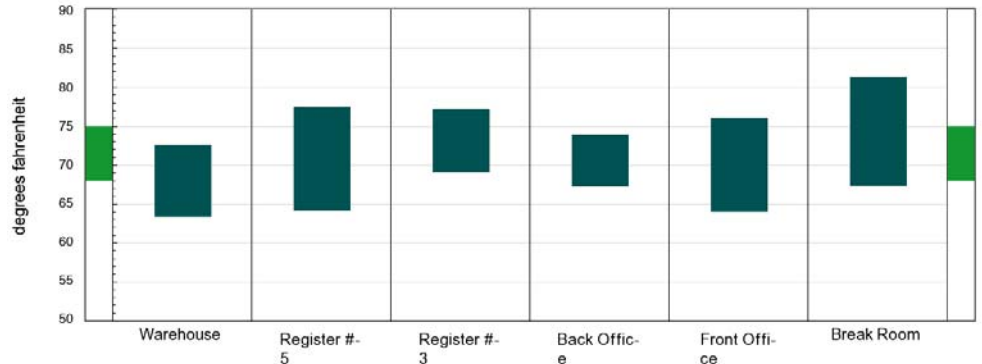
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building has some control issues in specific sections.

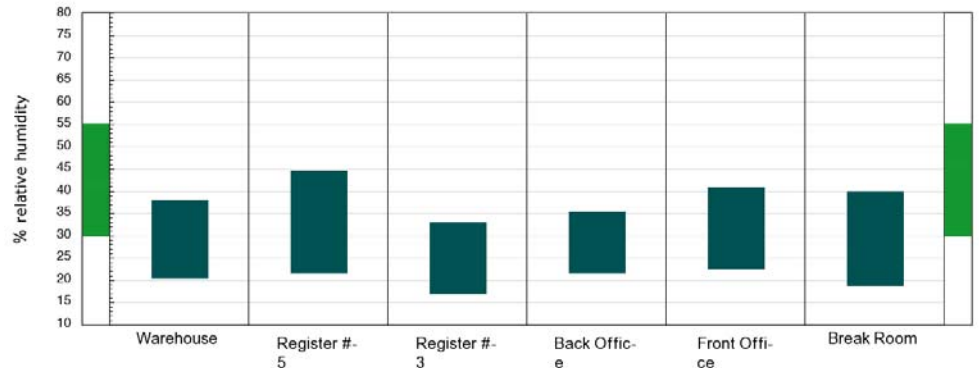
- 3 space(s) were too warm at times
- 4 space(s) were too cool at times
- 4 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 5 space(s) had low relative humidity at times

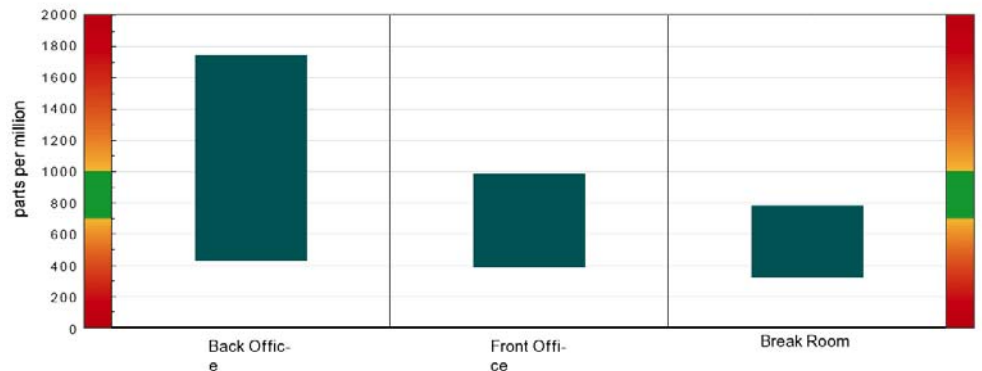


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 1 space(s) had elevated carbon dioxide levels
- 3 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: $\pm 1^\circ\text{F}$]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating Set Point is 70 / 70
	Occupied/Unoccupied Cooling Set Point is 80 / 80

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Further Comfort & Energy Recommendations

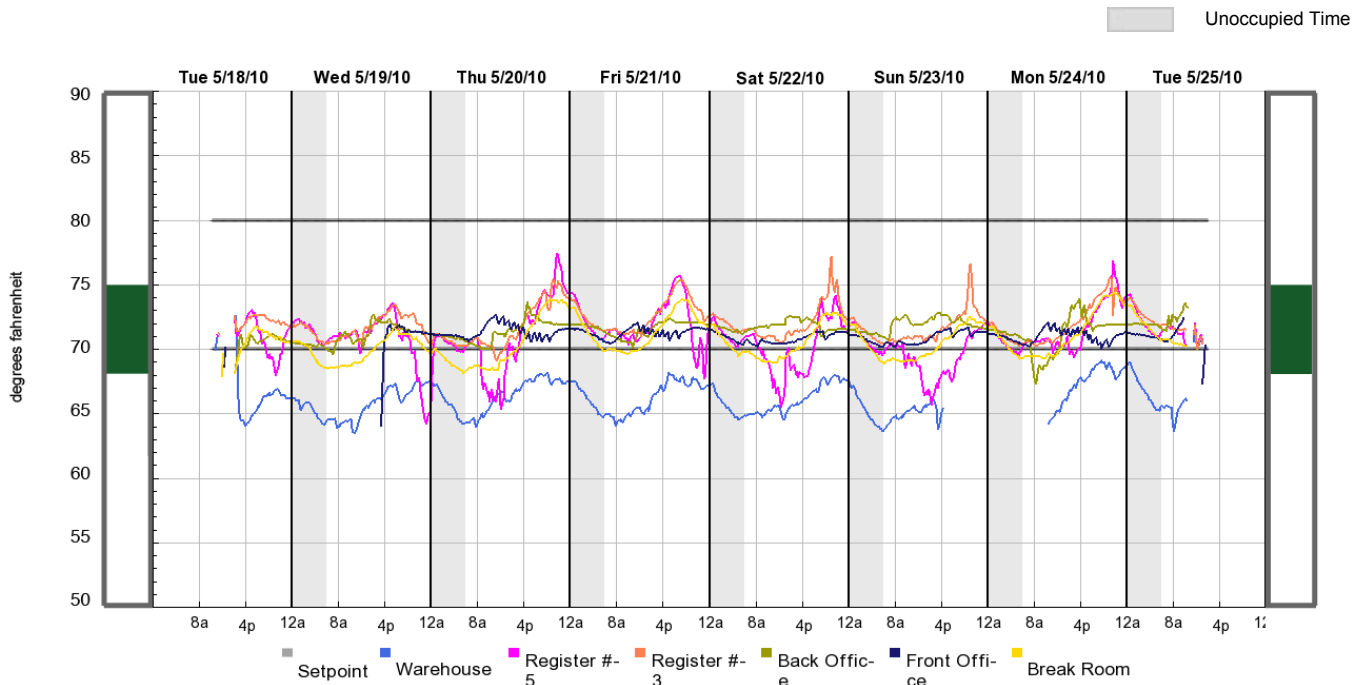
- Increase the amount of heating set back possible during the unoccupied times

Monitor Statistics

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%ToR*	SV†
Warehouse		64	70	66	92%	9
Register #5		65	76	71	21%	8
Register #3		69	75	72	11%	9
Back Office		68	74	71	1%	4
Front Office		70	73	71	3%	8
Break Room		68	74	71	0%	4

These statistics are for occupied times only.

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

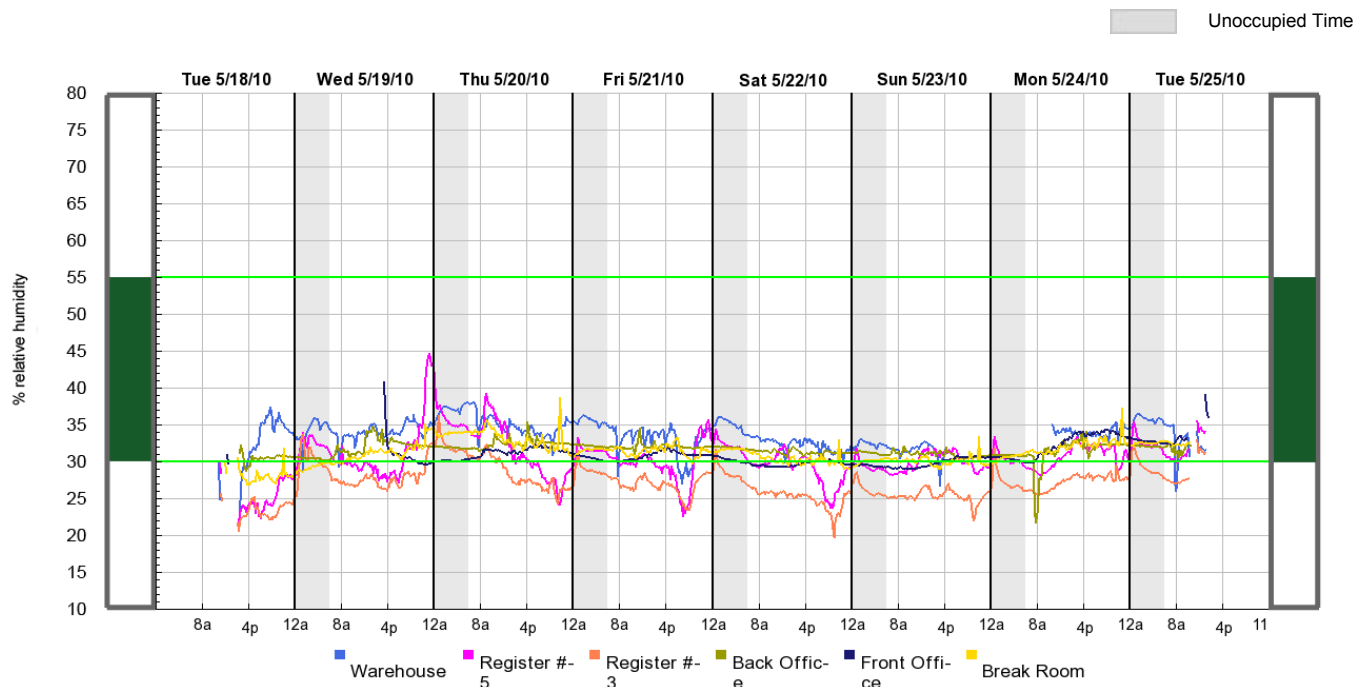
- Add humidification system
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
Warehouse		21	38	33	5%
Register #5		22	45	30	52%
Register #3		17	33	26	87%
Back Office		22	35	32	2%
Front Office		23	41	31	26%
Break Room		19	40	31	22%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

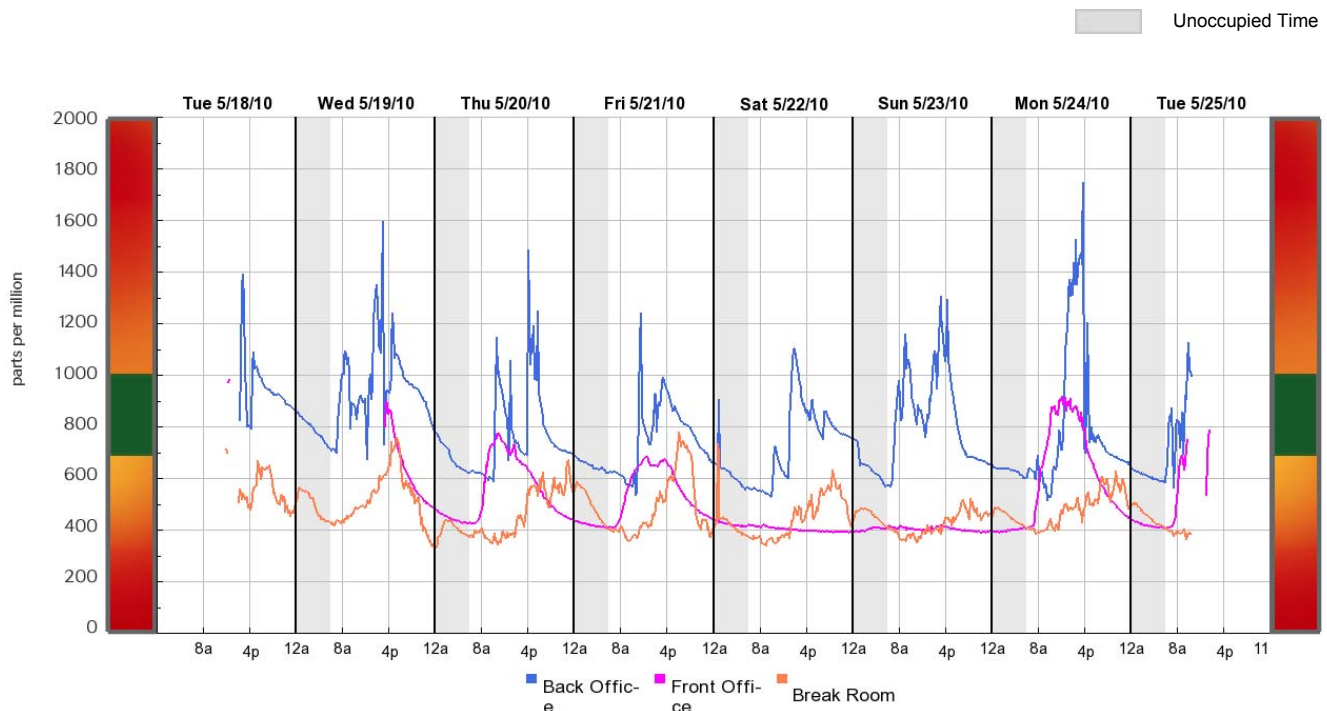
Comfort & Health Recommendations

- Increase the amount of ventilation into the building.

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
Back Office		430	1747	826	46%
Front Office		388	982	532	84%
Break Room		323	778	474	97%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 18 average occupied hours

Energy Savings Opportunities

Our findings indicate your building is not wasting energy on lights.

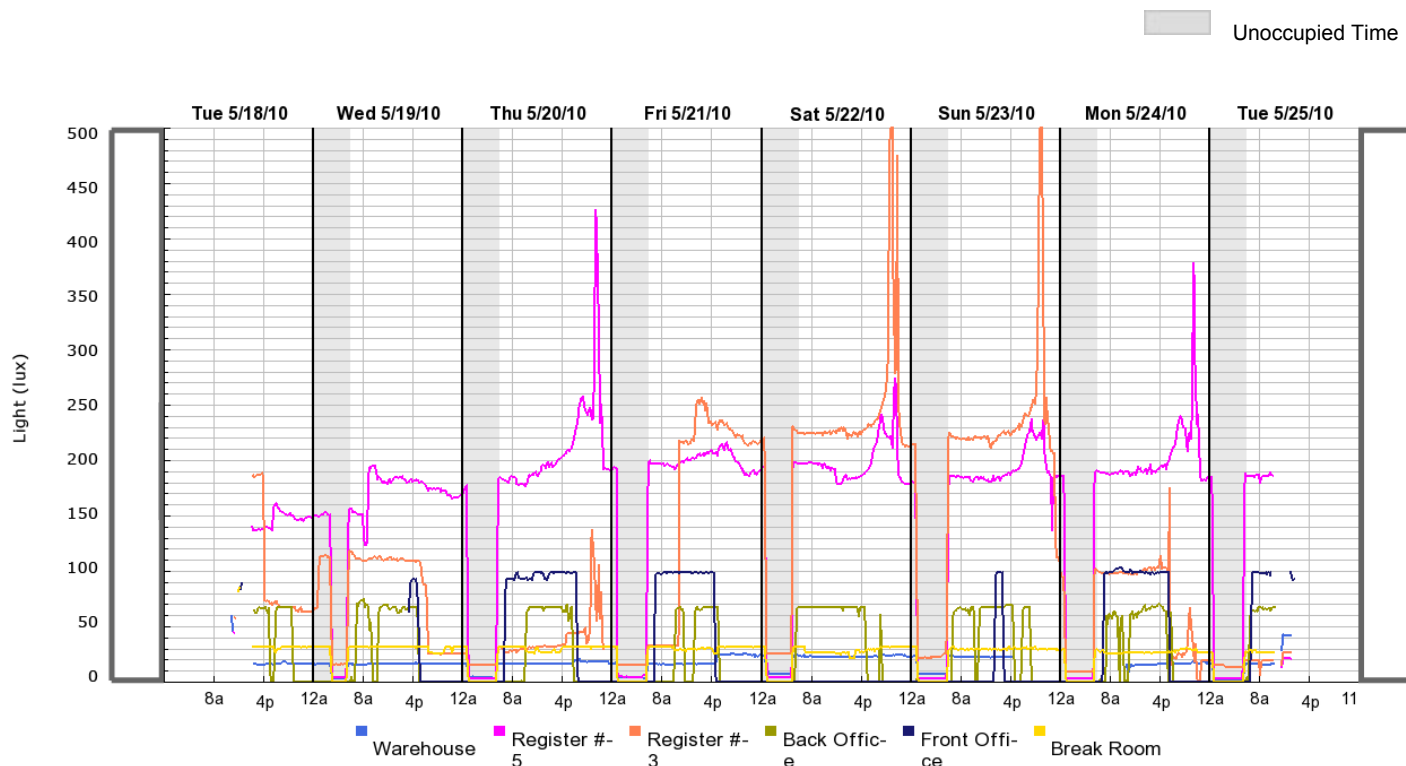
Energy Recommendations Based on Measurements

- No recommendations at this time.

Further Energy Recommendations

- No recommendations at this time.

Monitor	Alert Lvl	Measured On-Time
Warehouse		16. hrs
Register #5		17. hrs
Register #3		11. hrs
Back Office		8.9 hrs
Front Office		7.8 hrs
Break Room		15. hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99508

Outdoor Temperature

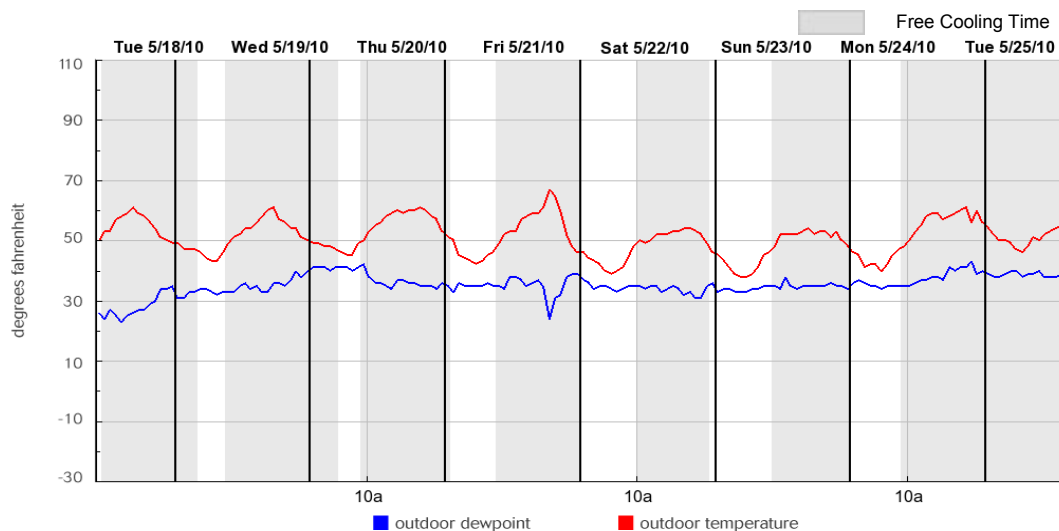
Test Period Avg: 5/18/10 – 5/25/10	Heating Degree Days	Cooling Degree Days
51 °F	14	0

Outdoor Temperature and Dew Point

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dew point during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	XXXX
Contact	XXX
Address	Anchorage, AK 99508
Building Information	
Building Background	Building Usage: Supermarket/Grocery Building Size (sq ft): 23000 # of Stories: 1 Building Status: Existing Construction type: Cement Block LEED Cert.: None Heating System: Packaged Gas Unit Domestic Hot Water: Gas or Other Fuel Economizer: Yes Cooling System:
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
Warehouse	20420
Register #5	20416
Register #3	20415
Back Office	20295
Front Office	20289
Break Room	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	06:00	70	80	Yes
Tue				
Wed				
Thu	23:59	70	80	No
Fri				
Sat				
Sun				

Building Description

Supermarket/Grocery			
Gross Floor Area	23000	Weekly Operating Hours	133
Number of Workers on Main Shift	20	Walk-in Refrigeration/ Freezer Units	6
% Heated	100	% Air-Conditioned	0
Presence of Cooking Facilities	No	Open/Closed Refrigeration/Freezer Cases	11
Registers/PCs	3		

Parking			
Enclosed Floor Area	0	Non-Enclosed Floor Area (w/roof)	0
Open Floor Area (w/o roof)	20000	Weekly Hours of Access	168

Building Controls Information

Current Controls	
Controls Type	Thermostat
Schedule Type	On/Off (Auto fan)
Air Delivery Method	Constant Volume (CV)
Air-Flow Modulation	N/A

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
6/4/09	89120	\$8,258	155	\$0
7/7/09	103840	\$9,618	163	\$0
8/6/09	97440	\$9,160	164	\$0
9/4/09	92640	\$8,795	163	\$0
10/6/09	98400	\$9,213	159	\$0
11/5/09	88800	\$8,423	152	\$0
12/3/09	82720	\$7,971	152	\$0
1/5/10	96640	\$8,158	152	\$0
2/3/10	84640	\$7,347	150	\$0
3/5/10	91520	\$7,929	161	\$0
4/6/10	99200	\$10,157	156	\$0
5/5/10	89760	\$9,440	162	\$0
TOTAL:	1114720	\$104,469	1889	\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
6/15/09 306		\$426
7/15/09 185		\$249
8/15/09 119		\$183
9/15/09 156		\$221
10/15/09 1145		\$1,213
11/15/09 1663		\$1,730
12/15/09 2410		\$2,502
1/15/10 2673		\$2,304
2/15/10 1808		\$1,562
3/15/10 1319		\$1,143
4/15/10 1030		\$905
5/15/10 382		\$344
TOTAL:	13196	\$12,782

Commercial Energy Savings Assessment



Watt Buster



ASSESSMENT SITE

1015

ASSESSMENT PERFORMED BY

Control Contractors – Anchorage

5660 B Street

Anchorage, Alaska 99518



smart building solutions



posi⊕iveENERGY

EXECUTIVE SUMMARY



Energy Use

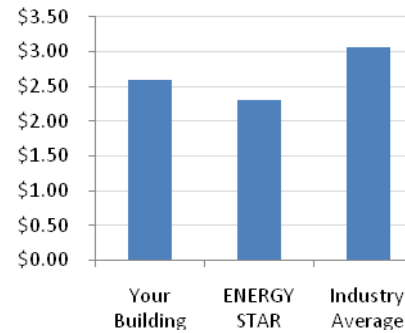
This facility has been revised as having a
EnergyStar Score of 74 of 100

Your building's ENERGY STAR® Energy Performance Rating is 74. Its Energy Use Index is 106 kbtu per sq. ft.

Your building's ENERGY STAR score of 74 ranks you above average versus your peers but falls below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

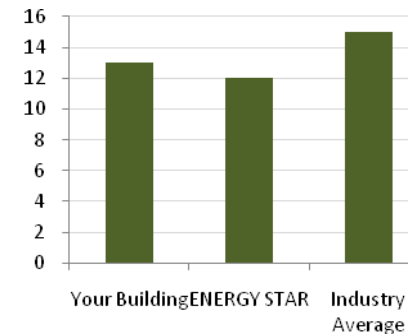


Your building's annual cost per square foot is \$2.27 per sq. ft. overall.

Your building's cost per square foot is \$0.01 more than an ENERGYSTAR® facility average. Your annual cost can be reduced by \$1,078.00 (.8%) or \$5,391.00 over 5 years by achieving an ENERGY STAR score of 75.



Carbon Footprint



Your building's annual carbon footprint is 1648 metric tons of CO2 or 11lbs per sq. ft.

Your building's carbon emissions are 12.1% more than an ENERGY STAR® facility average, and can be reduced by 0 lbs per sq. ft. by achieving an ENERGY STAR score of 75.

You could save up to \$1,078.00 annually or \$5,391 over 5 years by raising your ENERGY STAR score to the level of 75

While a detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR database.

How Does Your Building Use Electricity Today?

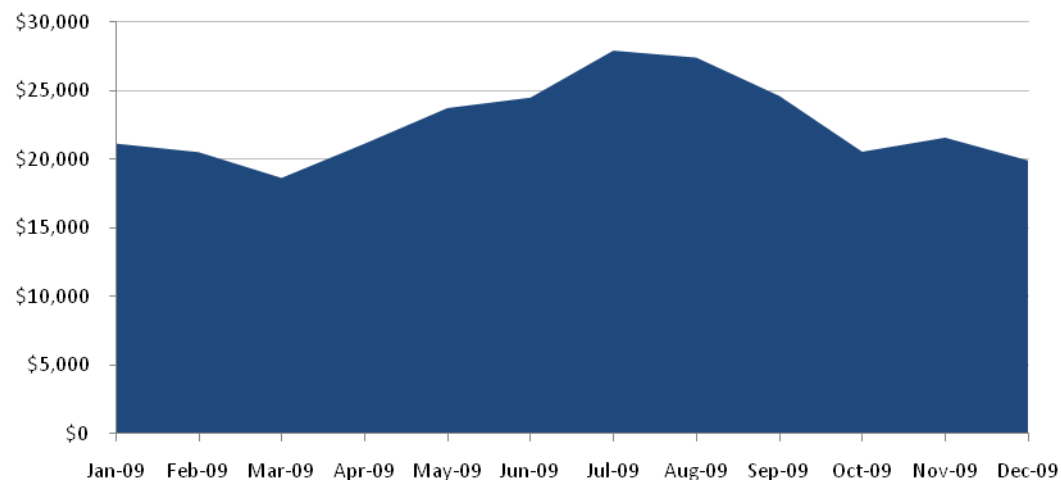
This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

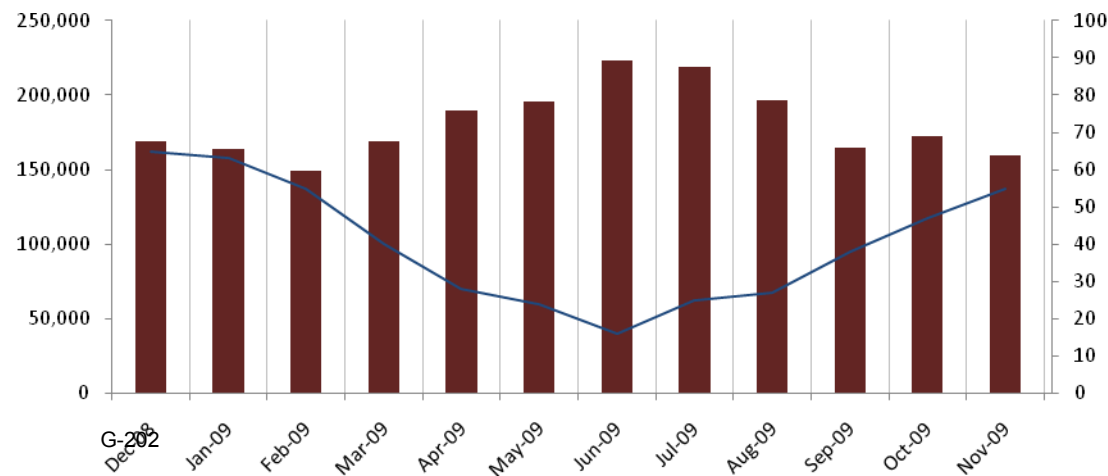
MONTHLY ELECTRICITY COST

Electricity Consumption

- Electricity comprises 78% of your total utility cost, and 49% of your total utility consumption.
- Your Total Spend on electricity is \$271,505, so when considering savings opportunities, remember you can only save some percentage of that total.



ELECTRICITY CONSUMPTION AND OUTSIDE AIRTEMPERATURE



How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

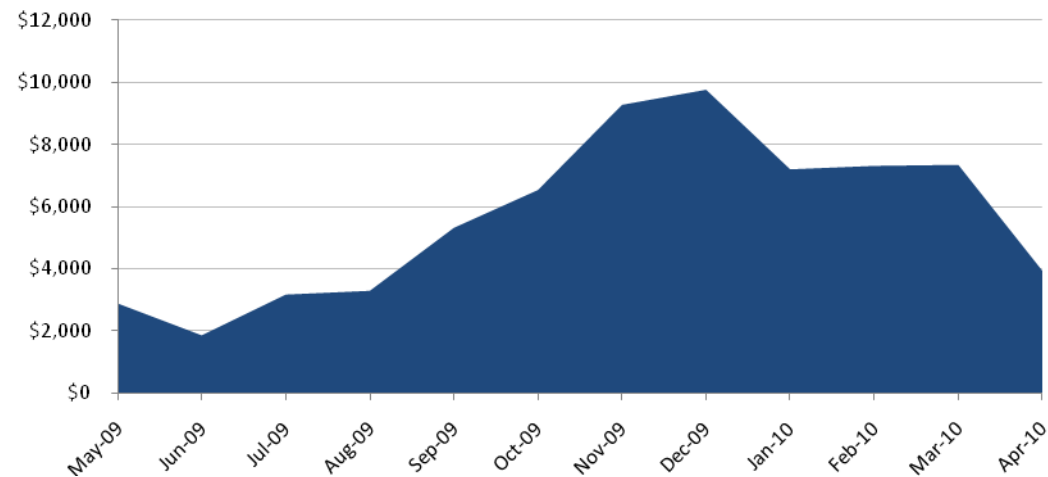
MONTHLY FUEL COST

Utility Bill Analysis

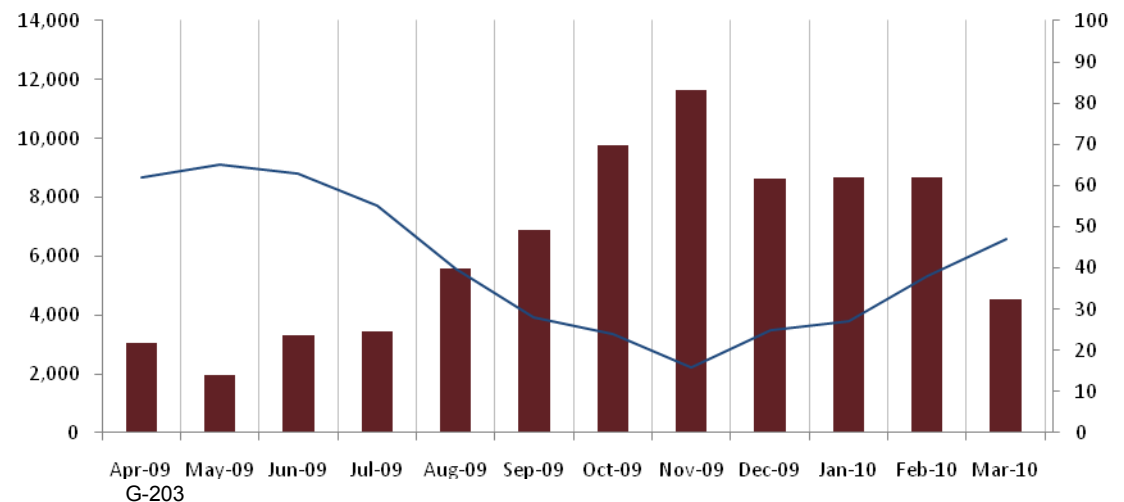
Fuel Consumption

- Fuel comprises 22% of your total utility cost, and 51% of your total utility consumption.

Your Total Spend on Fuel is \$67,900, so when considering savings opportunities, remember you can only save some percentage



FUEL CONSUMPTION AND OUTSIDE AIR TEMPERATURE

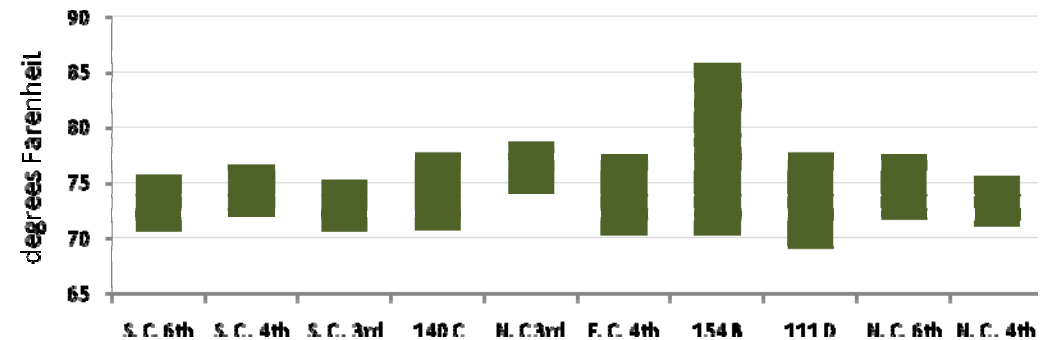


Building Comfort and Ventilation Analysis

This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

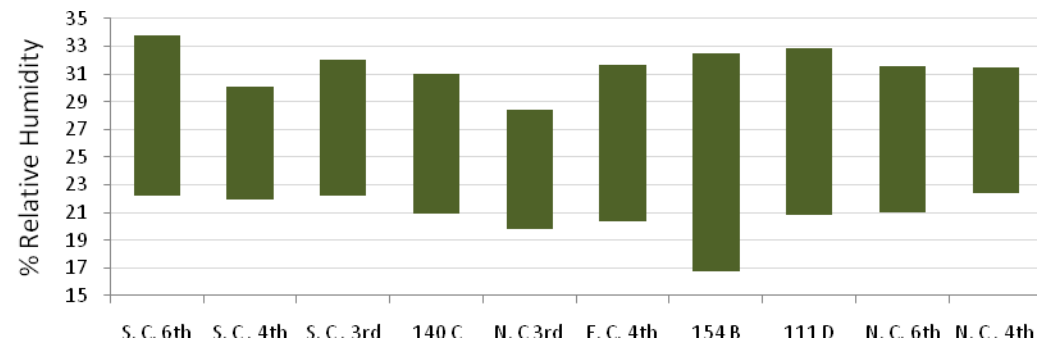
TEMPERATURE FINDINGS

- 3 space(s) were too warm at times
- 0 space(s) were too cool at times
- 4 space(s) had excessive temperature variation



RELATIVE HUMIDITY

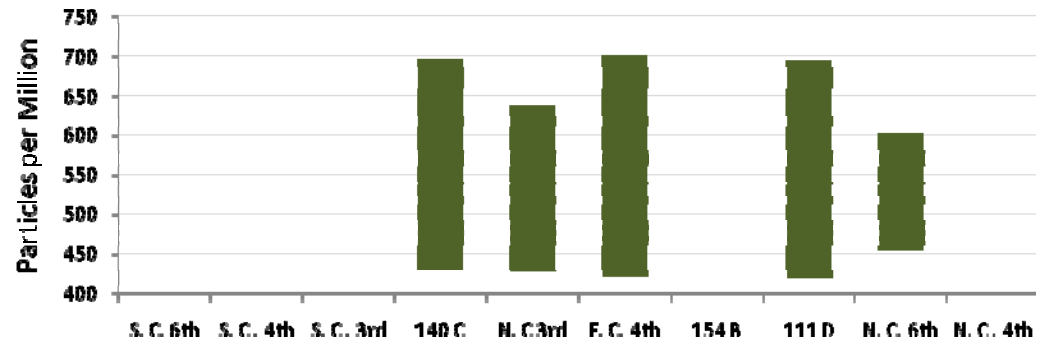
- 4 space(s) had high relative humidity at times
- 2 space(s) had low relative humidity



CARBON DIOXIDE

Your building is over ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating setpoint and raising the cooling setpoint can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

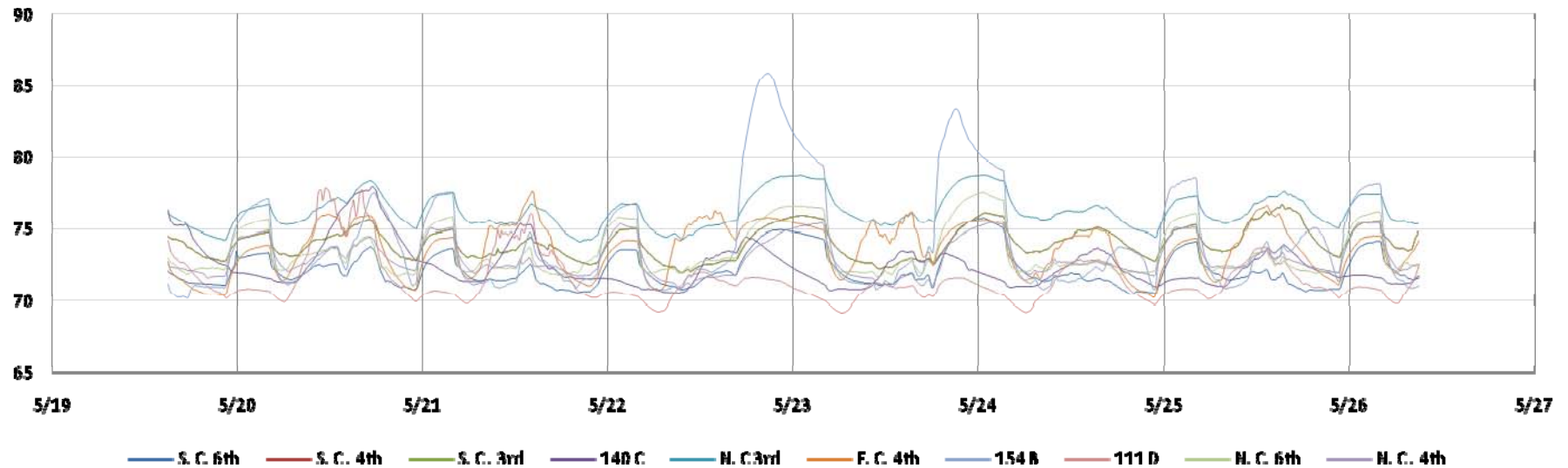
ENERGY SAVING OPPORTUNITIES

Our findings indicate there are several ways to save money by operating your building differently.

Energy Recommendations based on Measurements

- Calibrate thermostats to reduce temperature variation
- Verify the control system is shutting the heat and cooling equipment off
- Move thermostats to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

TIME – TEMPERATURE



Relative Humidity

Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

ANALYSIS AND RECOMMENDATIONS

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

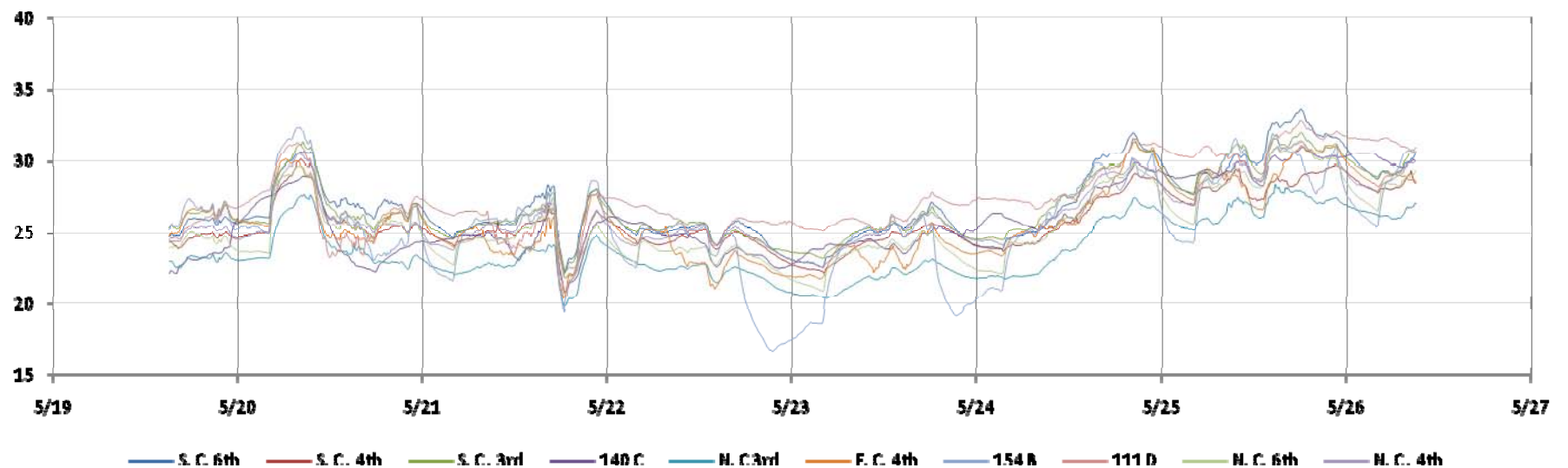
Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

- Add humidification system
- Improve ventilation control

TIME-RELATIVE HUMIDITY



Carbon Dioxide

Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

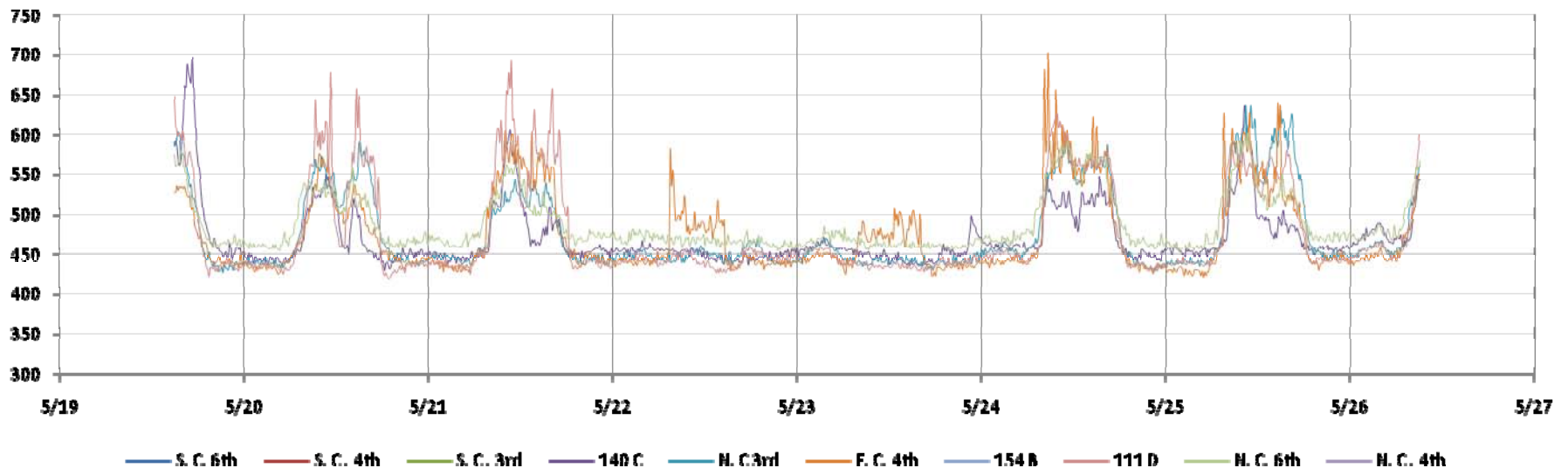
Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building different:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

TIME-CARBON DIOXIDE



Lighting

Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

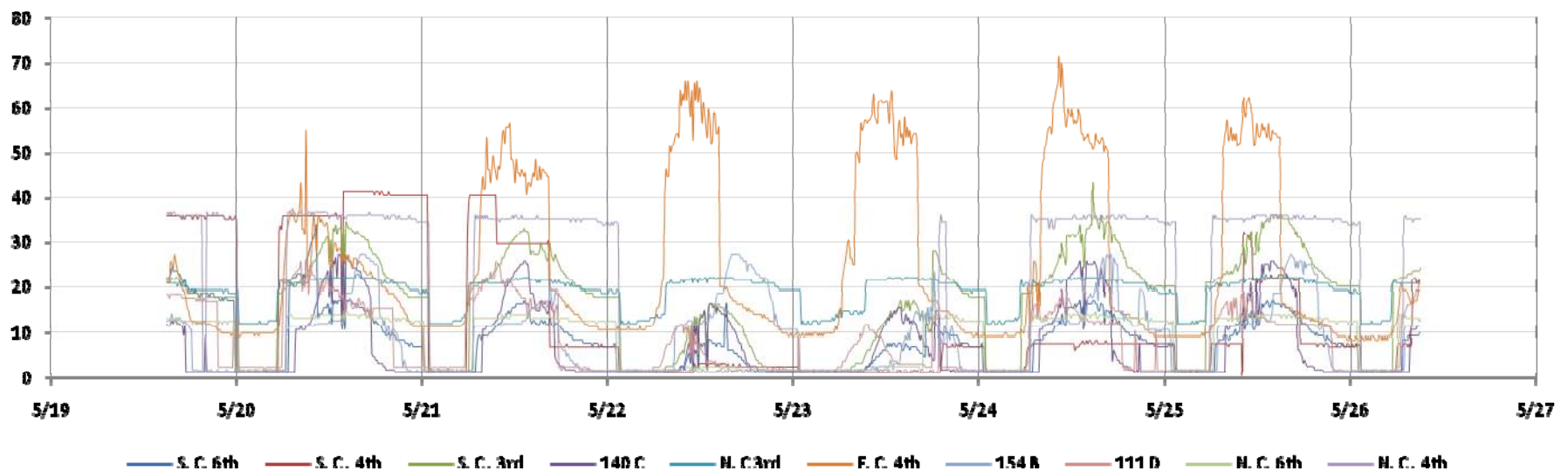
Sources: BOMA, ENERGY STAR, DOE

Energy Saving Opportunities

Energy Recommendations Based on Measurements

- Verify proper lighting levels in each area of the building

TIME LIGHTING





STATEMENT OF ENERGY PERFORMANCE

1015

Building ID: 2350580

For 12-month Period Ending: November 30, 2009¹

Date SEP becomes ineligible: N/A

Date SEP Generated: October 06, 2010

Facility

1015
1015
Anchorage, AK 99508

Facility Owner

N/A

Primary Contact for this Facility

N/A

Year Built: 1980**Gross Floor Area (ft²):** 144,000**Energy Performance Rating² (1-100)** 74**Site Energy Use Summary³**

Electricity - Grid Purchase(kBtu)	7,542,002
Natural Gas (kBtu) ⁴	7,704,754
Total Energy (kBtu)	15,246,756

Energy Intensity⁵

Site (kBtu/ft ² /yr)	106
Source (kBtu/ft ² /yr)	231

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	1,648
---	-------

Electric Distribution Utility

Anchorage Municipality of

National Average Comparison

National Average Site EUI	141
National Average Source EUI	307
% Difference from National Average Source EUI	-25%
Building Type	Office

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) or a Registered Architect (RA) 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 or RA 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	1015	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	Office	Is this an accurate description of the space in question?		☐
Location	1015, Anchorage, AK 99508	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		☐
Office (Office)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	144,000 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.		☐
Weekly operating hours	45 Hours	Is this the total number of hours per week that the Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		☐
Workers on Main Shift	450	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100. The normal worker density ranges between 0.3 and 5.3 workers per 1000 square feet (92.8 square meters)		☐
Number of PCs	475	Is this the number of personal computers in the Office?		☐
Percent Cooled	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐
Parking (Parking)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	189,566 Sq. Ft.	Is this the total square footage of the entire parking area (enclosed + nonenclosed + open floor area)?		☐

Enclosed Floor Area	0 Sq. Ft.	Is this the total square footage of the enclosed garage space? An enclosed garage is defined as having both sides and a roof.	☐
Non-Enclosed Floor Area (w/roof)	0 Sq. Ft.	Is this the total square footage of the nonenclosed garage space? This is typically defined as the portion of the garage above ground (contains no sides but is under a roof).	☐
Open Floor Area (w/o roof)	189,566 Sq. Ft.	Is this the total square footage of the nonenclosed parking area without a roof? This is typically defined as open parking lots or the very top level of an above ground parking garage.	☐
Weekly Hours of Access	168 Hours	Is this the total number of hours per week when it is possible for a vehicle to enter or exit?	☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Anchorage Municipality of

Fuel Type: Electricity		
Meter: Electricity Meter (kWh (thousand Watt-hours)) Space(s): Entire Facility Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
10/28/2009	11/24/2009	172,528.00
09/25/2009	10/27/2009	164,312.00
08/26/2009	09/24/2009	196,856.00
07/25/2009	08/25/2009	219,128.00
06/27/2009	07/24/2009	223,176.00
05/27/2009	06/26/2009	195,800.00
04/24/2009	05/26/2009	189,728.00
03/26/2009	04/23/2009	168,984.00
02/26/2009	03/25/2009	149,072.00
01/28/2009	02/25/2009	164,112.00
12/28/2008	01/28/2009	169,104.00
Electricity Meter Consumption (kWh (thousand Watt-hours))		2,012,800.00
Electricity Meter Consumption (kBtu (thousand Btu))		6,867,673.60
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		6,867,673.60
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☐
Fuel Type: Natural Gas		
Meter: Natural Gas Meter (ccf (hundred cubic feet)) Space(s): Entire Facility		
Start Date	End Date	Energy Use (ccf (hundred cubic feet))
10/17/2009	11/13/2009	6,882.00
09/19/2009	10/16/2009	5,598.00
08/22/2009	09/18/2009	3,460.00
07/18/2009	08/21/2009	3,331.00
06/20/2009	07/17/2009	1,948.00
05/16/2009	06/19/2009	3,032.00
04/18/2009	05/15/2009	4,305.00
03/07/2009	04/17/2009	12,187.00
02/12/2009	03/06/2009	8,733.00
01/08/2009	02/11/2009	12,110.00
12/07/2008	01/07/2009	7,682.00

Natural Gas Meter Consumption (ccf (hundred cubic feet))	69,268.00
Natural Gas Meter Consumption (kBtu (thousand Btu))	7,127,677.20
Total Natural Gas Consumption (kBtu (thousand Btu))	7,127,677.20
Is this the total Natural Gas consumption at this building including all Natural Gas 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.	☐
--	--------------------------

On-Site Solar and Wind Energy

Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.	☐
---	--------------------------

Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA 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
1015
1015
Anchorage, AK 99508

Facility Owner
N/A

Primary Contact for this Facility
N/A

General Information

1015	
Gross Floor Area Excluding Parking: (ft ²)	144,000
Year Built	1980
For 12-month Evaluation Period Ending Date:	November 30, 2009

Facility Space Use Summary

Office		Parking	
Space Type	Office	Space Type	Parking
Gross Floor Area(ft ²)	144,000	Gross Floor Area(ft ²)	189,566
Weekly operating hours	45	Enclosed Floor Area	0
Workers on Main Shift	450	Non-Enclosed Floor Area (w/roof)	0
Number of PCs	475	Open Floor Area (w/o roof)	189,566
Percent Cooled	50% or more	Weekly Hours of Access	168
Percent Heated	50% or more		

Energy Performance Comparison

Performance Metrics	Evaluation Periods		Comparisons		
	Current (Ending Date 11/30/2009)	Baseline (Ending Date 11/30/2009)	Rating of 75	Target	National Average
Energy Performance Rating	74	74	75	75	50
Energy Intensity					
Site (kBtu/ft ²)	106	106	106	106	141
Source (kBtu/ft ²)	231	231	230	230	307
Energy Cost					
\$/year	\$ 326,184.70	\$ 326,184.70	\$ 325,106.45	\$ 325,106.45	\$ 433,023.44
\$/ft ² /year	\$ 2.27	\$ 2.27	\$ 2.26	\$ 2.26	\$ 3.01
Greenhouse Gas Emissions					
MtCO ₂ e/year	1,648	1,648	1,643	1,643	2,188
kgCO ₂ e/ft ² /year	11	11	11	11	15

More than 50% of your building is defined as Office. 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.

Statement of Energy Performance

2009

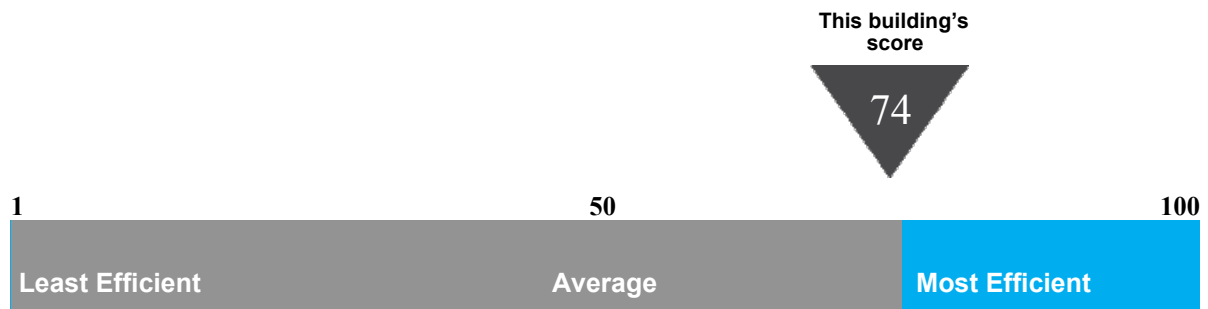
1015

1015

Anchorage, AK 99508

Portfolio Manager Building ID: 2350580

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit energystar.gov/benchmark.



This building uses 231 kBtu per square foot per year.*

*Based on source energy intensity for the 12 month period ending November 2009

Buildings with a score of 75 or higher may qualify for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at energystar.gov

Date of certification



Date Generated: 10/06/2010

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1016

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

CHUGACH
POWERING ALASKA'S FUTURE

CONTROL
CONTRACTORS

smart building solutions



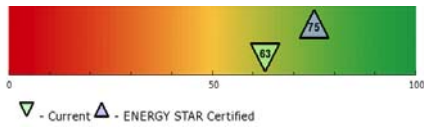
positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

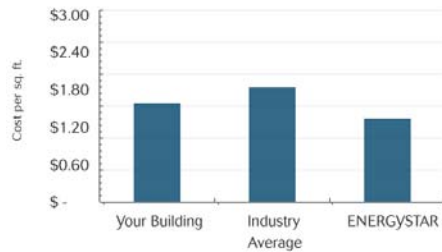


Your building's ENERGY STAR® Energy Performance Rating is **63**. Its Energy Use Index is **90 kbtu per sq. ft.**

Your building's ENERGY STAR score of 63 ranks you above average versus your peers, but your building may still have good opportunity to raise your ENERGY STAR score.



Cost

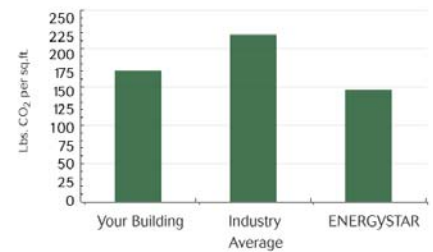


Your building's annual cost per square foot is **\$1.53 per sq. ft.** overall.

Your annual cost can be reduced by \$14,501 or 36.8% by achieving an ENERGY STAR score of 90.



Carbon Footprint



Your building's annual carbon footprint is **199 metric tons of CO₂** or **17.01 lbs per sq. ft.**

Your building's carbon emissions are 57.9% more than an energy efficient facility, and can further be reduced by 6 lbs per sq. ft. by achieving an ENERGY STAR score of 90.

You could save up to **\$14,501** annually or **\$72,505** over 5 years by raising your ENERGY STAR score to the level of 90.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Your building is controlled well
- Your building is over-ventilated



How Does Your Building Use Electricity Today?

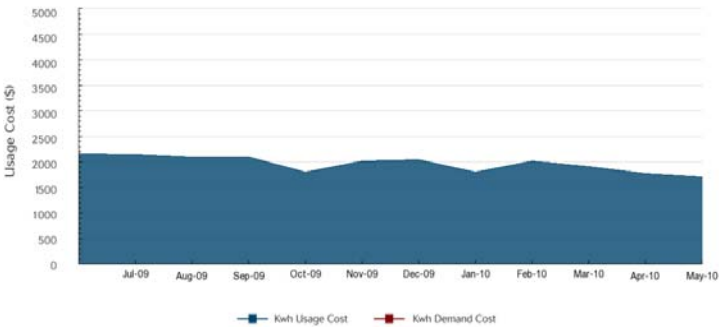
This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

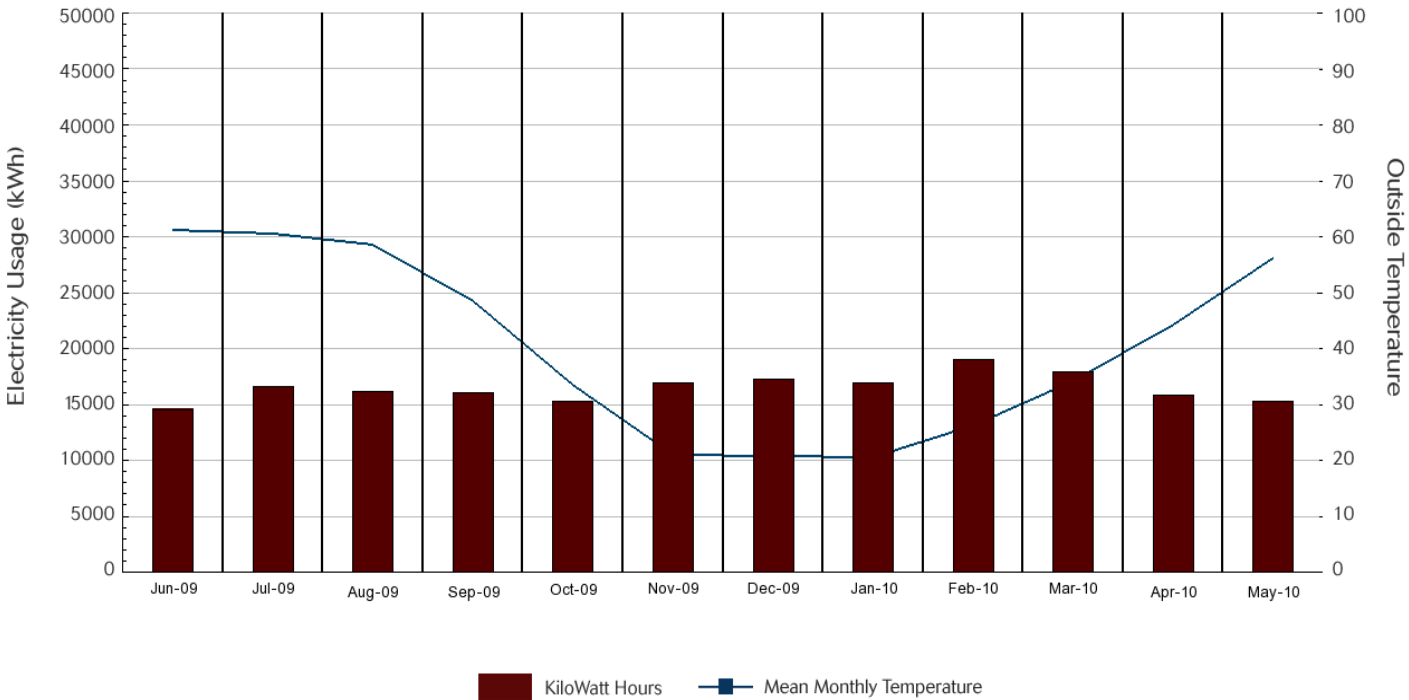
Electricity Consumption

- Electricity comprises 59.7% of your total utility cost, and 28.9% of your total utility consumption.
- Your Total Spend on electricity is \$23,567, so when considering savings opportunities, remember you can only save some percentage of that total.

Monthly Electricity Costs



Electricity Consumption and Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

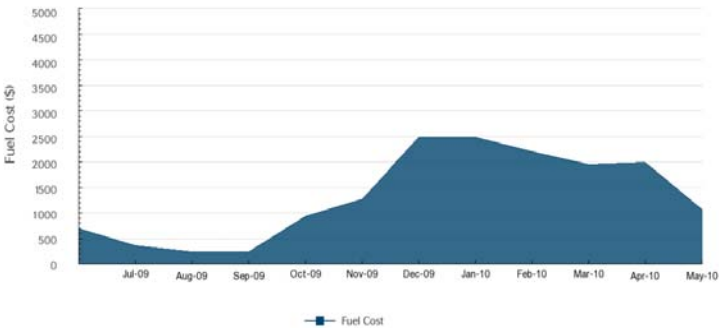


Monthly Fuel Costs

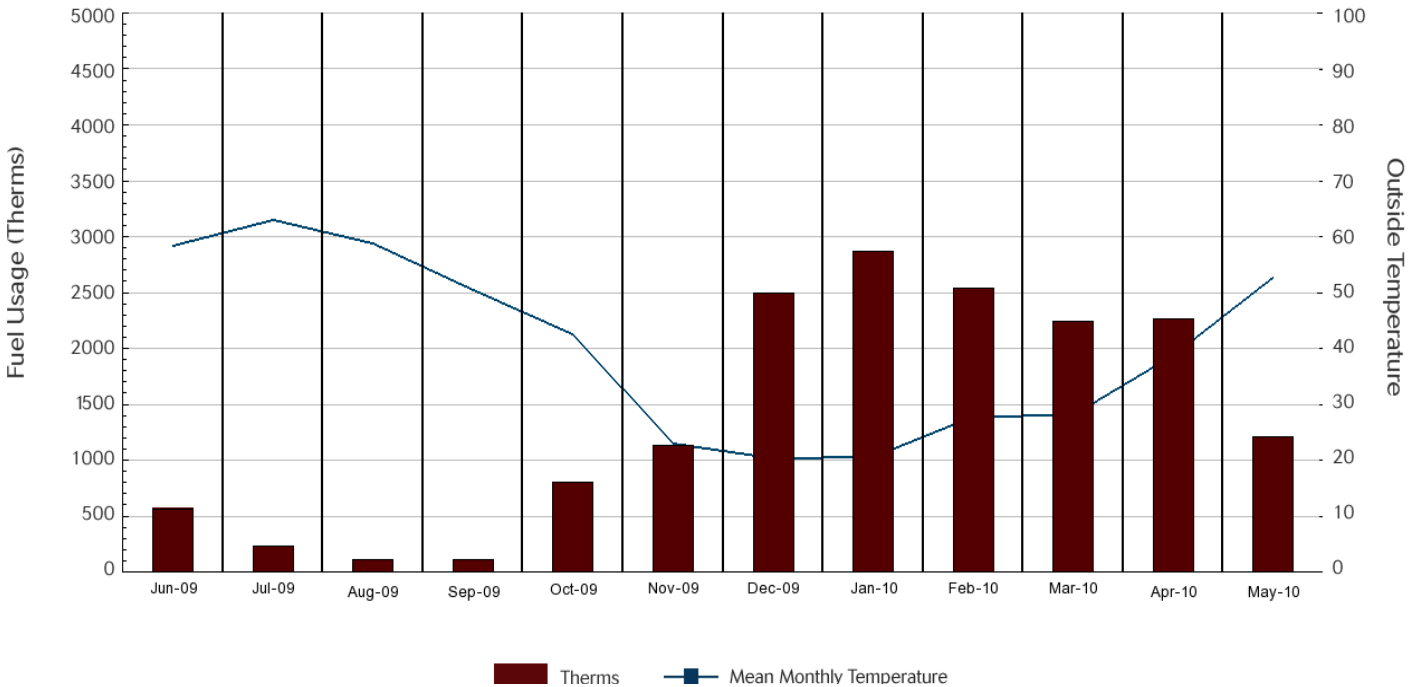
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 40.3% of your total utility cost, and 71.1% of your total utility consumption.
- Your Total Spend on Fuel is \$15,881, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption And Outside Air Temperature



Building Comfort and Ventilation Analysis

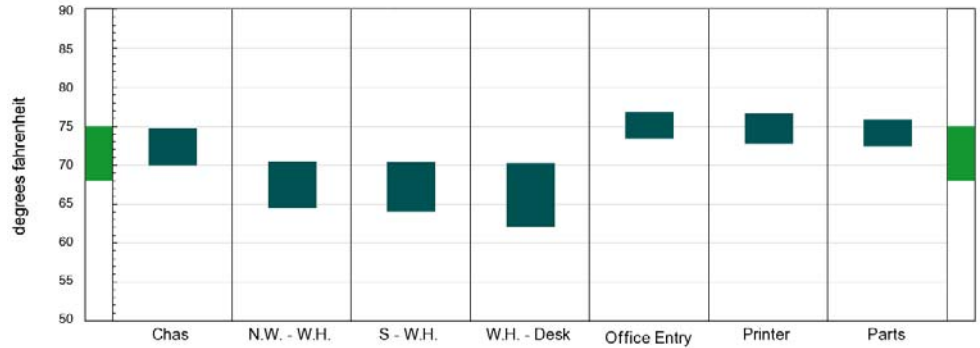
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building is controlled well with little opportunity for savings.

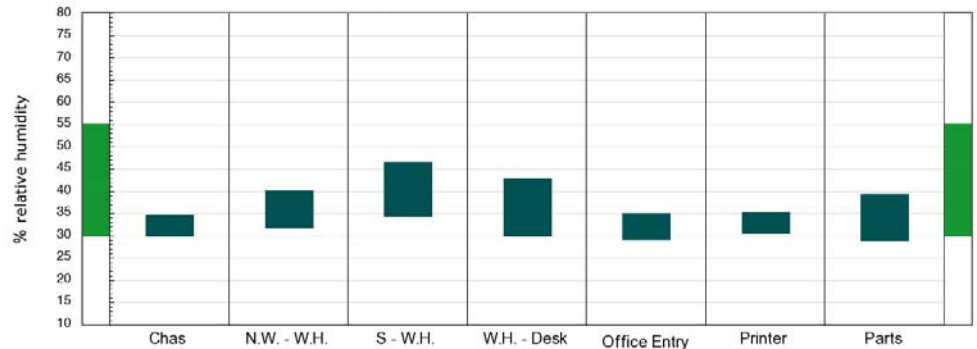
- 3 space(s) were too warm at times
- 3 space(s) were too cool at times
- 3 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 2 space(s) had low relative humidity at times

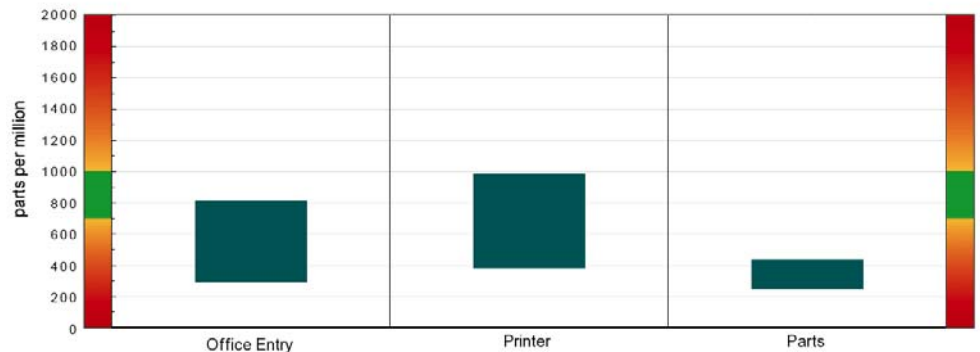


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 3 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: $\pm 1^\circ\text{F}$]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating setpoint and raising the cooling setpoint can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating Setpoint is 60 / 60
	Occupied/Unoccupied Cooling Setpoint is 78 / 78

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Monitor Statistics

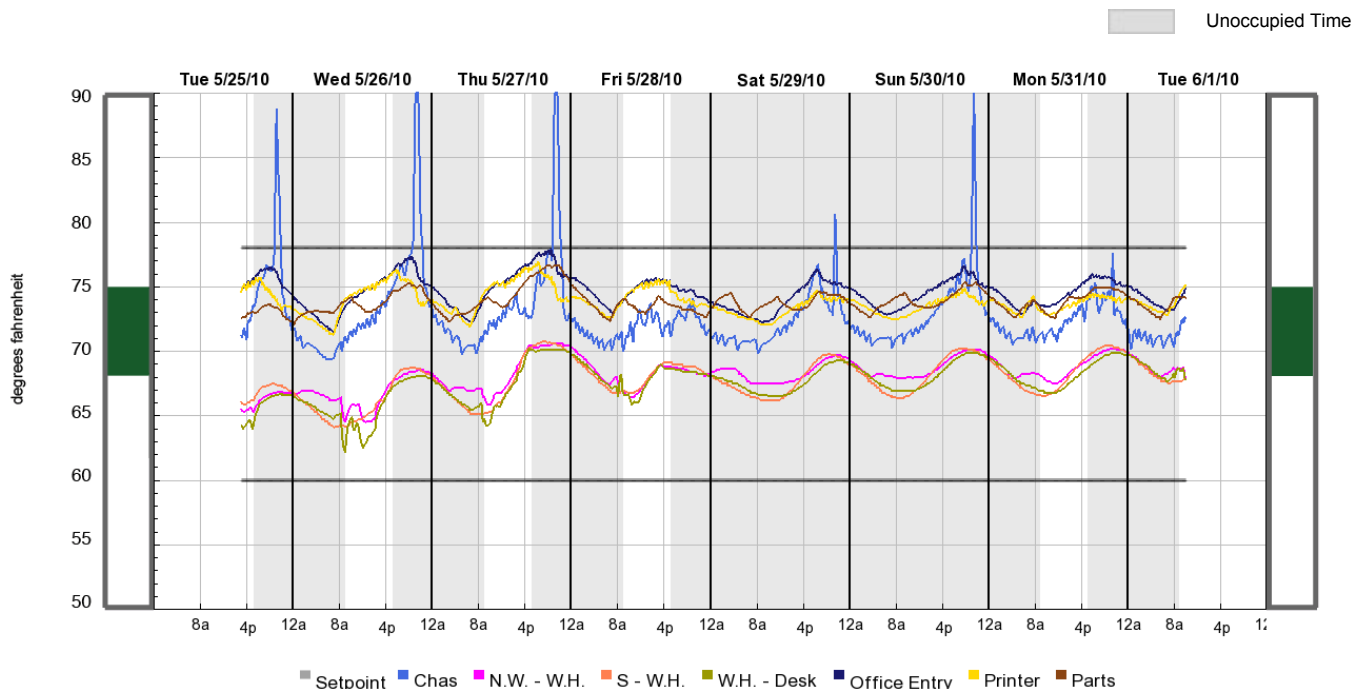
Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%To Pt	SV†
Chas		70	75	72	0%	3
N.W. - W.H.		65	70	67	59%	3
S - W.H.		64	70	67	65%	4
W.H. - Desk		63	70	67	67%	4
Office Entry		73	77	75	47%	2
Printer		73	77	75	42%	2
Parts		73	76	74	8%	2

These statistics are for occupied times only.

* % Time out of Range † Spread Value

Further Comfort & Energy Recommendations

•



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

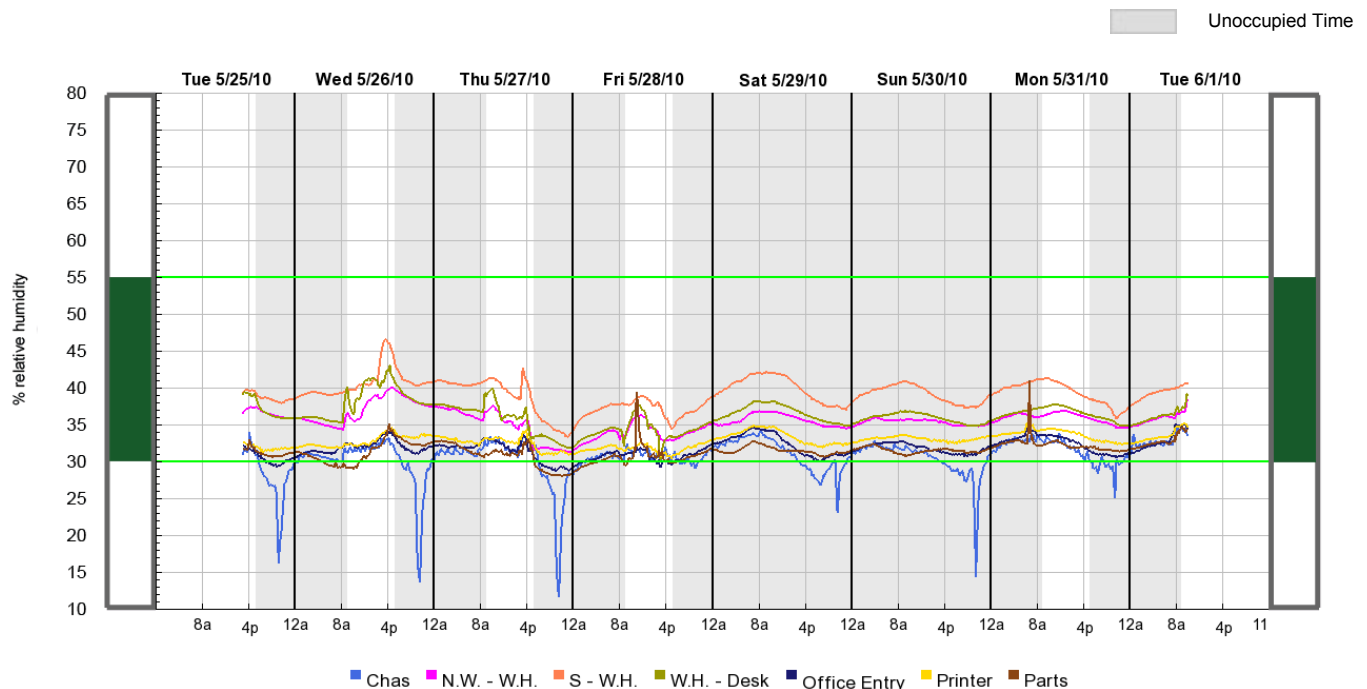
- Add humidification system
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	%
Chas		30	35	32	1%
N.W. - W.H.		32	40	36	0%
S - W.H.		34	47	40	0%
W.H. - Desk		30	43	37	0%
Office Entry		29	35	32	6%
Printer		30	35	33	0%
Parts		29	39	32	9%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

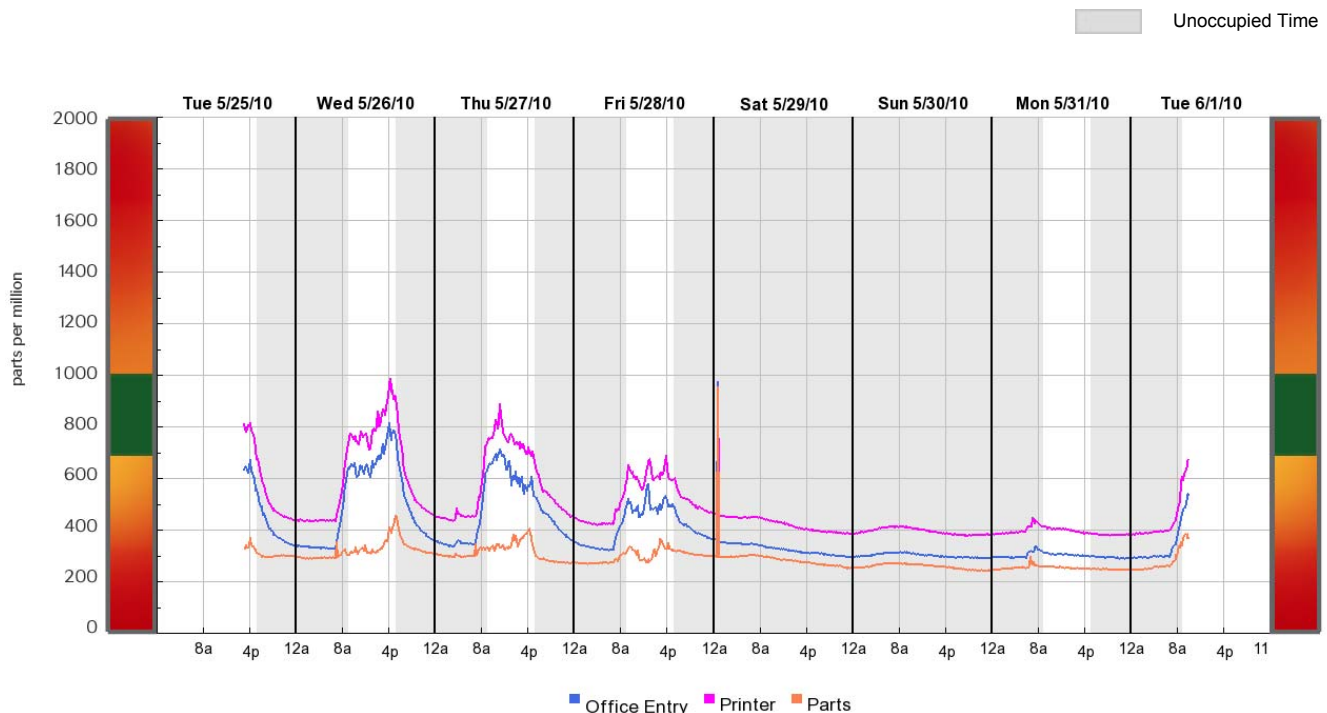
Comfort & Health Recommendations

- No recommendations at this time

Monitor	Alert Lvl	Min	Max	Avg	%
Office Entry		295	814	531	93%
Printer		383	986	651	54%
Parts		246	435	316	99%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 5.7 average occupied hours

Energy Savings Opportunities

Our findings indicate your building is not wasting energy on lights.

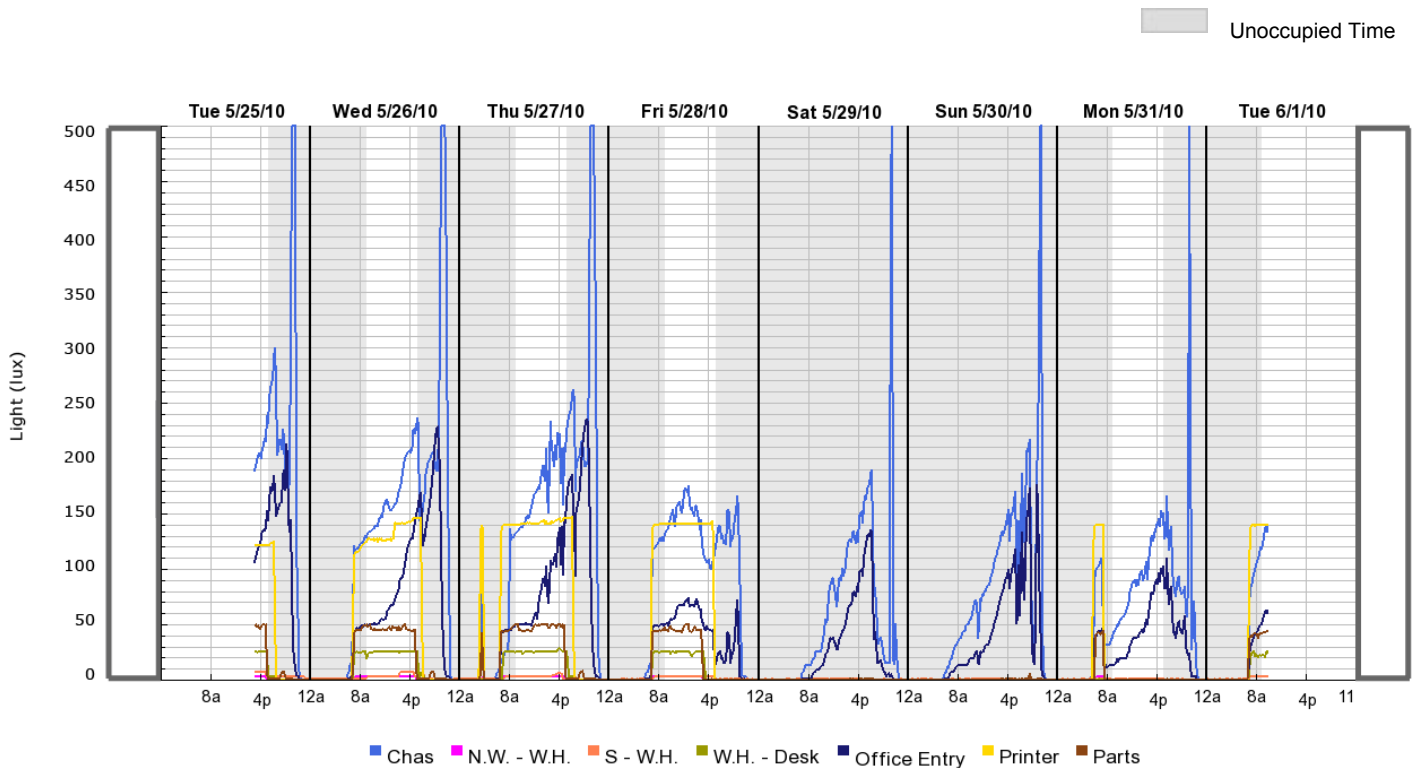
Energy Recommendations Based on Measurements

- No recommendations at this time.

Further Energy Recommendations

- No recommendations at this time.

Monitor	Alert Lvl	Measured On-Time
Chas		7.5 hrs
N.W. - W.H.		0.4 hrs
S - W.H.		3.2 hrs
W.H. - Desk		4.6 hrs
Office Entry		1.9 hrs
Printer		7.2 hrs
Parts		3.9 hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99518

Outdoor Temperature

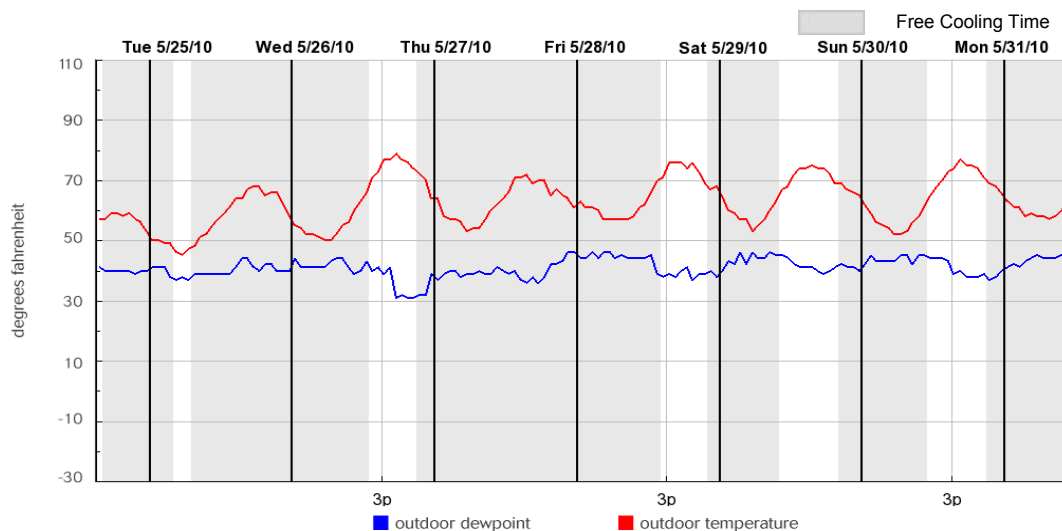
Test Period Avg: 5/25/10 – 6/1/10	Heating Degree Days	Cooling Degree Days
62 °F	3	0

Outdoor Temperature and Dew Point

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dew point during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	xxxxxx
Contact	xxxxx
Address	xxxx Anchorage, AK 99518
Building Information	
Building Background	Building Usage: Office Building Size (sq ft): 25785 # of Stories: 1 Building Status: Existing Construction type: Masonry LEED Cert.: None Heating System: None Domestic Hot Water: Gas or Other Fuel Economizer: Yes Cooling System: None
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
Chas	20431
N.W. - W.H.	20420
S - W.H.	20416
W.H. - Desk	20415
Office Entry	20293
Printer	20289
Parts	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	09:00	60	78	Yes
Tue				
Wed	17:00	60	78	No
Thu				
Fri				

Building Description

Office			
Gross Floor Area	13785	Weekly Operating Hours	50
Number of Workers on Main Shift	73	Number of PCs	70
Office Air-Conditioned	50% or more	Office Heated	50% or more

Warehouse (Unrefrigerated)			
Gross Floor Area	12000	Number of Workers on Main Shift	7
Weekly Operating Hours	65	% Air-Conditioned	0
% Heated	50	Walk-in Refrigeration/Freezer Units	0

Parking			
Enclosed Floor Area	0	Non-Enclosed Floor Area (w/roof)	0
Open Floor Area (w/o roof)	12500	Weekly Hours of Access	168

Building Controls Information

Current Controls	
Controls Type	Thermostat
Schedule Type	On/Off (Auto fan)
Air Delivery Method	Constant Volume (CV)
Air-Flow Modulation	N/A

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
6/16/09	14505	\$2,159		\$0
7/16/09	16570	\$2,150		\$0
8/4/09	16131	\$2,099		\$0
9/8/09	16088	\$2,092		\$0
10/16/09	15227	\$1,806		\$0
11/16/09	16958	\$2,011		\$0
12/16/09	17290	\$2,037		\$0
1/15/10	16869	\$1,804		\$0
2/16/10	18990	\$2,017		\$0
3/16/10	17957	\$1,912		\$0
4/16/10	15827	\$1,771		\$0
5/16/10	15220	\$1,709		\$0
TOTAL:	197632	\$23,567		\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
6/3/09 560		\$689
7/3/09 236		\$364
8/3/09 108		\$236
9/3/09 106		\$234
10/3/09 798		\$928
11/3/09 1137		\$1,268
12/3/09 2494		\$2,481
1/3/10 2867		\$2,481
2/3/10 2539		\$2,200
3/3/10 2240		\$1,944
4/3/10 2266		\$1,988
5/3/10 1204		\$1,068
TOTAL:	16555	\$15,881

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE

1017

ASSESSMENT PERFORMED BY

Control Contractors – Anchorage

5660 B Street

Anchorage, Alaska 99518



smart building solutions

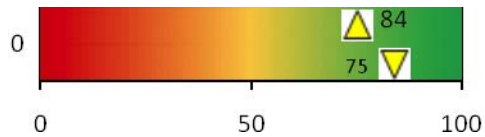


posi⊕iveENERGY

EXECUTIVE SUMMARY



Energy Use

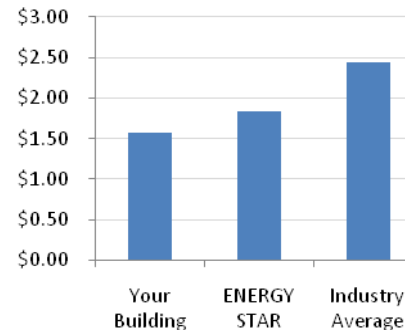


Your building's ENERGY STAR® Energy Performance Rating is 84. Its Energy Use Index is 104 kbtu per sq. ft.

Your building's ENERGY STAR score of 84 ranks you above average versus your peers, and meets the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

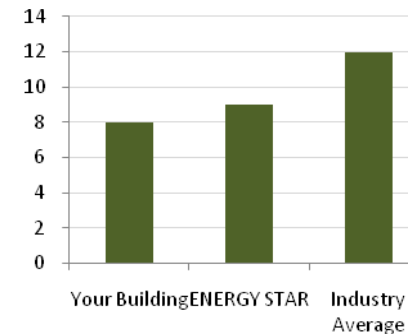


Your building's annual cost per square foot is \$1.57 per sq. ft. overall.

Your building's cost per square foot is \$0.16 more than a building with an ENERGY STAR score of 90. Your annual cost can be reduced by \$5,818 (10.3%) or \$29,095 over 5 years by achieving an ENERGY STAR score of 90.



Carbon Footprint



Your building's annual carbon footprint is 297 metric tons of CO2 or 8lbs per sq. ft.

Your building's carbon emissions are 11.7% more than a building with an ENERGY STAR score of 90 and can be reduced by 1lb per sq. ft. by achieving an ENERGY STAR score of 90.

You could save up to **\$5,818** annually or **\$29,095** over 5 years by raising your ENERGY STAR score to the level of 90

While a detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR database.

How Does Your Building Use Electricity Today?

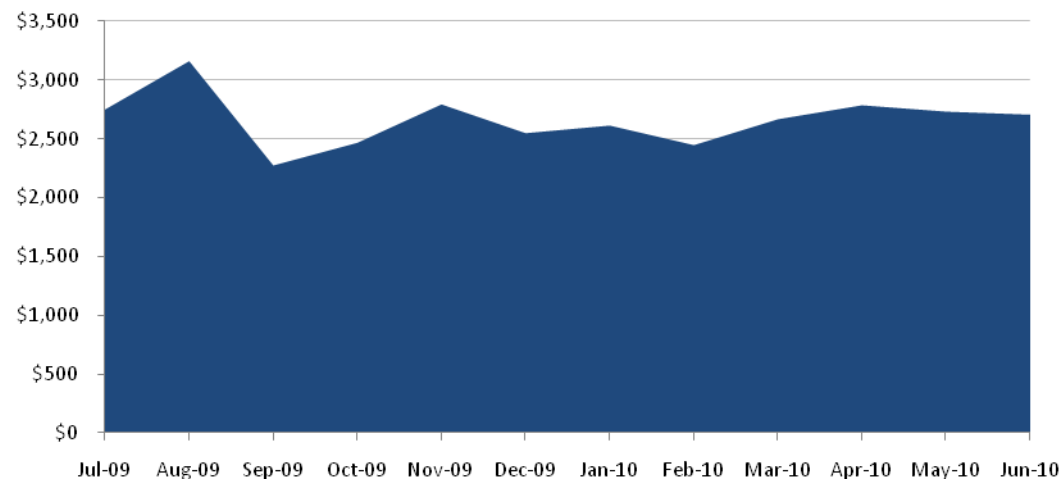
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MONTHLY ELECTRICTY COST

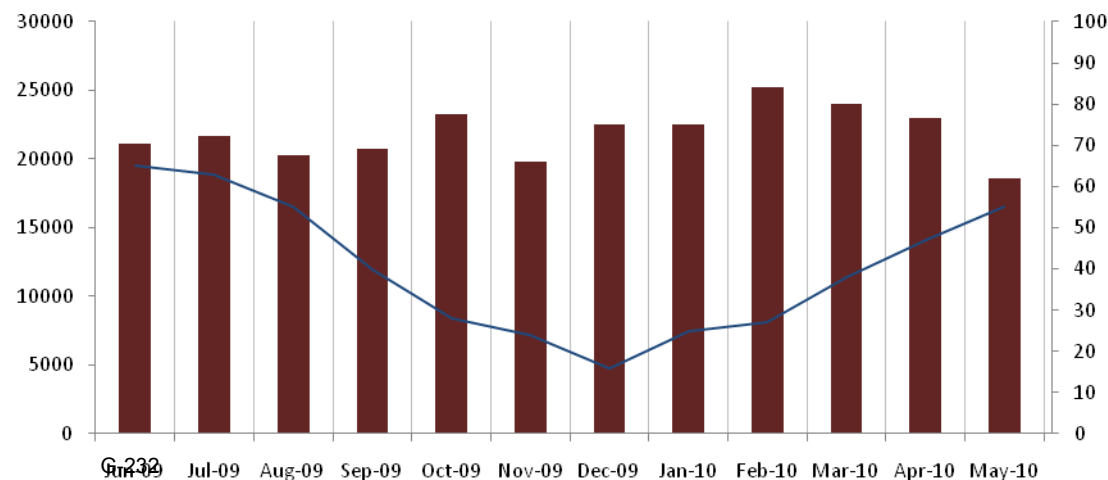
Utility Bill Analysis

Electricity Consumption

- Electricity comprises 55% of your total utility cost, and 24.0% of your total utility consumption.
- Your Total Spend on electricity is \$31,595.79

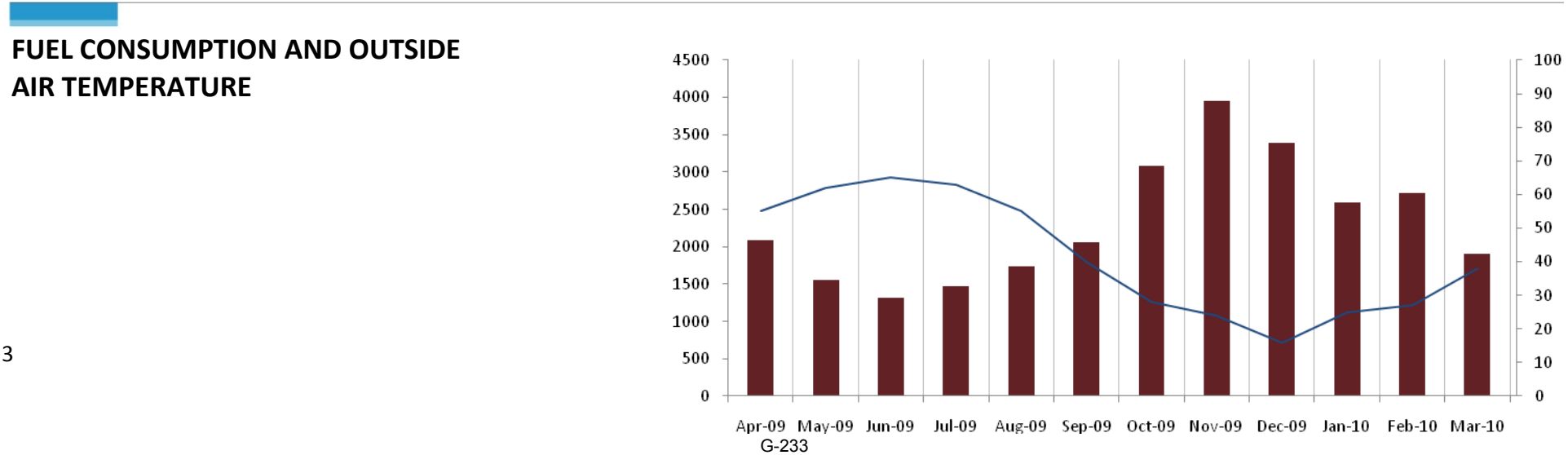
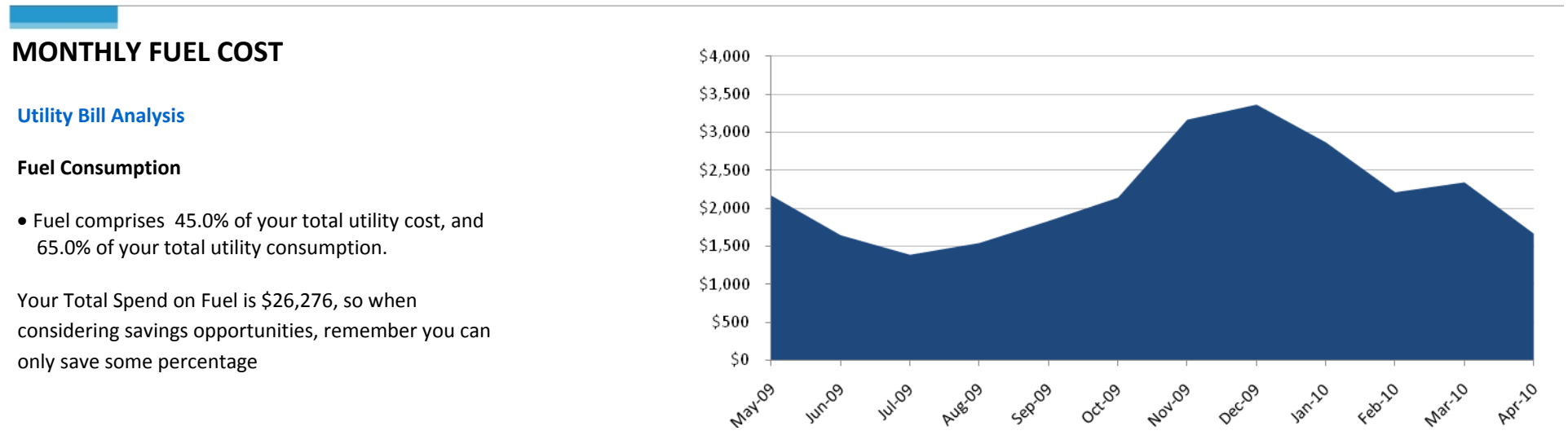


ELECTRICITY CONSUMPTION AND OUTSIDE AIR TEMPERATURE



How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

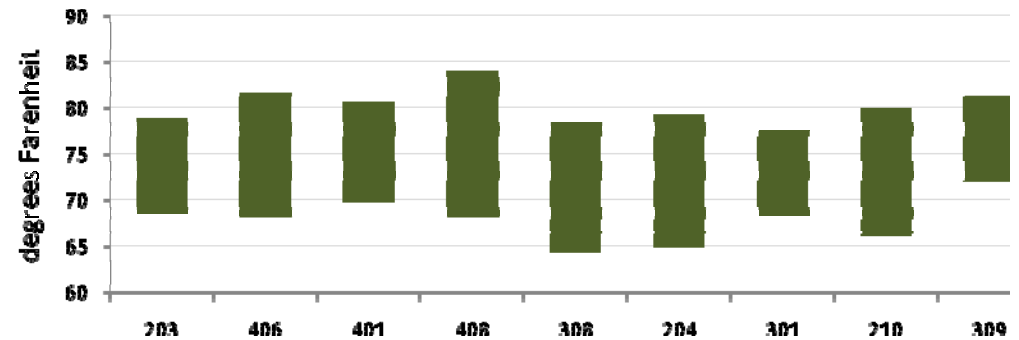


Building Comfort and Ventilation Analysis

This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

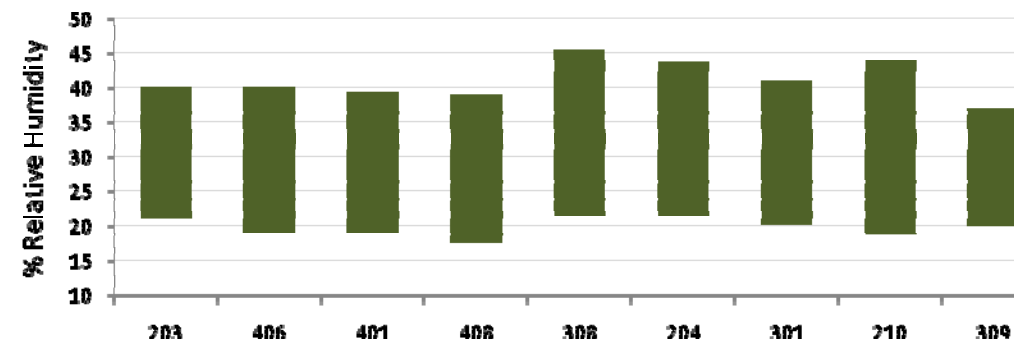
TEMPERATURE FINDINGS

- 4 space(s) were too warm at times
- 1 space(s) were too cool at times
- 5 space(s) had excessive temperature variation



RELATIVE HUMIDITY

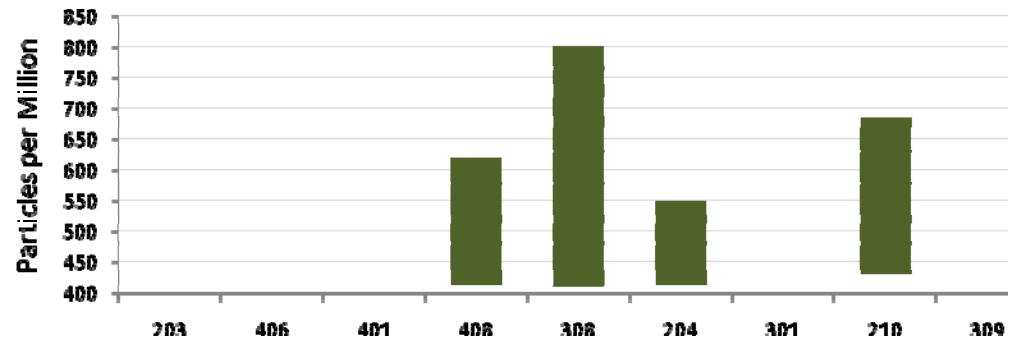
- 0 space(s) had high relative humidity at times
- 0 space(s) had low relative humidity



CARBON DIOXIDE

Your building is over ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating setpoint and raising the cooling setpoint can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

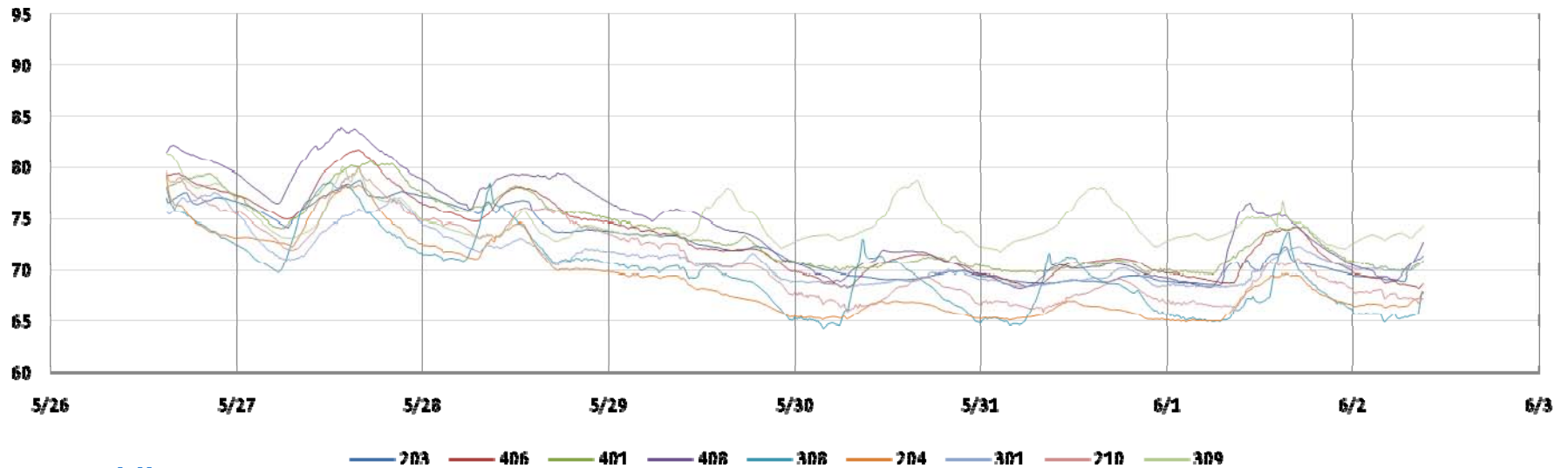
ENERGY SAVING OPPORTUNITIES

Our findings indicate there are several ways to save money by operating your building differently.

Energy Recommendations based on Measurements

- Calibrate thermostats to reduce temperature variation
- Verify the control system is shutting the heat and cooling equipment off during un-occupied times
- Balance air flow within duct system to reduce temperature variation

TIME – TEMPERATURE



Relative-Humidity

Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

ANALYSIS AND RECOMMENDATIONS

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

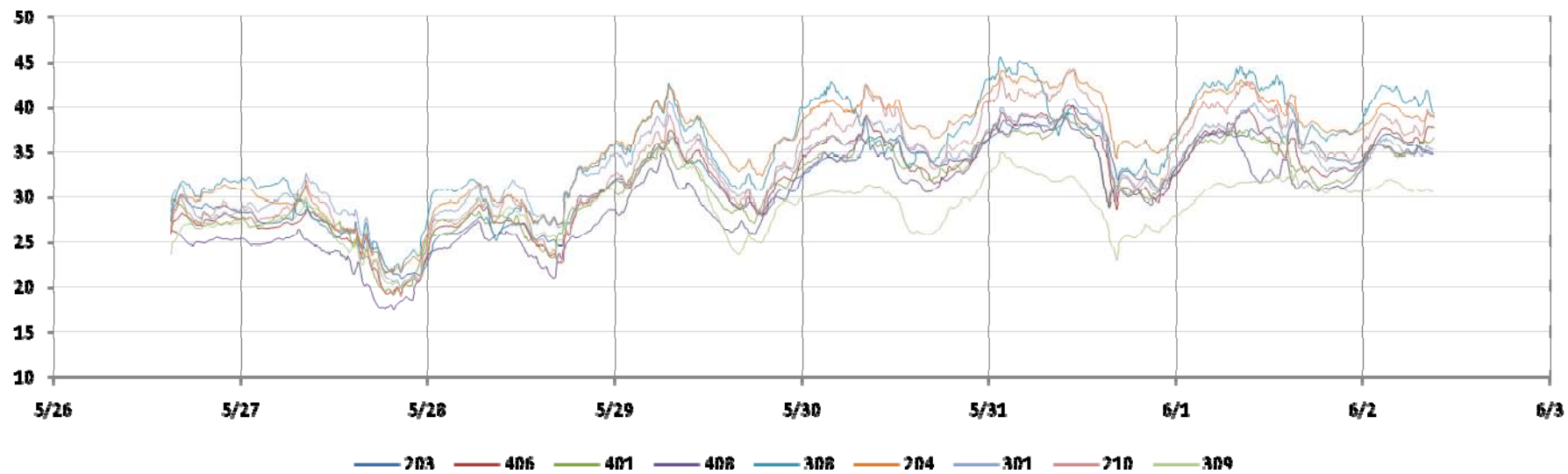
Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

- None

TIME-RELATIVE HUMIDITY



Carbon Dioxide

Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

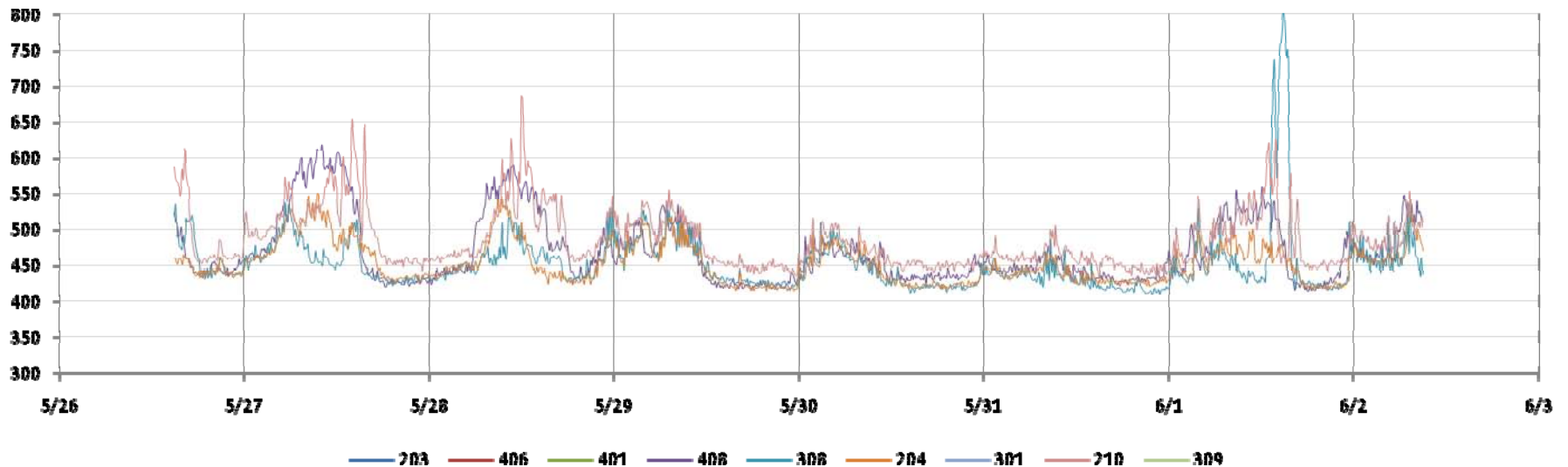
Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building different:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck or leaky
- Reduce the amount of outside air ventilation during mechanical heating and cooling cycles
- Install demand control ventilation

TIME-CARBON DIOXIDE



Lighting

Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

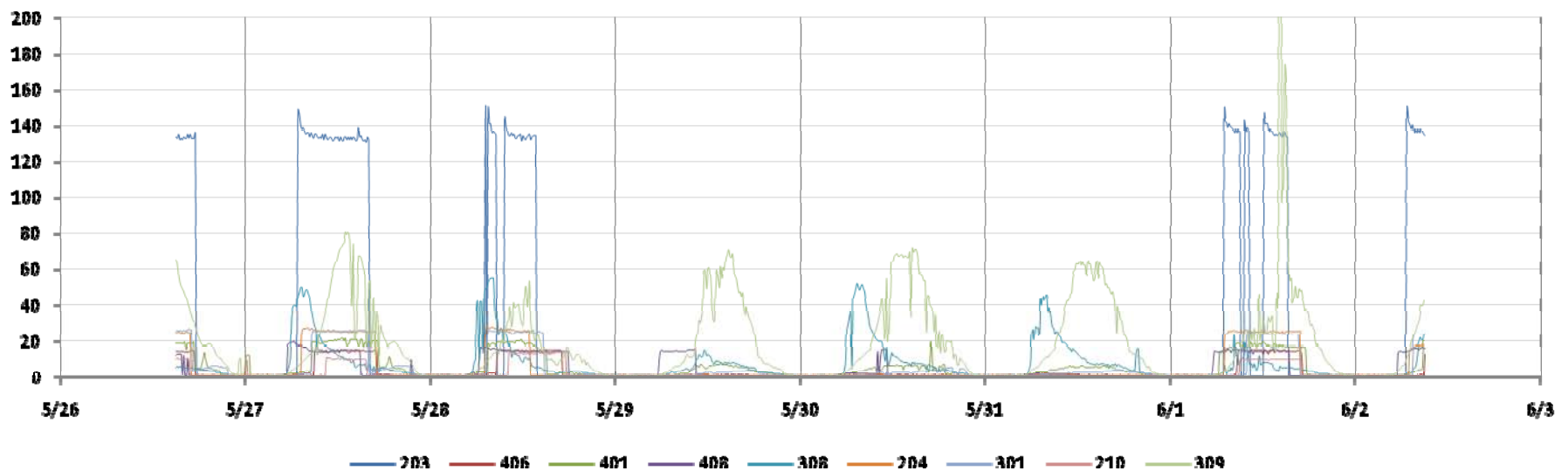
Sources: BOMA, ENERGY STAR, DOE

Energy Saving Opportunities

Energy Recommendations Based on Measurements

- Install high efficient lighting
- Install motion/Occupancy/Daylight harvesting sensors in the perimeter offices

TIME LIGHTING





STATEMENT OF ENERGY PERFORMANCE 1017

Building ID: 2362767

For 12-month Period Ending: April 30, 2010¹

Date SEP becomes ineligible: N/A

Date SEP Generated: October 05, 2010

Facility

1017
1017
Anchorage, AK 99503

Facility Owner

N/A

Primary Contact for this Facility

N/A

Year Built: 1980**Gross Floor Area (ft²):** 36,000**Energy Performance Rating² (1-100)** 84**Site Energy Use Summary³**

Electricity - Grid Purchase(kBtu)	880,291
Natural Gas (kBtu) ⁴	2,873,300
Total Energy (kBtu)	3,753,591

Energy Intensity⁵

Site (kBtu/ft ² /yr)	104
Source (kBtu/ft ² /yr)	165

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	297
---	-----

Electric Distribution Utility

Chugach Electric Assn Inc

National Average Comparison

National Average Site EUI	162
National Average Source EUI	256
% Difference from National Average Source EUI	-36%
Building Type	Office

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) or a Registered Architect (RA) 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 or RA 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	1017	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	Office	Is this an accurate description of the space in question?		☐
Location	1017, Anchorage, AK 99503	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		☐
Office (Office)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	36,000 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.		☐
Weekly operating hours	65 Hours (Default)	Is this the total number of hours per week that the Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		☐
Workers on Main Shift	83 (Default)	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100. The normal worker density ranges between 0.3 and 5.3 workers per 1000 square feet (92.8 square meters)		☐
Number of PCs	79 (Default)	Is this the number of personal computers in the Office?		☐
Percent Cooled	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐
Parking (Parking)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	30,000 Sq. Ft.	Is this the total square footage of the entire parking area (enclosed + nonenclosed + open floor area)?		☐

Enclosed Floor Area	0 Sq. Ft.	Is this the total square footage of the enclosed garage space? An enclosed garage is defined as having both sides and a roof.	☐
Non-Enclosed Floor Area (w/roof)	10,000 Sq. Ft.	Is this the total square footage of the nonenclosed garage space? This is typically defined as the portion of the garage above ground (contains no sides but is under a roof).	☐
Open Floor Area (w/o roof)	20,000 Sq. Ft.	Is this the total square footage of the nonenclosed parking area without a roof? This is typically defined as open parking lots or the very top level of an above ground parking garage.	☐
Weekly Hours of Access	168 Hours	Is this the total number of hours per week when it is possible for a vehicle to enter or exit?	☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Chugach Electric Assn Inc

Fuel Type: Electricity		
Meter: Electricity (kWh (thousand Watt-hours)) Space(s): Entire Facility Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
03/23/2010	04/22/2010	25,225.00
02/19/2010	03/23/2010	22,504.00
01/21/2010	02/19/2010	22,503.00
12/21/2009	01/21/2010	19,853.00
11/23/2009	12/21/2009	23,297.00
10/22/2009	11/23/2009	20,769.00
09/23/2009	10/22/2009	20,320.00
08/24/2009	09/23/2009	21,687.00
07/23/2009	08/24/2009	21,089.00
06/22/2009	07/23/2009	20,692.00
05/22/2009	06/22/2009	19,678.00
Electricity Consumption (kWh (thousand Watt-hours))		237,617.00
Electricity Consumption (kBtu (thousand Btu))		810,749.20
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		810,749.20
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☐
Fuel Type: Natural Gas		
Meter: Gas (ccf (hundred cubic feet)) Space(s): Entire Facility		
Start Date	End Date	Energy Use (ccf (hundred cubic feet))
03/15/2010	04/14/2010	2,718.00
02/15/2010	03/14/2010	2,589.00
01/15/2010	02/14/2010	3,385.00
12/15/2009	01/14/2010	3,949.00
11/15/2009	12/14/2009	3,089.00
10/15/2009	11/14/2009	2,065.00
09/15/2009	10/14/2009	1,744.00
08/15/2009	09/14/2009	1,470.00
07/15/2009	08/14/2009	1,315.00
06/15/2009	07/14/2009	1,551.00
05/15/2009	06/14/2009	2,094.00

Gas Consumption (ccf (hundred cubic feet))	25,969.00
Gas Consumption (kBtu (thousand Btu))	2,672,210.10
Total Natural Gas Consumption (kBtu (thousand Btu))	2,672,210.10
Is this the total Natural Gas consumption at this building including all Natural Gas 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.	☐

On-Site Solar and Wind Energy	
Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.	☐

Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA 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
1017
1017
Anchorage, AK 99503

Facility Owner
N/A

Primary Contact for this Facility
N/A

General Information

1017	
Gross Floor Area Excluding Parking: (ft ²)	36,000
Year Built	1980
For 12-month Evaluation Period Ending Date:	April 30, 2010

Facility Space Use Summary

Office		Parking	
Space Type	Office	Space Type	Parking
Gross Floor Area(ft ²)	36,000	Gross Floor Area(ft ²)	30,000
Weekly operating hours ^d	65	Enclosed Floor Area	0
Workers on Main Shift ^d	83	Non-Enclosed Floor Area (w/roof)	10,000
Number of PCs ^d	79	Open Floor Area (w/o roof)	20,000
Percent Cooled	50% or more	Weekly Hours of Access	168
Percent Heated	50% or more		

Energy Performance Comparison

Performance Metrics	Evaluation Periods		Comparisons		
	Current (Ending Date 04/30/2010)	Baseline (Ending Date 04/30/2010)	Rating of 75	Target	National Average
Energy Performance Rating	84	84	75	90	50
Energy Intensity					
Site (kBtu/ft ²)	104	104	122	94	162
Source (kBtu/ft ²)	165	165	193	148	256
Energy Cost					
\$/year	\$ 56,648.85	\$ 56,648.85	\$ 66,248.78	\$ 50,830.21	\$ 87,898.89
\$/ft ² /year	\$ 1.57	\$ 1.57	\$ 1.84	\$ 1.41	\$ 2.44
Greenhouse Gas Emissions					
MtCO ₂ e/year	297	297	347	266	461
kgCO ₂ e/ft ² /year	8	8	9	7	12

More than 50% of your building is defined as Office. 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.

Statement of Energy Performance

2010

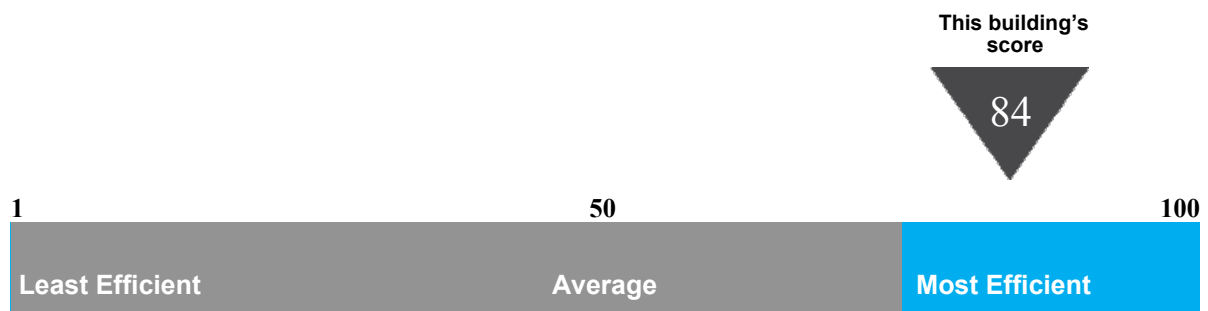
1017

1017

Anchorage, AK 99503

Portfolio Manager Building ID: 2362767

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit energystar.gov/benchmark.



This building uses 165 kBtu per square foot per year.*

*Based on source energy intensity for the 12 month period ending April 2010

Buildings with a score of
75 or higher may qualify
for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at energystar.gov

Date of certification



Date Generated: 10/05/2010

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1018

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

CHUGACH
POWERING ALASKA'S FUTURE

CONTROL
CONTRACTORS

smart building solutions



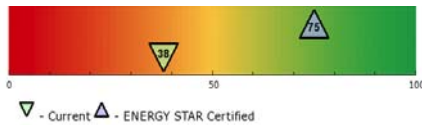
positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

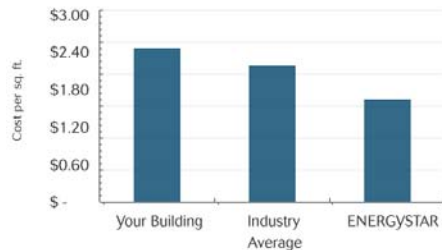


Your building's ENERGY STAR® Energy Performance Rating is **38**. Its Energy Use Index is **115 kbtu per sq. ft.**

Your building's ENERGY STAR score of 38 ranks you close to your peers, and falls below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

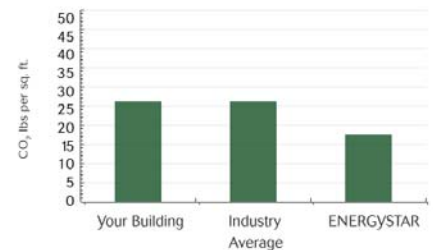


Your building's annual cost per square foot is **\$2.40 per sq. ft.** overall.

Your building's cost per square foot is \$0.80 more than the ENERGY STAR certification level. Your annual cost can be reduced by \$30,900 or 33.2% by achieving an ENERGY STAR score of 75.



Carbon Footprint



Your building's annual carbon footprint is **459 metric tons of CO₂** or **26.06 lbs per sq. ft.**

Your building's carbon emissions are 49.5% more than an ENERGY STAR certified building, and can be reduced by 9 lbs per sq. ft. by achieving an ENERGY STAR score of 75.

You could save up to **\$30,900** annually or **\$154,500** over 5 years by raising your ENERGY STAR score to the level of 75.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Your building is controlled well
- Your building is over-ventilated



How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

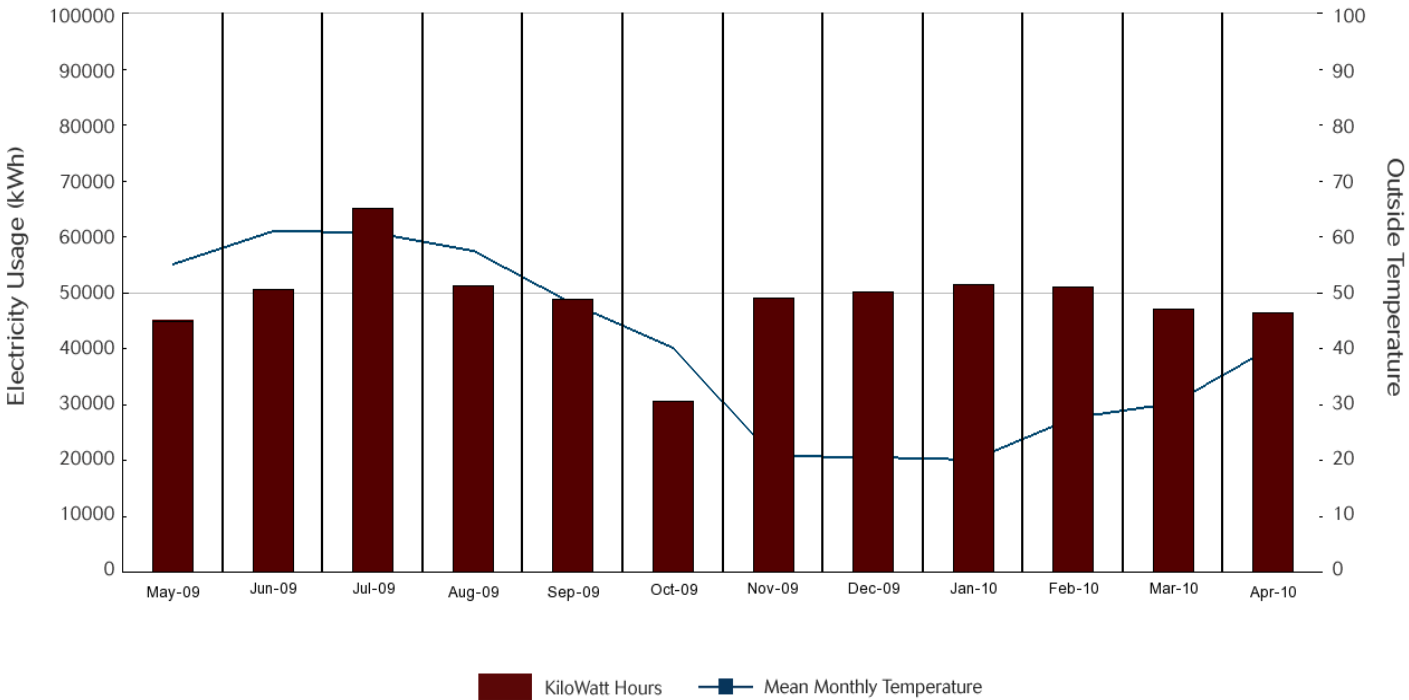
Electricity Consumption

- Electricity comprises 74.8% of your total utility cost, and 44.8% of your total utility consumption.
- Your Total Spend on electricity is \$69,609, so when considering savings opportunities, remember you can only save some percentage of that total.
- Demand costs are included in the overall electricity costs.

Monthly Electricity Costs



Electricity Consumption And Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

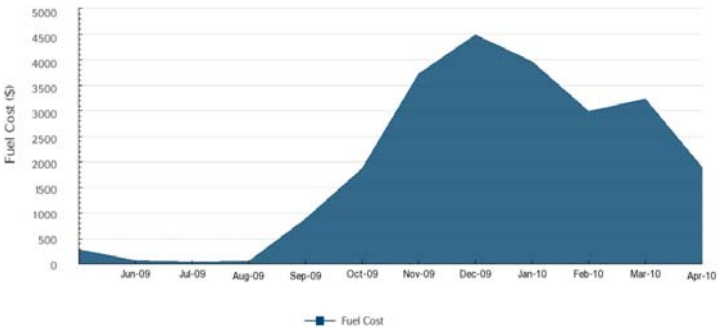


Monthly Fuel Costs

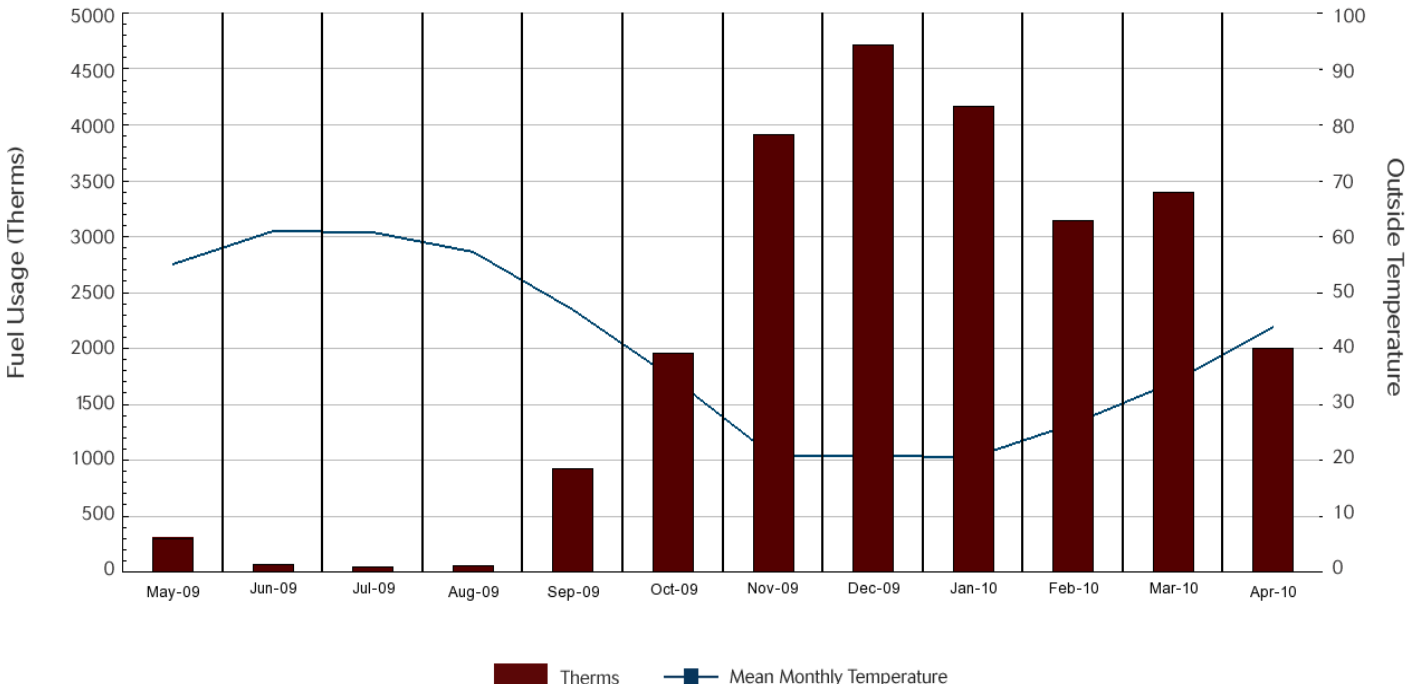
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 25.2% of your total utility cost, and 55.2% of your total utility consumption.
- Your Total Spend on Fuel is \$23,433, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption and Outside Air Temperature



Building Comfort and Ventilation Analysis

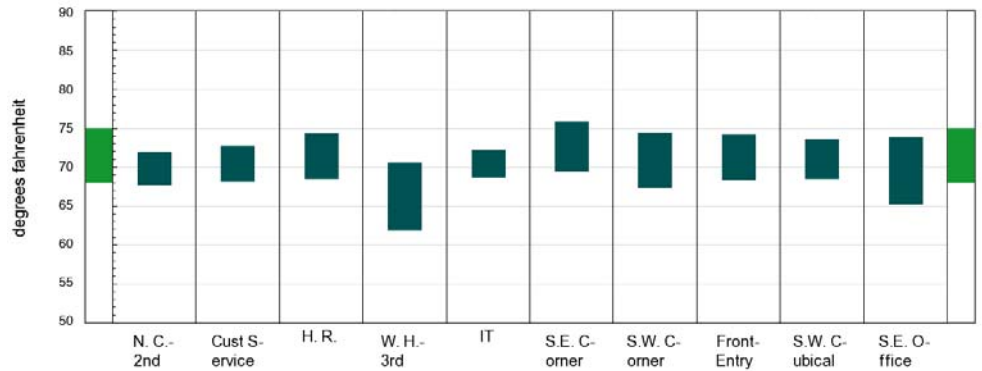
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building is controlled well with little opportunity for savings.

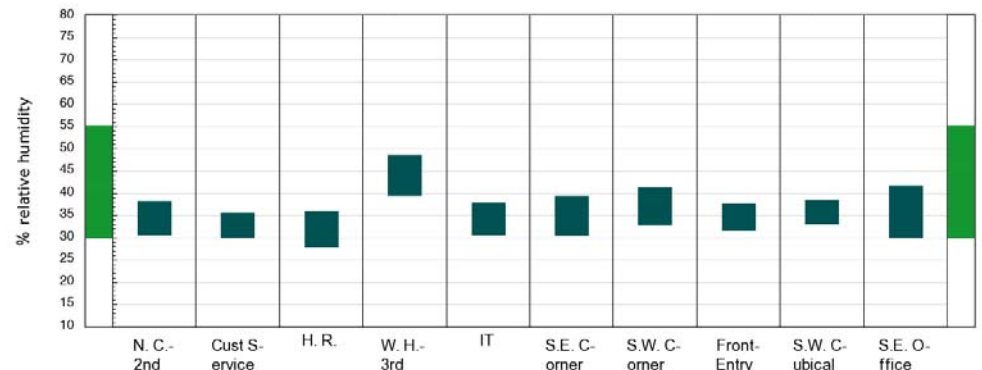
- 1 space(s) were too warm at times
- 4 space(s) were too cool at times
- 4 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 1 space(s) had low relative humidity at times

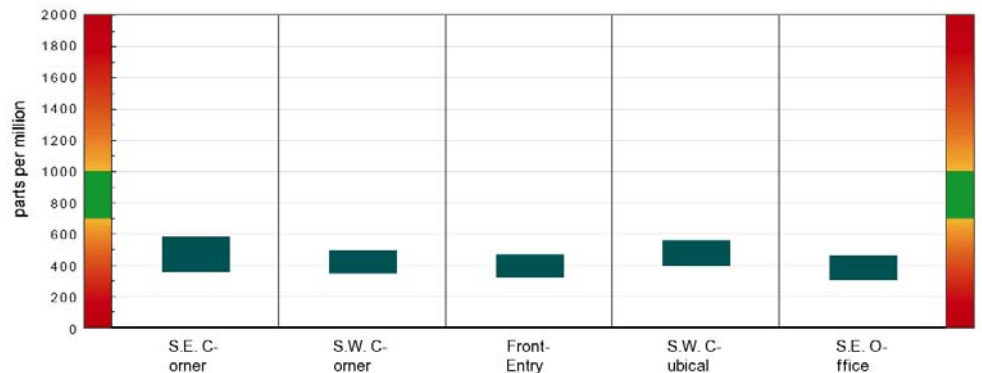


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: $\pm 1^\circ\text{F}$]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating Set Point is 68 / 68
	Occupied/Unoccupied Cooling Set Point is 75 / 75

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Further Comfort & Energy Recommendations

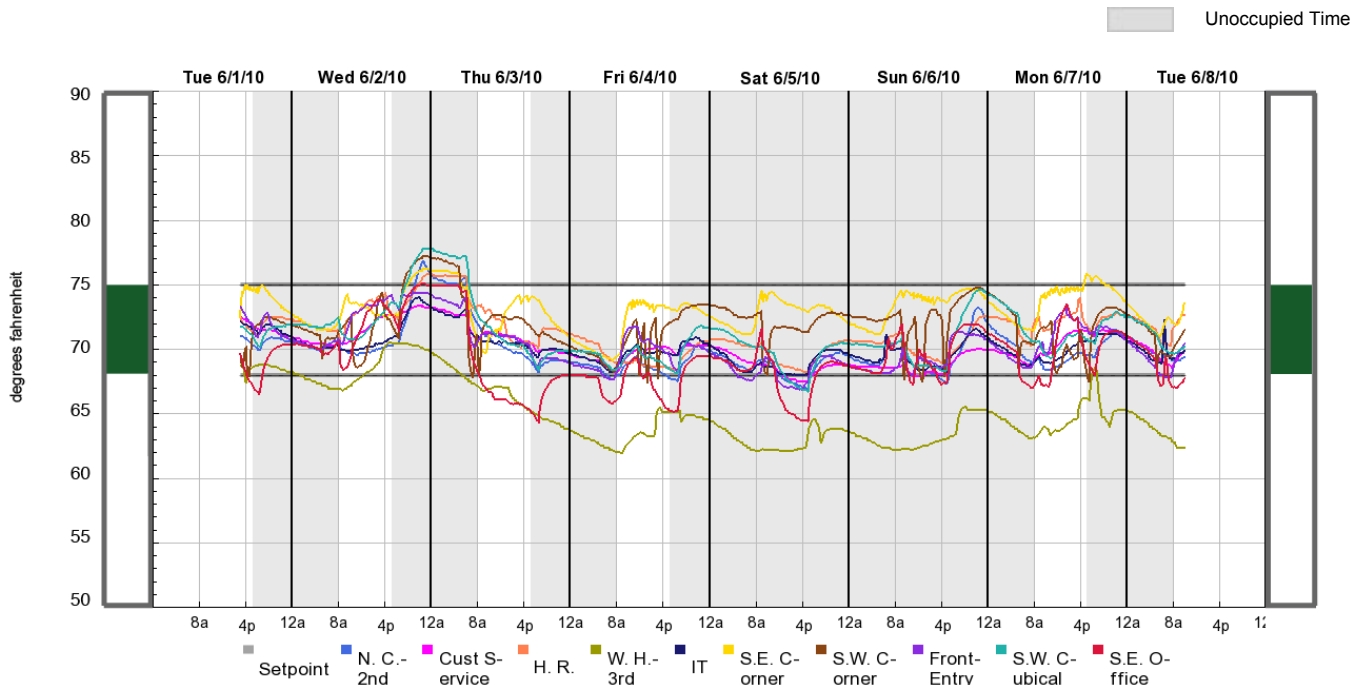
- Increase the amount of heating set back possible during the unoccupied times

Monitor Statistics

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%ToR*	SV†
N. C. 2nd		68	72	69	3%	2
Cust Service		68	73	71	1%	2
H. R.		68	74	71	7%	9
W. H. 3rd		62	70	66	76%	12
IT		69	72	70	1%	2
S.E. Corner		70	76	73	1%	4
S.W. Corner		68	74	71	2%	6
Front Entry		69	74	71	5%	3
S.W. Cubical		68	74	71	0%	2
S.E. Office		65	74	69	48%	7

These statistics are for occupied times only.

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- Humidification system not functioning properly
- Humidification system undersized
- Excessive ventilation during some periods

Recommended Actions

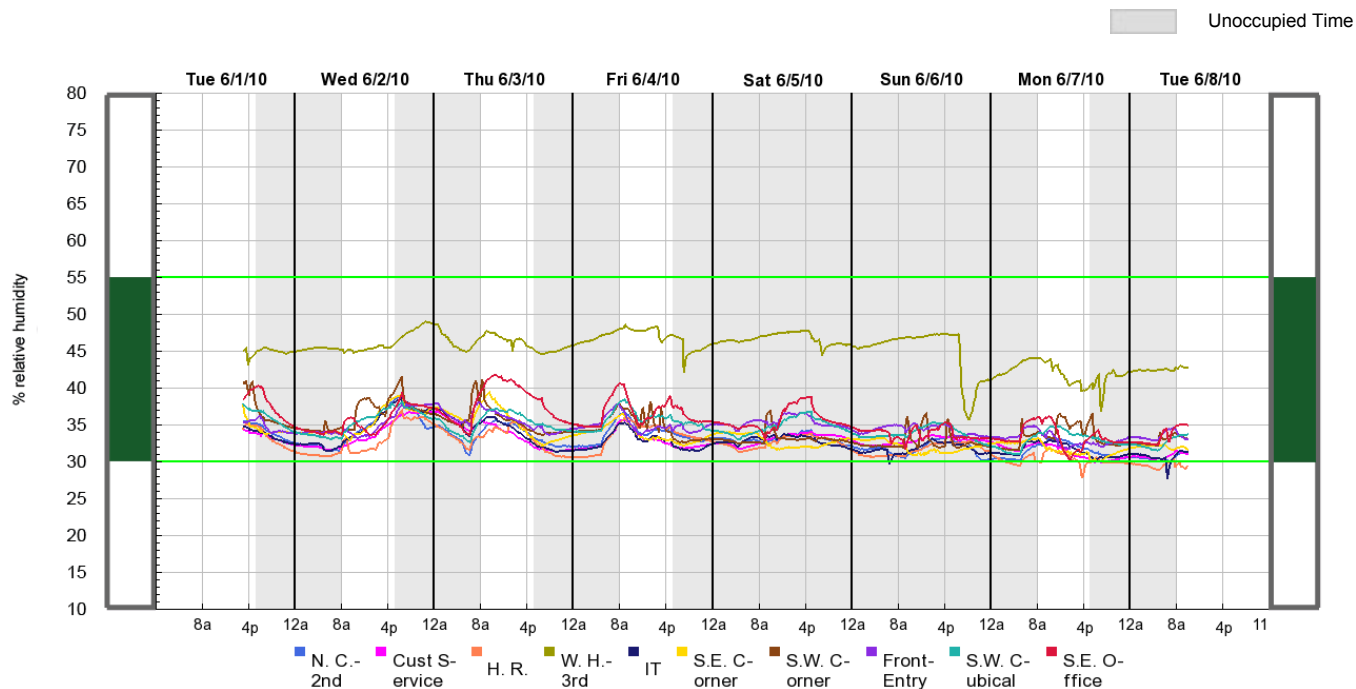
- Repair / replace humidification system
- Add capacity to humidification system
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
N. C. 2nd		31	38	34	4%
Cust Service		30	36	33	5%
H. R.		28	36	33	15%
W. H. 3rd		40	49	45	0%
IT		31	38	34	5%
S.E. Corner		31	39	34	0%
S.W. Corner		33	41	36	0%
Front Entry		32	38	34	4%
S.W. Cubical		33	38	36	0%
S.E. Office		30	42	37	0%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

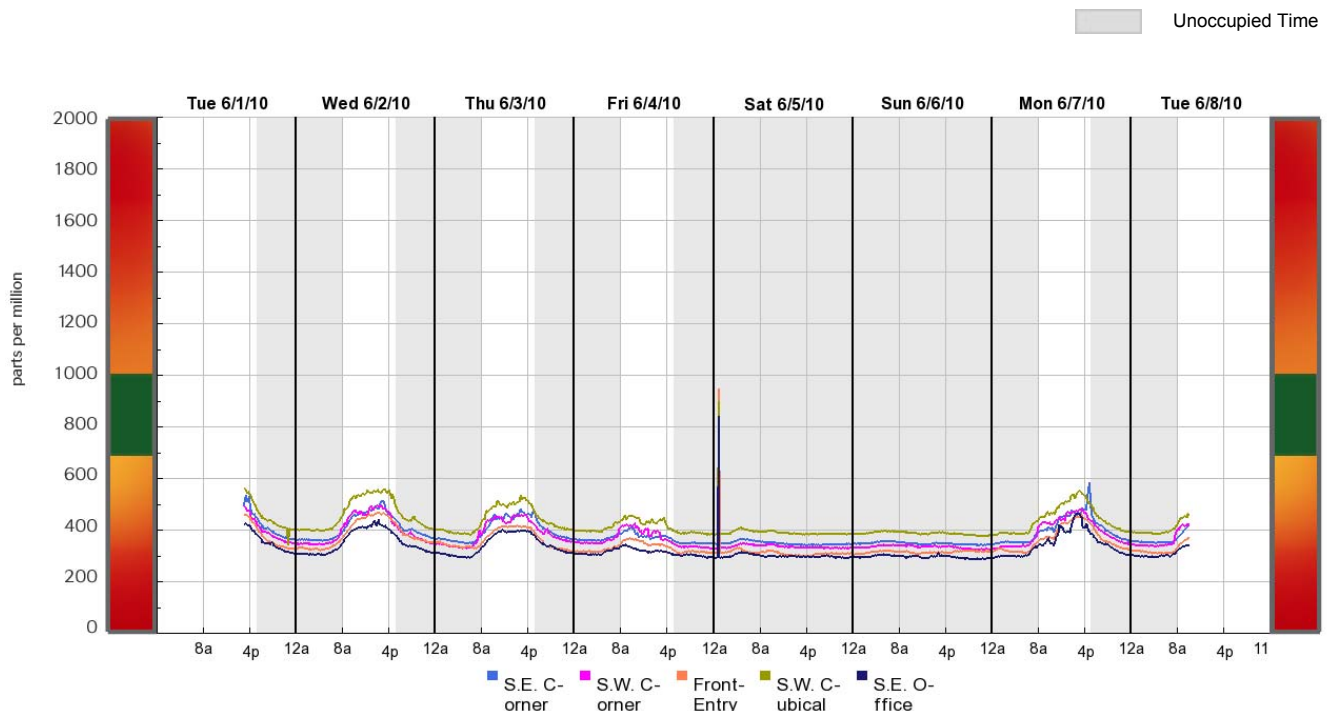
Comfort & Health Recommendations

- No recommendations at this time

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
S.E. Corner		359	582	434	100%
S.W. Corner		348	492	435	100%
Front Entry		323	467	399	100%
S.W. Cubical		395	557	488	100%
S.E. Office		304	463	374	100%

These statistics are for occupied times only.

* % Time out of Range



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99518

Outdoor Temperature

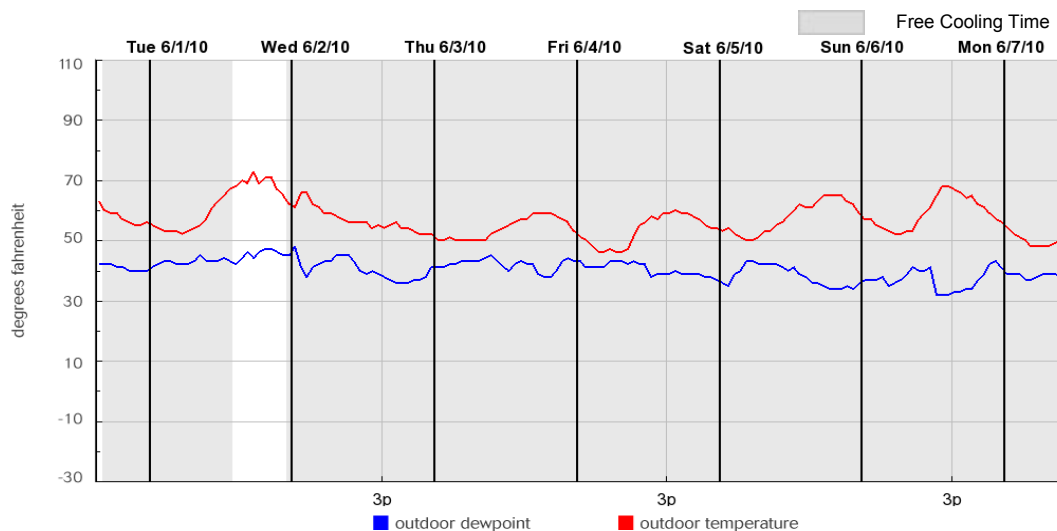
Test Period Avg: 6/1/10 – 6/8/10	Heating Degree Days	Cooling Degree Days
57 °F	8	0

Outdoor Temperature and Dew Point

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dew point during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	XXXXXXXX
Contact	XXXXXX
Address	XXXXX
Building Information	
Building Background	Building Usage: Office Building Size (sq ft): 38820 # of Stories: 3 Building Status: Existing Construction type: High Rise LEED Cert.: None Heating System: Packaged Gas Unit Domestic Hot Water: Gas or Other Fuel Economizer: Yes Cooling System: DX / Packaged Unit
Additional Systems	Humidification: Yes Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
N. C. 2nd	20431
Cust Service	20420
H. R.	20418
W. H. 3rd	20416
IT	20415
S.E. Corner	20300
S.W. Corner	20295
Front Entry	20293
S.W. Cubical	20289
S.E. Office	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	08:00	68	75	Yes
Tue				
Wed	17:00	68	75	No
Thu				
Fri				

Building Description

Office			
Gross Floor Area	33820	Weekly Operating Hours	50
Number of Workers on Main Shift	50	Number of PCs	56
Office Air-Conditioned	50% or more	Office Heated	50% or more

Warehouse (Unrefrigerated)			
Gross Floor Area	5000	Number of Workers on Main Shift	2
Weekly Operating Hours	50	% Air-Conditioned	0
% Heated	50	Walk-in Refrigeration/Freezer Units	0

Parking			
Enclosed Floor Area	0	Non-Enclosed Floor Area (w/roof)	0
Open Floor Area (w/o roof)	54000	Weekly Hours of Access	168

Building Controls Information

Current Controls	
Controls Type	Direct Digital
Schedule Type	Time Clock
Air Delivery Method	Variable Air Volume
Air-Flow Modulation	Variable Frequency Drive

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
5/15/09	44880	\$7,041		\$0
6/15/09	50640	\$7,252		\$0
7/15/09	64960	\$9,242		\$0
8/12/09	51120	\$3,455		\$0
9/9/09	48720	\$5,888		\$0
10/7/09	30640	\$3,743		\$0
11/11/09	48960	\$5,888		\$0
12/9/09	50080	\$5,937		\$0
1/13/10	51360	\$5,401		\$0
2/10/10	51040	\$5,396		\$0
3/10/10	47040	\$5,090		\$0
4/7/10	46400	\$5,276		\$0
TOTAL:	585840	\$69,609		\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
5/15/09 293		\$278
6/15/09 66		\$63
7/15/09 43		\$40
8/15/09 52		\$49
9/15/09 920		\$874
10/15/09 1960		\$1,862
11/15/09 3917		\$3,721
12/15/09 4717		\$4,481
1/15/10 4164		\$3,955
2/15/10 3141		\$2,983
3/15/10 3397		\$3,227
4/15/10 2000		\$1,900
TOTAL:	24670	\$23,433

Commercial Energy Savings Assessment



Watt Buster



ASSESSMENT SITE

1019

ASSESSMENT PERFORMED BY

Control Contractors – Anchorage

5660 B Street

Anchorage, Alaska 99518



smart building solutions

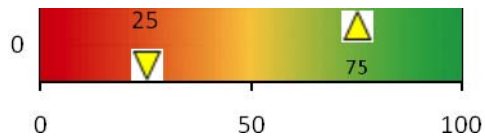


posi⊕iveENERGY

EXECUTIVE SUMMARY



Energy Use

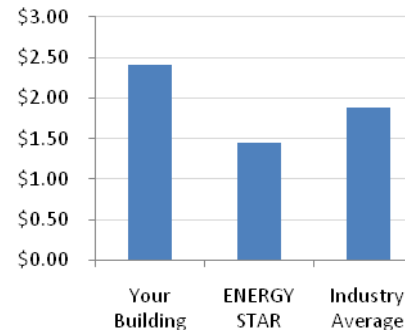


Your building's ENERGY STAR® Energy Performance Rating is 25. Its Energy Use Index is 156 kbtu per sq. ft.

Your building's ENERGY STAR score of 25 ranks you below average versus your peers, and falls well below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

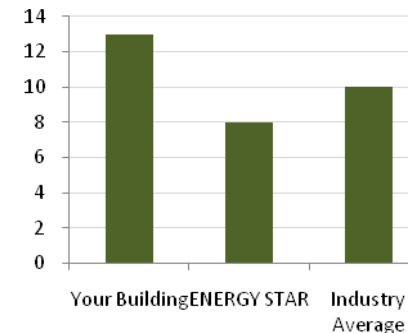


Your building's annual cost per square foot is \$2.41 per sq. ft. overall.

Your building's cost per square foot is \$0.53 more than the industry average. Your annual cost can be reduced by \$6,287 (21.9%) or \$31,435 over 5 years by achieving an ENERGY STAR score of 50.



Carbon Footprint



Your building's annual carbon footprint is 156 metric tons of CO2 or 13lbs per sq. ft.

Your building's carbon emissions are 27.9% more than the industry average, and can be reduced by 3 lbs per sq. ft. by achieving an ENERGY STAR score of 50.

You could save up to **\$6,287** annually or **\$31,435** over 5 years by raising your ENERGY STAR score to the level of 50

While a detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR database.

How Does Your Building Use Electricity Today?

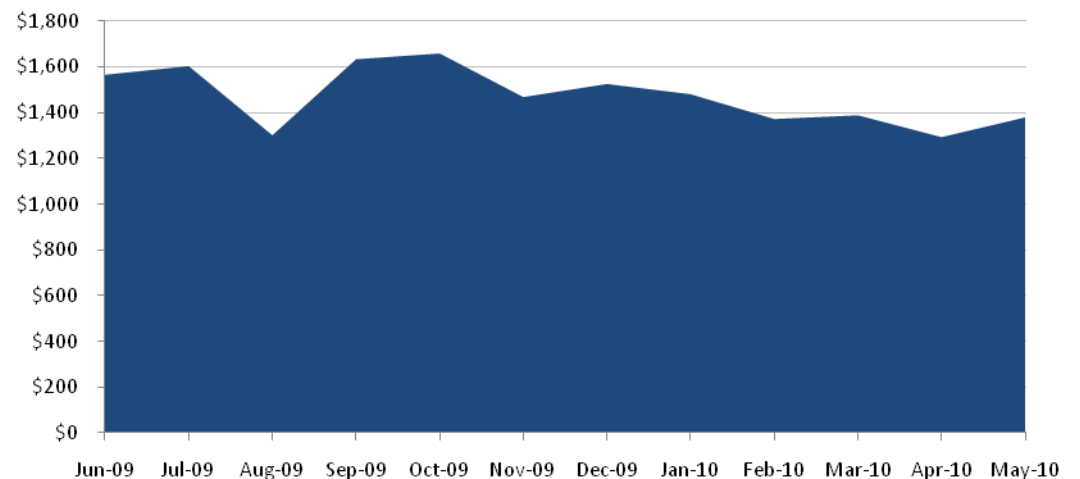
This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

MONTHLY ELECTRICITY COST

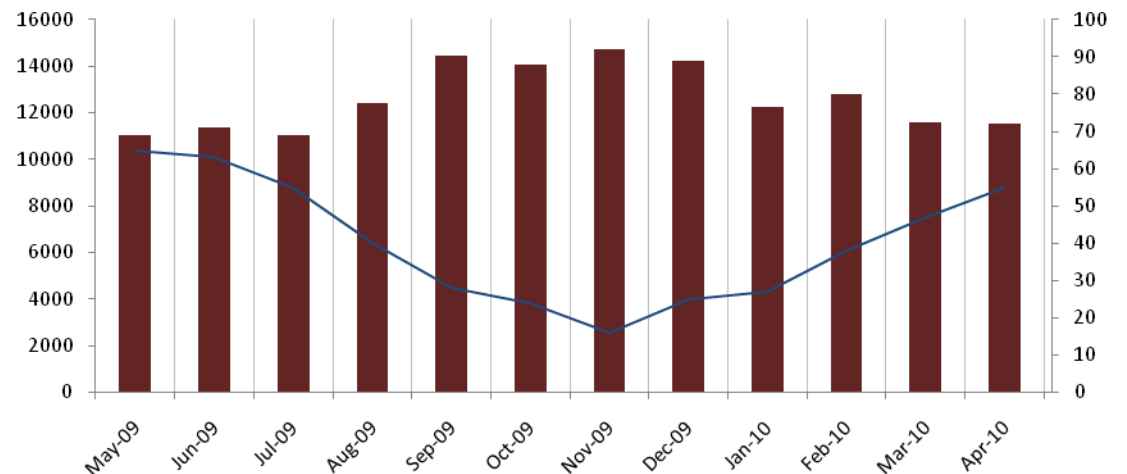
Utility Bill Analysis

Electricity Consumption

- Electricity comprises 66.6 % of your total utility cost, and 35% of your total utility consumption.
- Your Total Spend on electricity is \$17,653, so when considering savings opportunities, remember you can only save some percentage of that total.

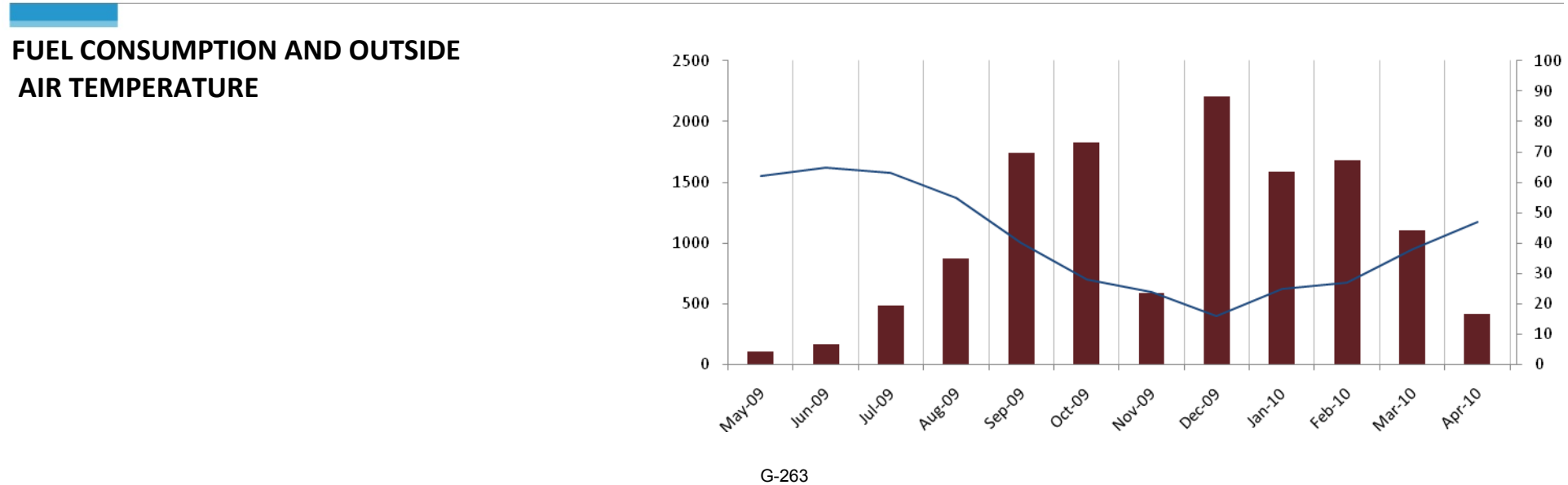
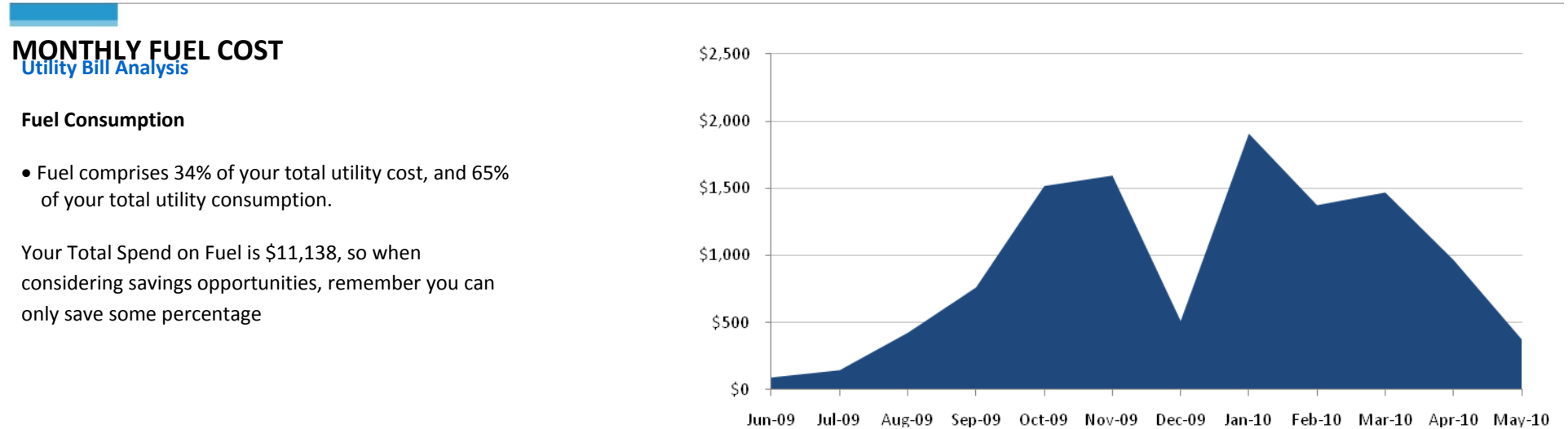


ELECTRICITY CONSUMPTION AND OUTSIDE AIR TEMPERATURE



How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

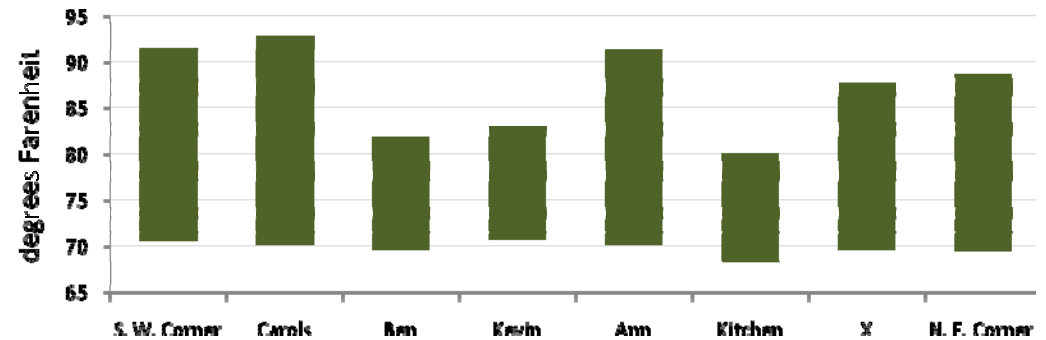


Building Comfort and Ventilation Analysis

This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

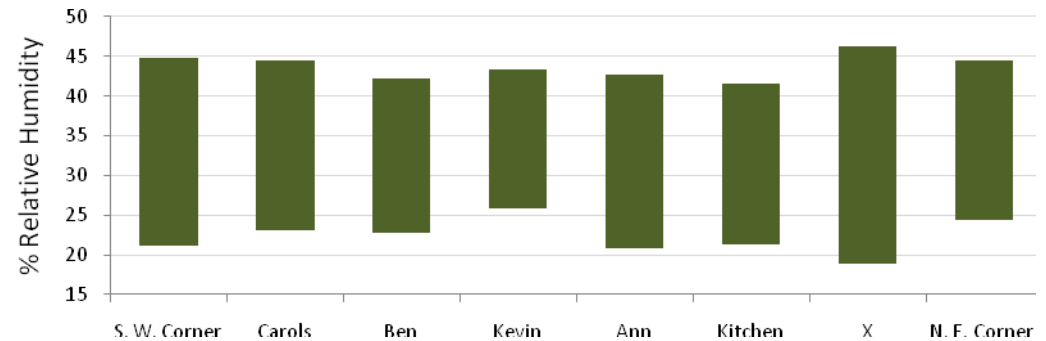
TEMPERATURE FINDINGS

- 3 space(s) were too warm at times
- 0 space(s) were too cool at times
- 4 space(s) had excessive temperature variation



RELATIVE HUMIDITY

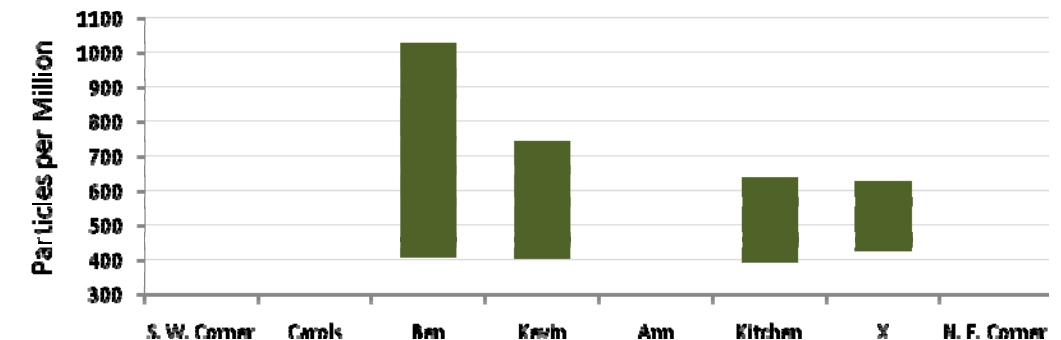
- 4 space(s) had high relative humidity at times
- 2 space(s) had low relative humidity



CARBON DIOXIDE

Your building is over ventilated and can save energy by reducing the overall amount of outside air ventilation

- 1 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

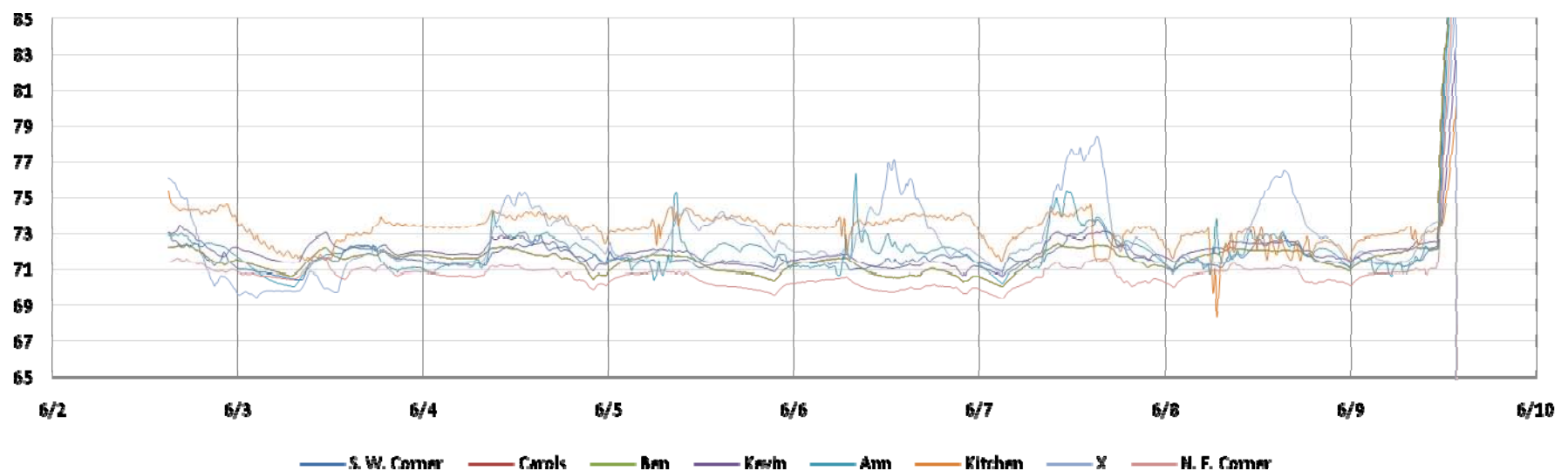
ENERGY SAVING OPPORTUNITIES

Our findings indicate there are several ways to save money by operating your building differently.

Energy Recommendations based on Measurements

- Calibrate thermostats to reduce temperature variation
- Verify the control system is shutting the heat and cooling equipment off
- Move thermostats to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

TIME – TEMPERATURE



Relative-Humidity

Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

ANALYSIS AND RECOMMENDATIONS

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

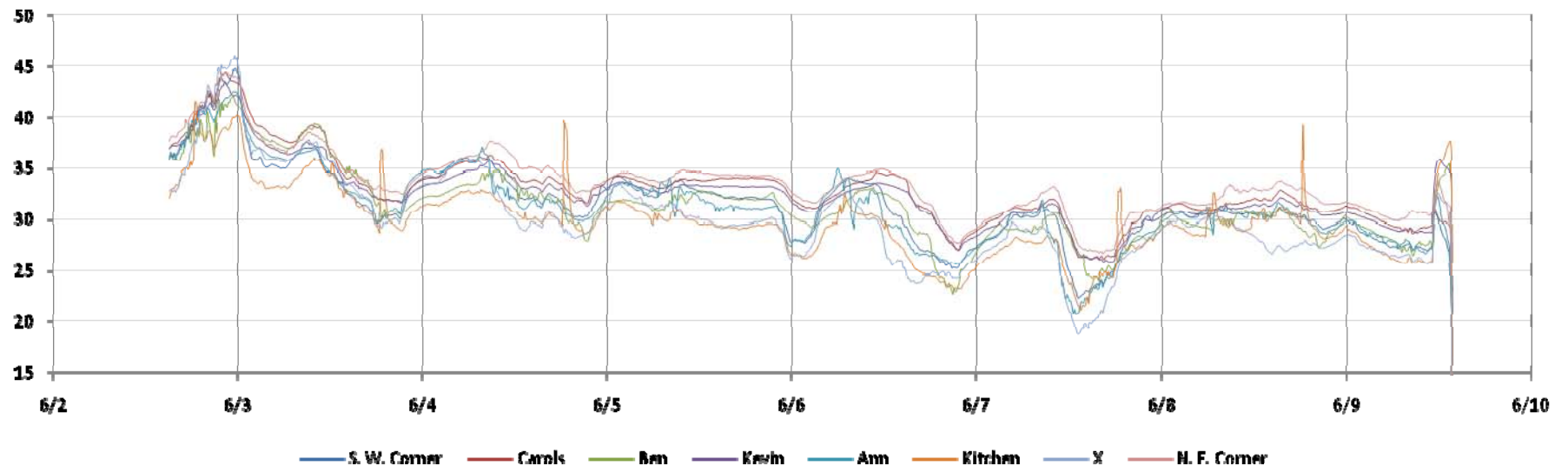
Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

- Add humidification system
- Improve ventilation control

TIME-RELATIVE HUMIDITY



Carbon Dioxide

Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

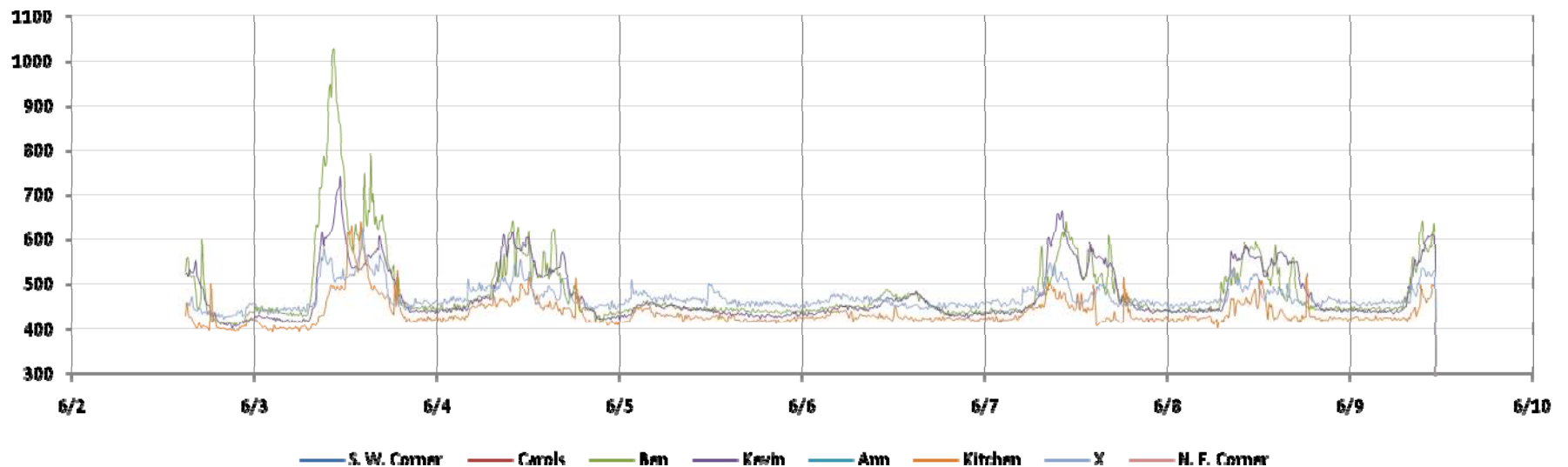
Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building different:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

TIME-CARBON DIOXIDE



Lighting

Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

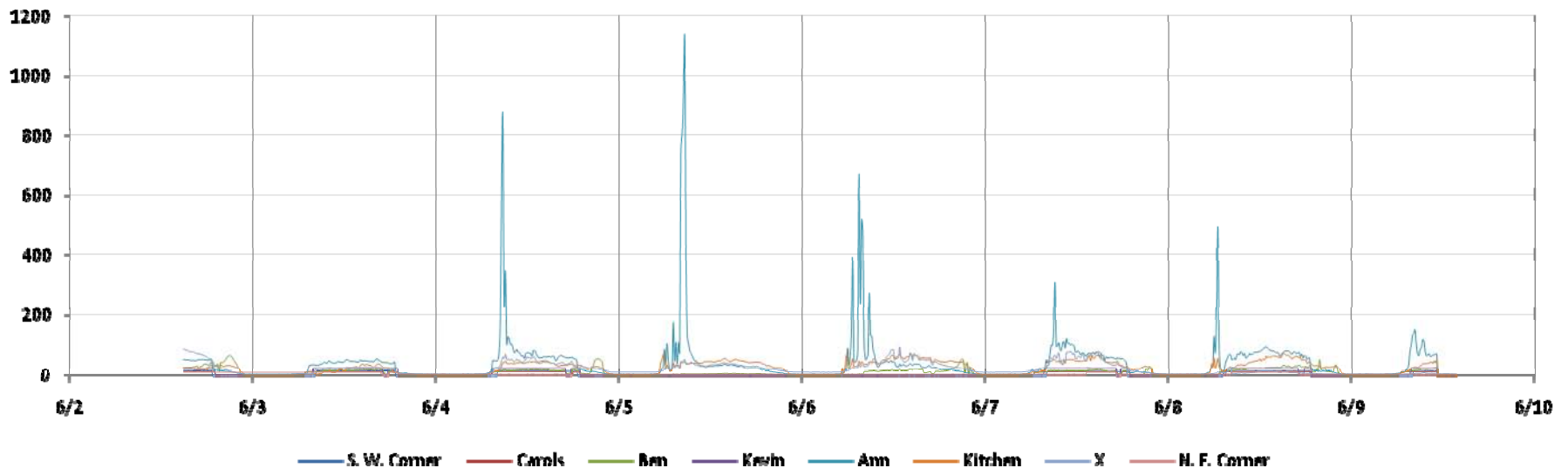
Sources: BOMA, ENERGY STAR, DOE

Energy Saving Opportunities

Energy Recommendations Based on Measurements

- Verify proper lighting levels in each area of the building

TIME LIGHTING



Building and Monitor Placement Information

General Information

Contact Information	
Building Name	XXXX
Contact	
Address	Anchorage, AK 99518
Building Information	
Building Background	Building Usage: Office Building Size (sqft): 11,893 # of Stories: Building Status: Existing Construction type: Cement Block LEED Cert.: None Heating System: Boiler Domestic Hot Water: Electric Resistance Economizer: Yes Cooling System: Chiller - Cooling Tower
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
34	S. W. Corner
35 Carols	
36	
37 Ben	
38	
39 Kevin	
40 Ann	
41 Kitchen	
42 X	
43	N. E. Corner



STATEMENT OF ENERGY PERFORMANCE 1019

Building ID: 2350581

For 12-month Period Ending: May 31, 2010¹

Date SEP becomes ineligible: N/A

Date SEP Generated: October 05, 2010

Facility

1019
1019
Anchorage, AK 99518

Facility Owner

N/A

Primary Contact for this Facility

N/A

Year Built: 1986**Gross Floor Area (ft²):** 11,893**Energy Performance Rating²** (1-100) 25**Site Energy Use Summary³**

Electricity - Grid Purchase(kBtu)	513,156
Natural Gas (kBtu) ⁴	1,342,931
Total Energy (kBtu)	1,856,087

Energy Intensity⁵

Site (kBtu/ft ² /yr)	156
Source (kBtu/ft ² /yr)	262

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	156
---	-----

Electric Distribution Utility

Chugach Electric Assn Inc

National Average Comparison

National Average Site EUI	122
National Average Source EUI	205
% Difference from National Average Source EUI	28%
Building Type	Office

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) or a Registered Architect (RA) 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 or RA 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	1019	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	Office	Is this an accurate description of the space in question?		☐
Location	1019, Anchorage, AK 99518	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		☐
Office (Office)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	11,893 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.		☐
Weekly operating hours	45 Hours	Is this the total number of hours per week that the Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		☐
Workers on Main Shift	23	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100. The normal worker density ranges between 0.3 and 5.3 workers per 1000 square feet (92.8 square meters)		☐
Number of PCs	25	Is this the number of personal computers in the Office?		☐
Percent Cooled	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐
Parking (Parking)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	23,893 Sq. Ft.	Is this the total square footage of the entire parking area (enclosed + nonenclosed + open floor area)?		☐

Enclosed Floor Area	0 Sq. Ft.	Is this the total square footage of the enclosed garage space? An enclosed garage is defined as having both sides and a roof.	☐
Non-Enclosed Floor Area (w/roof)	0 Sq. Ft.	Is this the total square footage of the nonenclosed garage space? This is typically defined as the portion of the garage above ground (contains no sides but is under a roof).	☐
Open Floor Area (w/o roof)	23,893 Sq. Ft.	Is this the total square footage of the nonenclosed parking area without a roof? This is typically defined as open parking lots or the very top level of an above ground parking garage.	☐
Weekly Hours of Access	168 Hours	Is this the total number of hours per week when it is possible for a vehicle to enter or exit?	☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Chugach Electric Assn Inc

Fuel Type: Electricity		
Meter: Electricity (kWh (thousand Watt-hours)) Space(s): Entire Facility Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
04/30/2010	05/29/2010	11,600.00
03/30/2010	04/29/2010	12,800.00
03/01/2010	03/29/2010	12,240.00
01/30/2010	02/28/2010	14,240.00
12/30/2009	01/29/2010	14,720.00
11/30/2009	12/29/2009	14,080.00
10/30/2009	11/29/2009	14,480.00
09/30/2009	10/29/2009	12,400.00
08/30/2009	09/29/2009	11,040.00
07/30/2009	08/29/2009	11,360.00
06/30/2009	07/29/2009	11,040.00
Electricity Consumption (kWh (thousand Watt-hours))		140,000.00
Electricity Consumption (kBtu (thousand Btu))		477,680.00
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		477,680.00
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☐
Fuel Type: Natural Gas		
Meter: Gas (ccf (hundred cubic feet)) Space(s): Entire Facility		
Start Date	End Date	Energy Use (ccf (hundred cubic feet))
04/15/2010	05/14/2010	1,102.00
03/15/2010	04/14/2010	1,679.00
02/15/2010	03/14/2010	1,589.00
01/15/2010	02/14/2010	2,210.00
12/15/2009	01/14/2010	589.00
11/15/2009	12/14/2009	1,832.00
10/15/2009	11/14/2009	1,743.00
09/15/2009	10/14/2009	876.00
08/15/2009	09/14/2009	488.00
07/15/2009	08/14/2009	169.00
06/15/2009	07/14/2009	106.00

Gas Consumption (ccf (hundred cubic feet))	12,383.00
Gas Consumption (kBtu (thousand Btu))	1,274,210.70
Total Natural Gas Consumption (kBtu (thousand Btu))	1,274,210.70
Is this the total Natural Gas consumption at this building including all Natural Gas 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.	☐

On-Site Solar and Wind Energy	
Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.	☐

Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA 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

1019
1019
Anchorage, AK 99518

Facility Owner

N/A

Primary Contact for this Facility

N/A

General Information

1019	
Gross Floor Area Excluding Parking: (ft ²)	11,893
Year Built	1986
For 12-month Evaluation Period Ending Date:	May 31, 2010

Facility Space Use Summary

Office		Parking	
Space Type	Office	Space Type	Parking
Gross Floor Area(ft ²)	11,893	Gross Floor Area(ft ²)	23,893
Weekly operating hours	45	Enclosed Floor Area	0
Workers on Main Shift	23	Non-Enclosed Floor Area (w/roof)	0
Number of PCs	25	Open Floor Area (w/o roof)	23,893
Percent Cooled	50% or more	Weekly Hours of Access	168
Percent Heated	50% or more		

Energy Performance Comparison

Performance Metrics	Evaluation Periods		Comparisons		
	Current (Ending Date 05/31/2010)	Baseline (Ending Date 05/31/2010)	Rating of 75	Target	National Average
Energy Performance Rating	25	25	75	50	50
Energy Intensity					
Site (kBtu/ft ²)	156	156	93	122	122
Source (kBtu/ft ²)	262	262	157	205	205
Energy Cost					
\$/year	\$ 28,691.66	\$ 28,691.66	\$ 17,142.93	\$ 22,404.39	\$ 22,404.39
\$/ft ² /year	\$ 2.41	\$ 2.41	\$ 1.44	\$ 1.88	\$ 1.88
Greenhouse Gas Emissions					
MtCO ₂ e/year	156	156	93	122	122
kgCO ₂ e/ft ² /year	13	13	8	10	10

More than 50% of your building is defined as Office. 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.

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1020

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

CHUGACH
POWERING ALASKA'S FUTURE

CONTROL
CONTRACTORS

smart building solutions



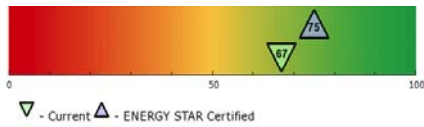
positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

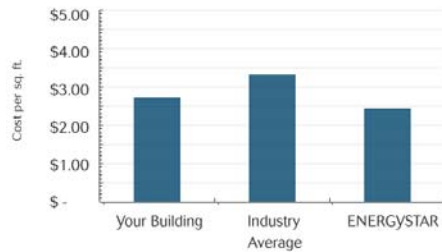


Your building's ENERGY STAR® Energy Performance Rating is **67**. Its Energy Use Index is **105 kbtu per sq. ft.**

Your building's ENERGY STAR score of 67 ranks you above average versus your peers, but your building may still have good opportunity to raise your ENERGY STAR score.



Cost

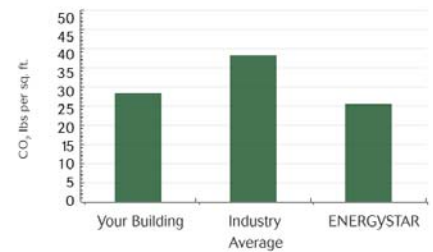


Your building's annual cost per square foot is **\$2.71 per sq. ft.** overall.

Your annual cost can be reduced by \$50,065 or 33.3% by achieving an ENERGY STAR score of 90.



Carbon Footprint



Your building's annual carbon footprint is **713 metric tons of CO₂** or **28.29 lbs per sq. ft.**

Your building's carbon emissions are 49.8% more than an energy efficient facility, and can further be reduced by 9 lbs per sq. ft. by achieving an ENERGY STAR score of 90.

You could save up to **\$50,065** annually or **\$250,325** over 5 years by raising your ENERGY STAR score to the level of 90.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Your building has some control issues
- Your building is over-ventilated



How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

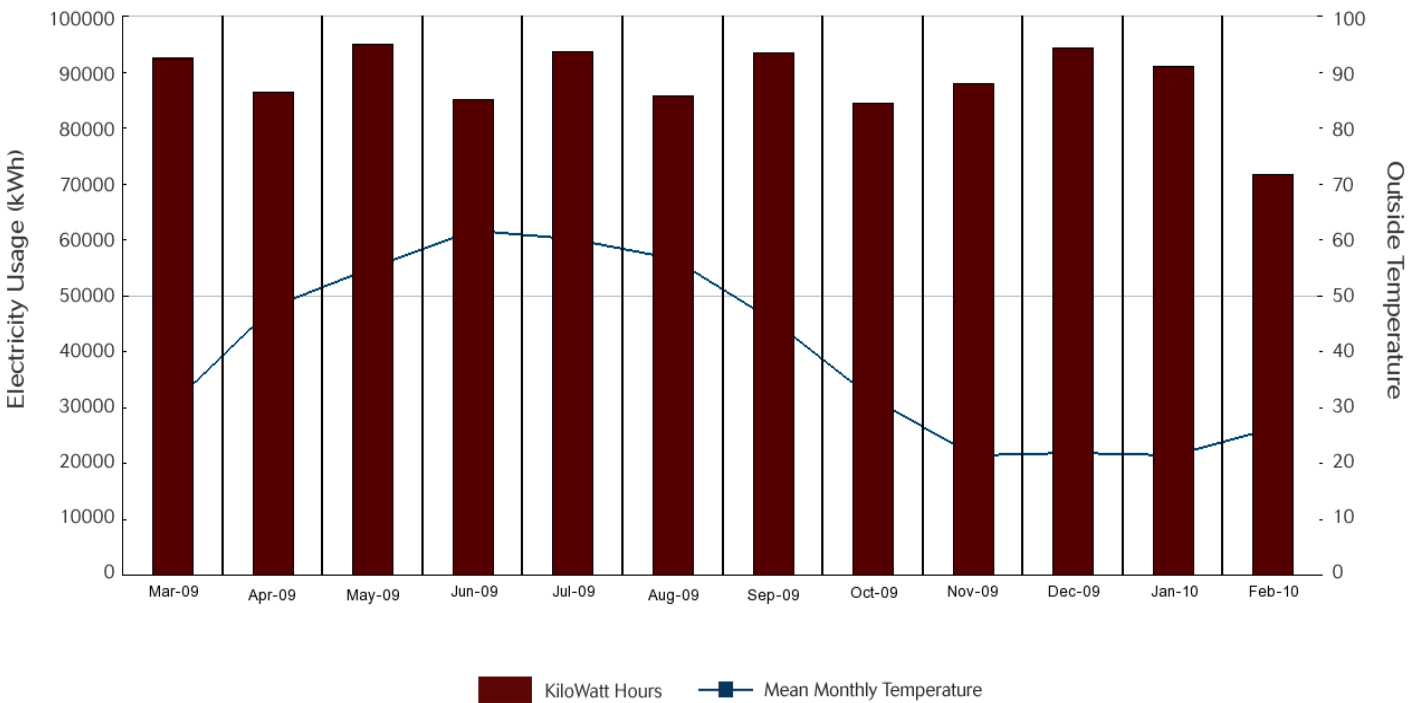
Electricity Consumption

- Electricity comprises 85.9% of your total utility cost, and 61.8% of your total utility consumption.
- Your Total Spend on electricity is \$129,277, so when considering savings opportunities, remember you can only save some percentage of that total.

Monthly Electricity Costs



Electricity Consumption and Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

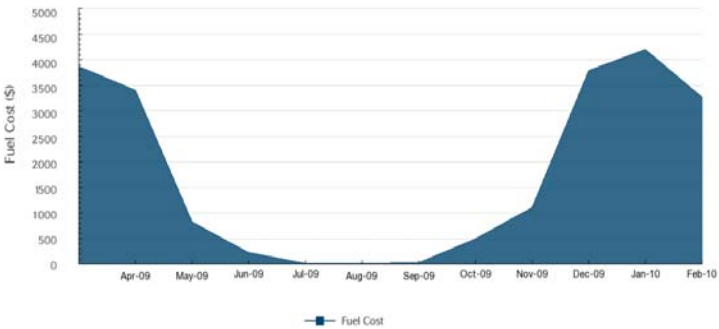


Monthly Fuel Costs

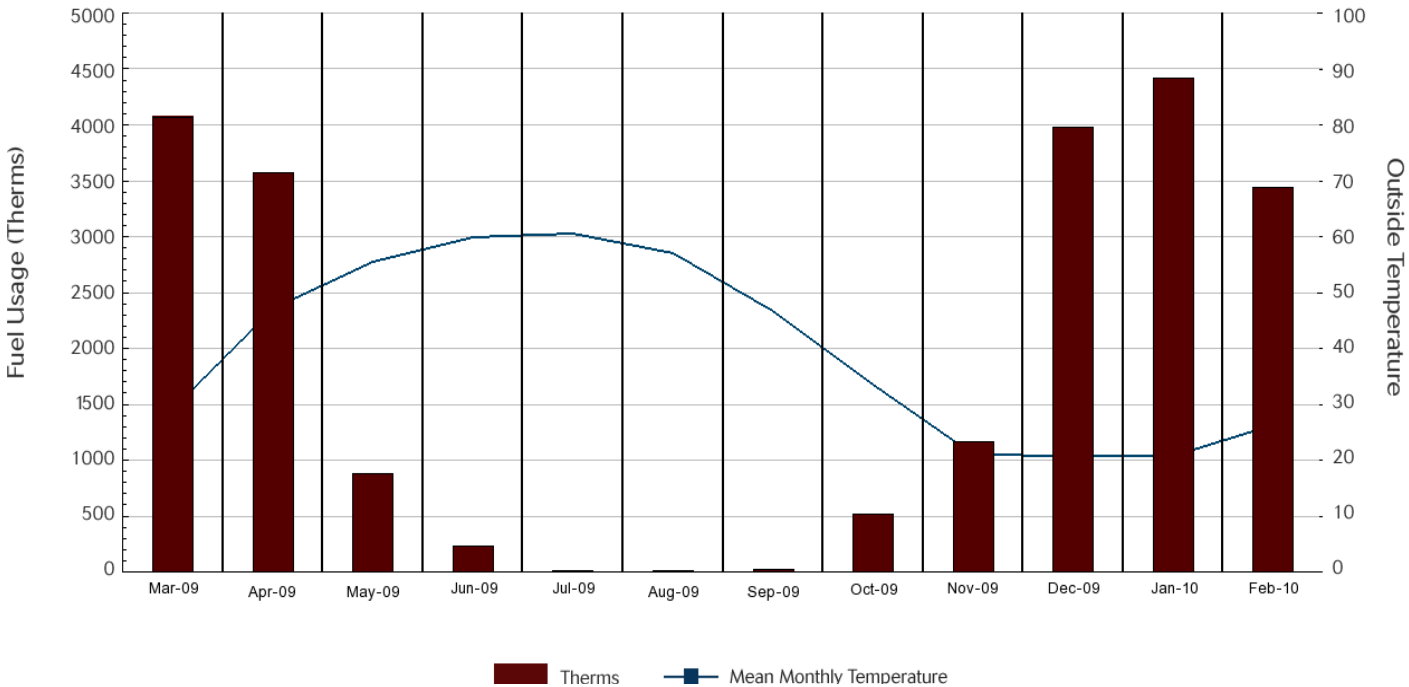
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 14.1% of your total utility cost, and 38.2% of your total utility consumption.
- Your Total Spend on Fuel is \$21,210, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption and Outside Air Temperature



Building Comfort and Ventilation Analysis

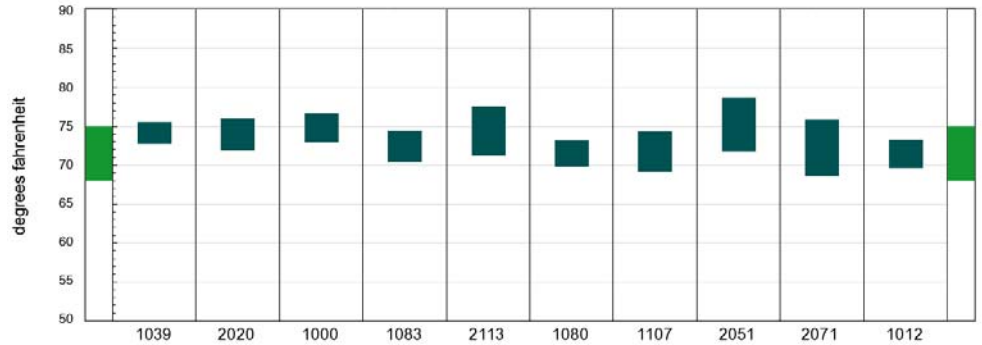
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building has some control issues in specific sections.

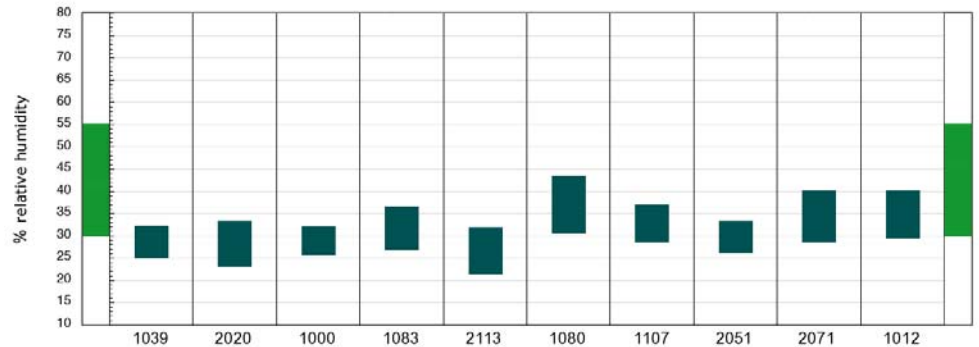
- 5 space(s) were too warm at times
- 5 space(s) were too cool at times
- 4 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 7 space(s) had low relative humidity at times

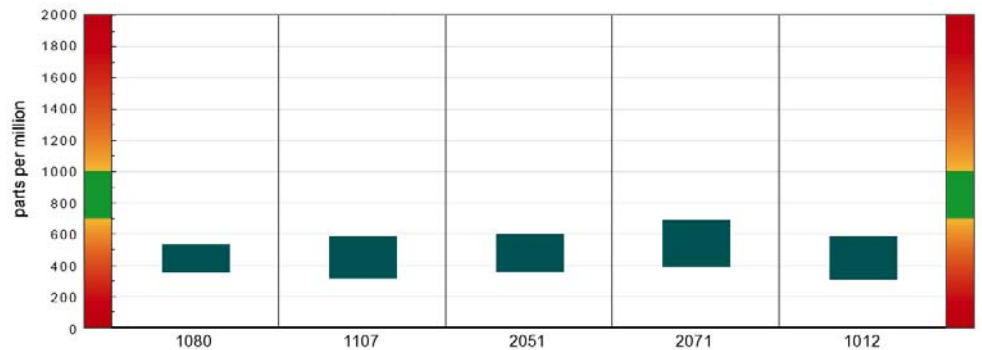


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Monitor Statistics

Energy Savings Opportunities

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Further Comfort & Energy Recommendations

- Increase the amount of heating set back possible during the unoccupied times

* % Time out of Range † Spread Value



Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Monitor Statistics

- Add humidification system
- Improve ventilation control

* % Time out of Range

Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

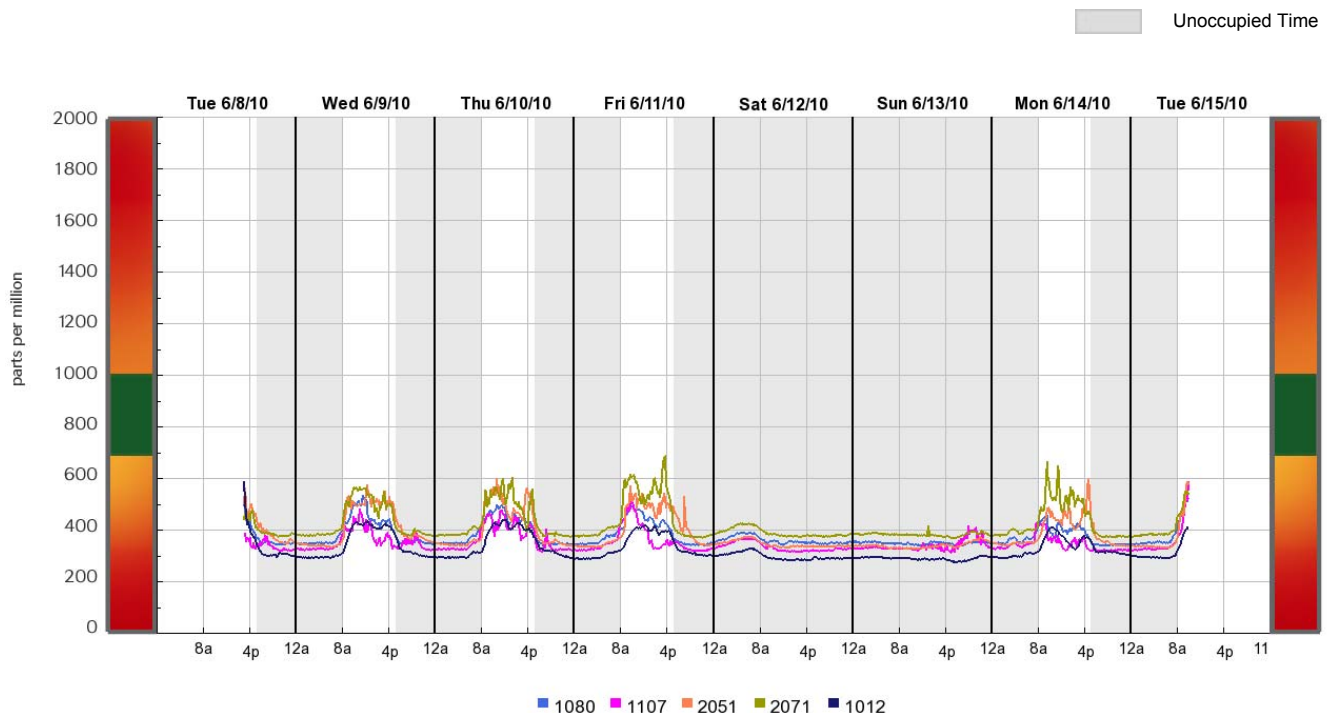
Comfort & Health Recommendations

- No recommendations at this time

Monitor	Alert Lvl	Min	Max	Avg	%
1080		354	533	438	100%
1107		319	586	394	100%
2051		362	598	484	100%
2071		390	687	520	99%
1012		312	588	391	97%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 6.4 average occupied hours

Energy Savings Opportunities

Our findings indicate your building is not wasting energy on lights.

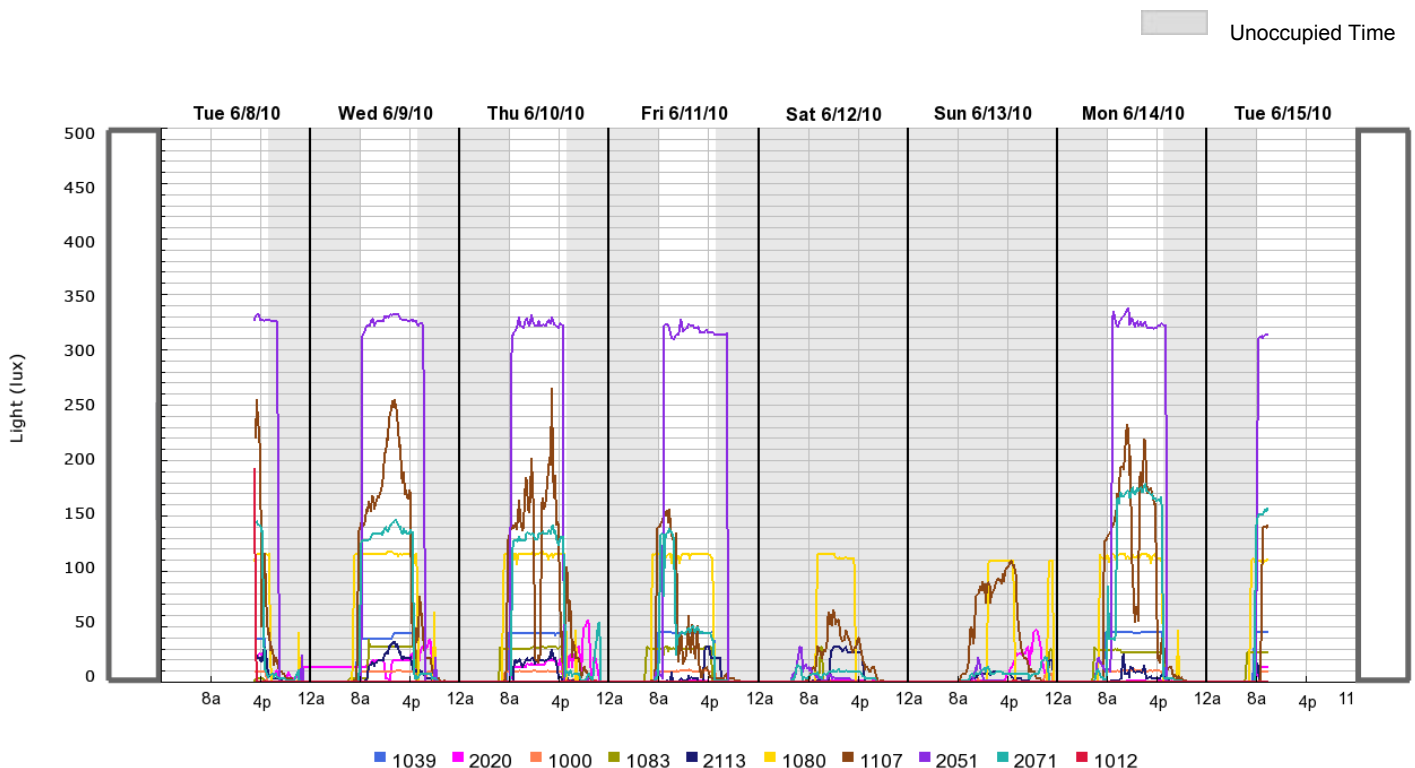
Energy Recommendations Based on Measurements

- No recommendations at this time.

Further Energy Recommendations

- No recommendations at this time.

Monitor		Alert Lvl	Measured On-Time
	1039		6.2 hrs
	2020		2.8 hrs
	1000		5.0 hrs
	1083		5.0 hrs
	2113		4.5 hrs
	1080		8.7 hrs
	1107		4.7 hrs
	2051		6.8 hrs
	2071		4.7 hrs
	1012		1.4 hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99502

Outdoor Temperature

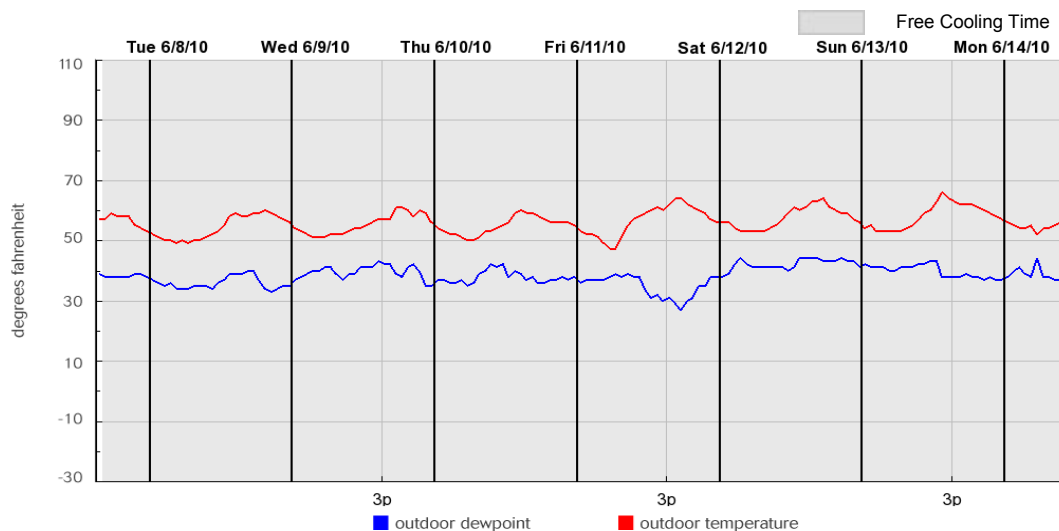
Test Period Avg: 6/8/10 – 6/15/10	Heating Degree Days	Cooling Degree Days
56 °F	9	0

Outdoor Temperature and Dewpoint

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dewpoint during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	XXXX
Contact	XXX
Address	Anchorage, AK 99502
Building Information	
Building Background	Building Usage: Office Building Size (sq ft): 55544 # of Stories: 2 Building Status: Existing Construction type: Cement Block LEED Cert.: None Heating System: None Domestic Hot Water: Gas or Other Fuel Economizer: Yes Cooling System: None
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
1039	20431
2020	20420
1000	20418
1083	20416
2113	20415
1080	20300
1107	20295
2051	20293
2071	20289
1012	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	08:00	68	75	Yes
Tue				
Wed	17:00	68	75	No
Thu				
Fri				

Building Description

Office			
Gross Floor Area	45176	Weekly Operating Hours	45
Number of Workers on Main Shift	275	Number of PCs	425
Office Air-Conditioned	50% or more	Office Heated	50% or more

Warehouse (Unrefrigerated)			
Gross Floor Area	10368	Number of Workers on Main Shift	2
Weekly Operating Hours	45	% Air-Conditioned	0
% Heated	100	Walk-in Refrigeration/Freezer Units	1

Building Controls Information

Current Controls	
Controls Type	Direct Digital
Schedule Type	Time Clock
Air Delivery Method	Variable Air Volume
Air-Flow Modulation	Variable Frequency Drive

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
3/18/09	92320	\$13,234		\$0
4/18/09	86400	\$11,776		\$0
5/13/09	94880	\$12,663		\$0
6/18/09	84960	\$11,746		\$0
7/18/09	93600	\$11,186		\$0
8/18/09	85760	\$10,276		\$0
9/18/09	93440	\$10,918		\$0
10/18/09	84320	\$9,600		\$0
11/18/09	87840	\$9,919		\$0
12/18/09	94240	\$10,842		\$0
1/18/10	91040	\$9,332		\$0
2/18/10	71680	\$7,785		\$0
TOTAL:	1060480	\$129,277		\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
3/16/09 4065		\$3,861
4/16/09 3573		\$3,394
5/16/09 876		\$832
6/9/09 235		\$223
7/16/09 13		\$12
8/16/09 11		\$10
9/16/09 23		\$21
10/16/09 518		\$492
11/16/09 1169		\$1,110
12/16/09 3982		\$3,782
1/16/10 4423		\$4,201
2/16/10 3445		\$3,272
TOTAL:	22333	\$21,210

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE

1021

ASSESSMENT PERFORMED BY

Control Contractors – Anchorage

5660 B Street

Anchorage, Alaska 99518



smart building solutions

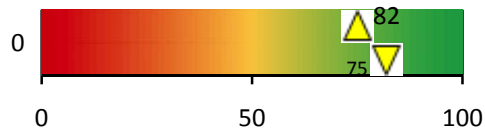


posi⊕iveENERGY

EXECUTIVE SUMMARY



Energy Use

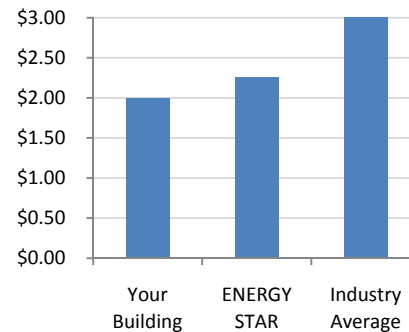


Your building's ENERGY STAR® Energy Performance Rating is 82. Its Energy Use Index is 92 kbtu per sq. ft.

Your building's ENERGY STAR score of 82 ranks you above average versus your peers, and exceeds the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

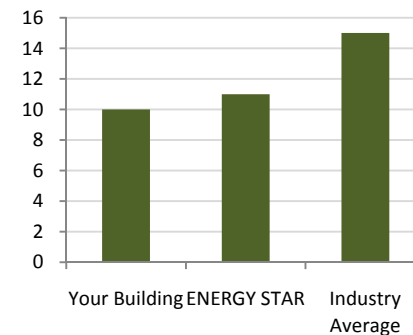


Your building's annual cost per square foot is \$1.99 per sq. ft. overall.

Your building's cost per square foot is \$0.29 more than a building with an ENERGY STAR score of 90. Your annual cost can be reduced by \$20,843 (14.5%) or \$104,215 over 5 years by achieving an ENERGY STAR score of 90.



Carbon Footprint



Your building's annual carbon footprint is 754 metric tons of CO2 or 10lbs per sq. ft.

Your building's carbon emissions are 16.9% more than a building with an ENERGY STAR score of 90 and can be reduced by 1lb per sq. ft. by achieving an ENERGY STAR score of 90.

You could save up to **\$20,843** annually or **\$104,215** over 5 years by raising your ENERGY STAR score to the level of 90

While a detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR database.

How Does Your Building Use Electricity Today?

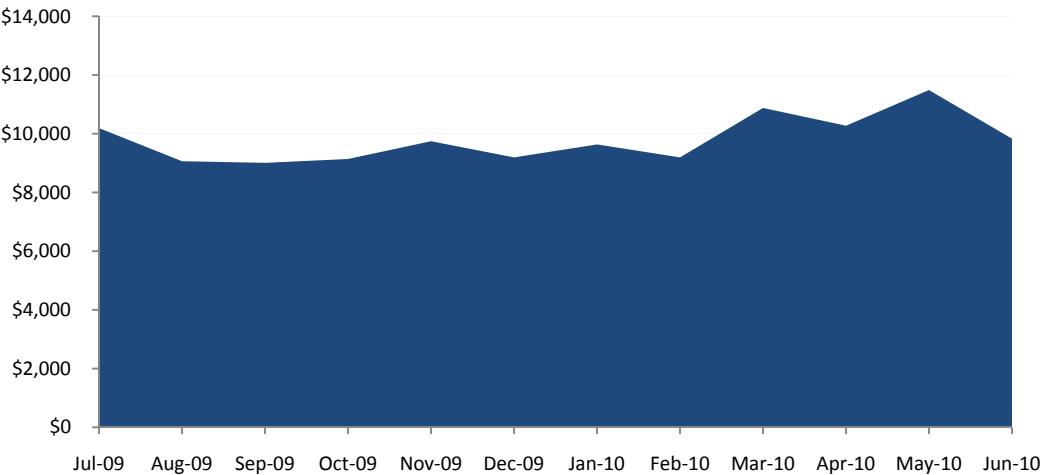
This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheate, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

MONTHLY ELECTRICITY COST

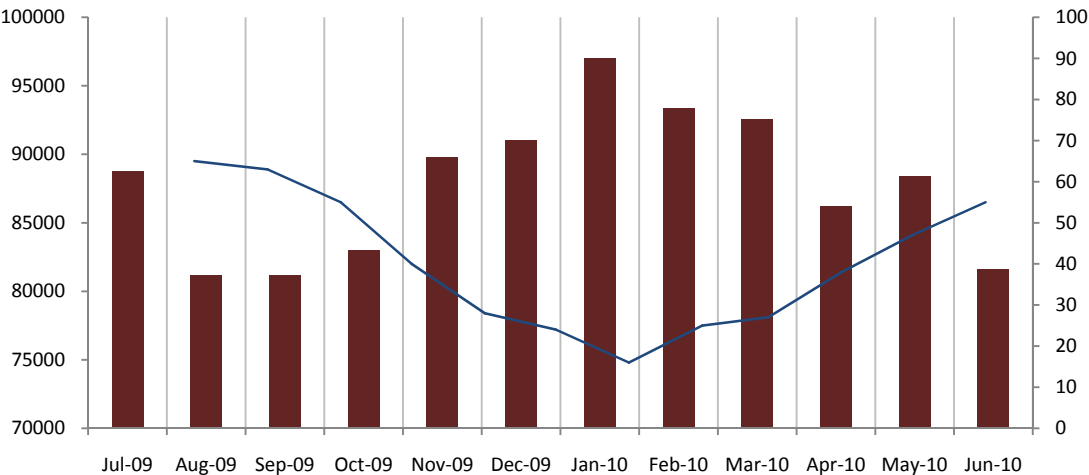
Utility Bill Analysis

Electricity Consumption

- Electricity comprises 80% of your total utility cost, and 54% of your total utility consumption.
- Your Total Spend on electricity is \$117,666, so when considering savings opportunities, remember you



ELECTRICITY CONSUMPTION AND OUTSIDE AIR TEMPERATURE



How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

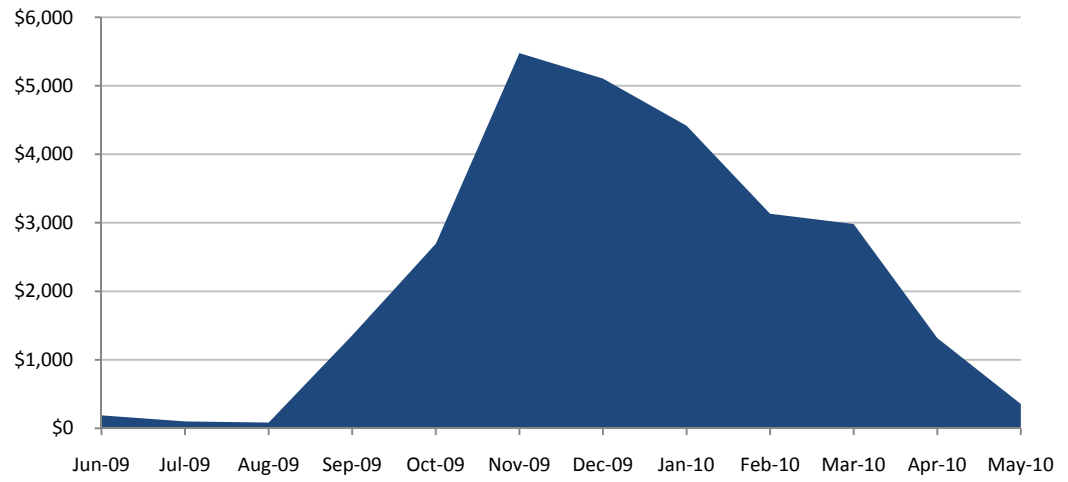
MONTHLY FUEL COST

Utility Bill Analysis

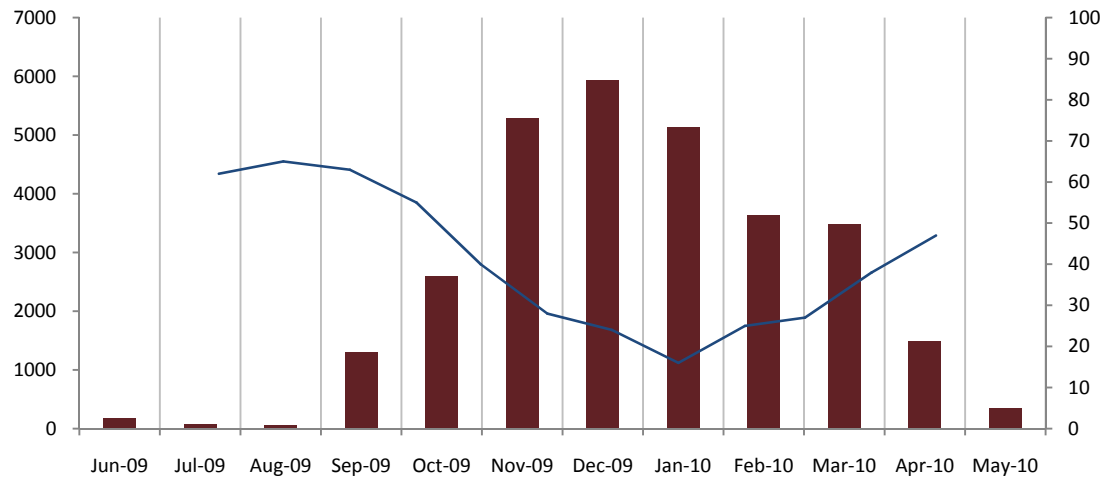
Fuel Consumption

- Fuel comprises 20% of your total utility cost, and 46% of your total utility consumption.

Your total spend on fuel is \$27,221, so when considering savings opportunities, remember you can only save some percentage



FUEL CONSUMPTION AND OUTSIDE AIR TEMPERATURE



Building Comfort and Ventilation Analysis

This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building control system that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

TEMPERATURE FINDINGS

- 0 space(s) were too warm at times
- 0 space(s) were too cool at times
- 0 space(s) had excessive temperature variation

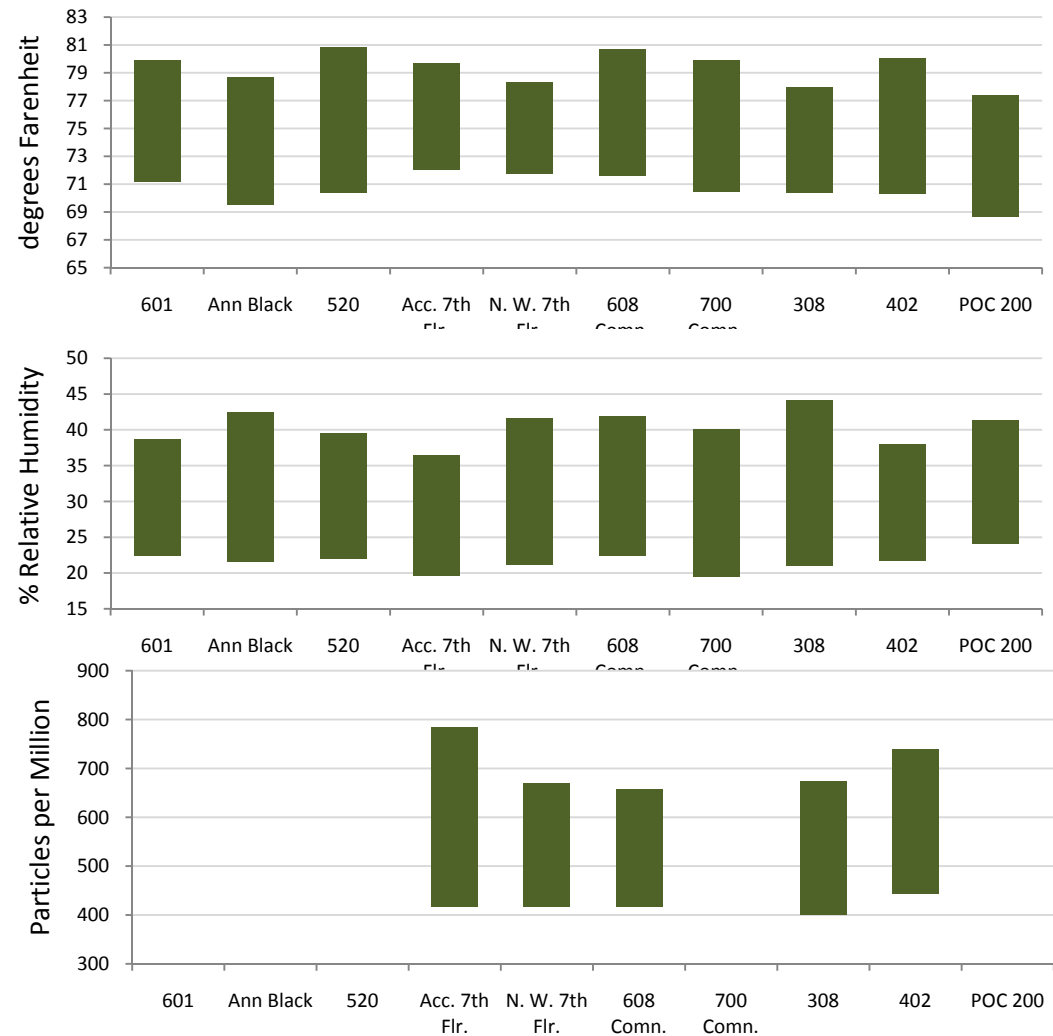
RELATIVE HUMIDITY

- 0 space(s) had high relative humidity at times
- 0 space(s) had low relative humidity

CARBON DIOXIDE

Your building is over ventilated and can save energy by reducing the overall amount of outside air ventilation during mechanical heating and cooling times

- 0 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

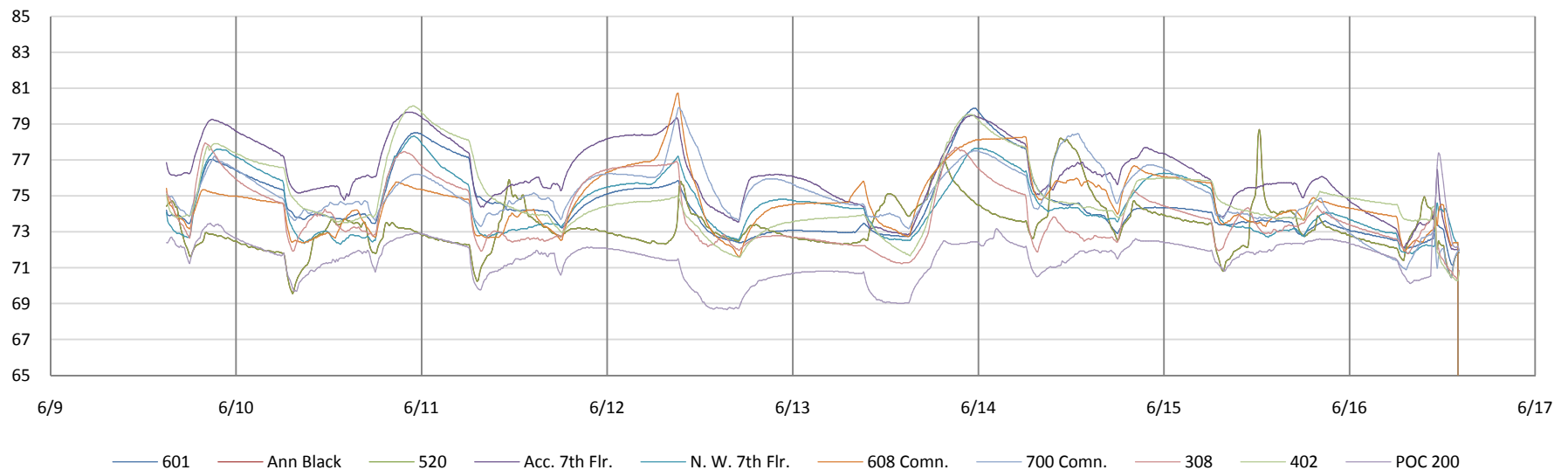
ENERGY SAVING OPPORTUNITIES

Our findings indicate there are several ways to save money by operating your building differently.

Energy recommendations Based on Measurements

- Calibrate thermostats to reduce temperature variation
- Verify the control system is shutting the heat and cooling equipment off
- Move thermostats to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

TIME – TEMPERATURE



Relative-Humidity

Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

ANALYSIS AND RECOMMENDATIONS

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

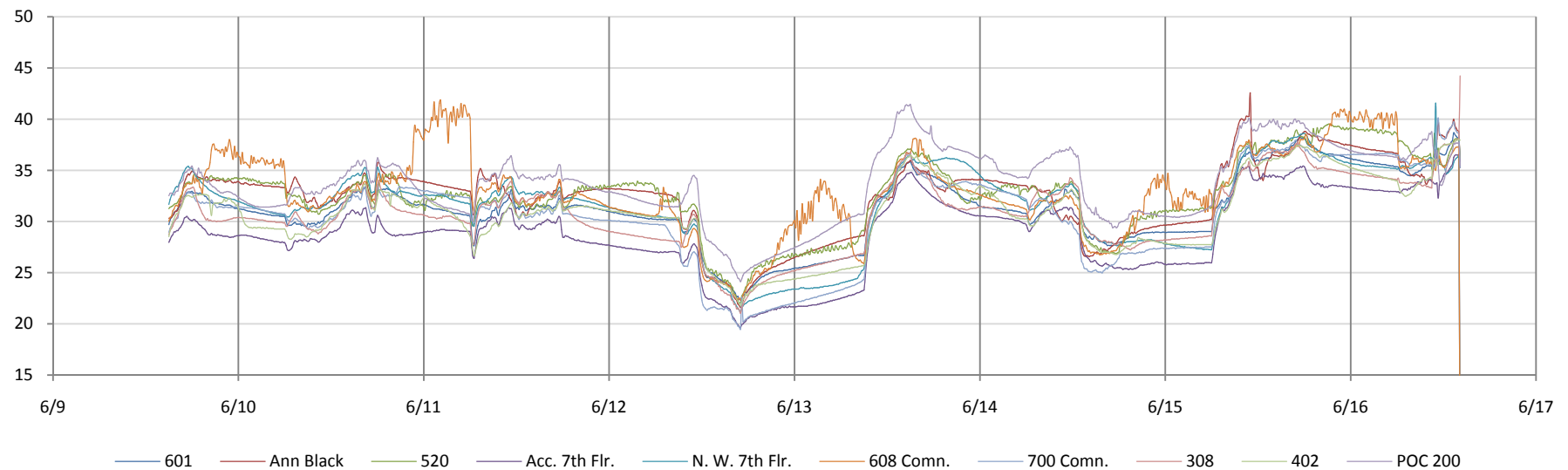
Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

- None

TIME-RELATIVE HUMIDITY



Carbon Dioxide

Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE



Energy Savings Opportunities

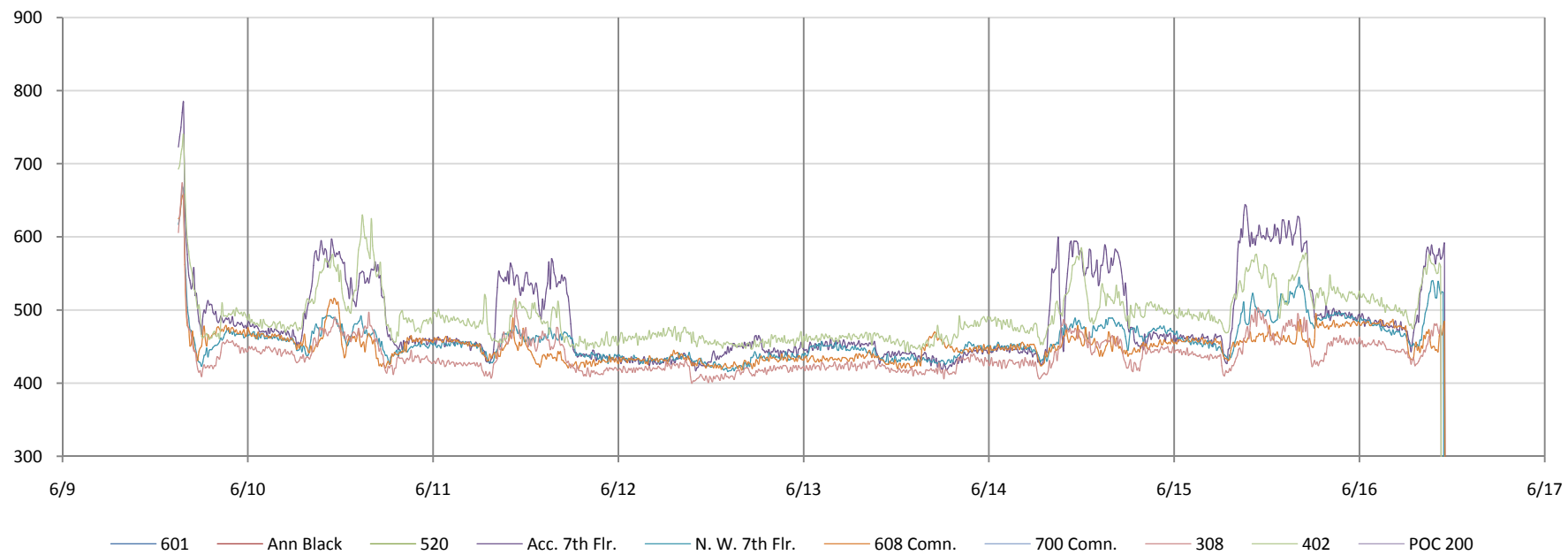
Our findings indicate there are several ways to save money by operating your building different:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck or leaky
- Install demand control ventilation



TIME-CARBON DIOXIDE



Lighting

Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

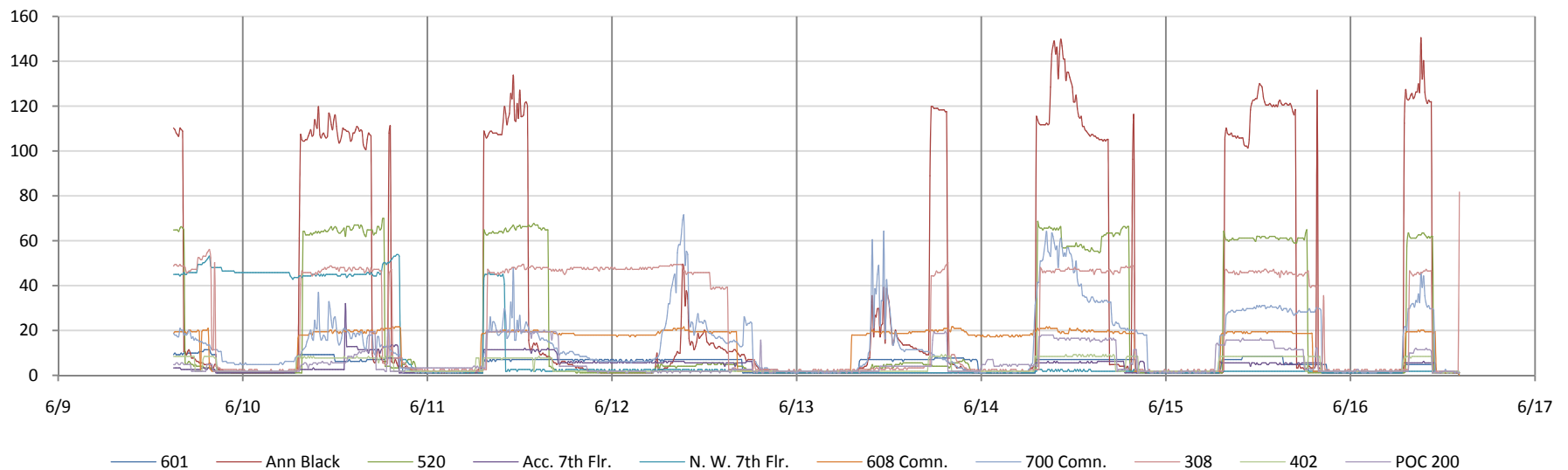
Sources: BOMA, ENERGY STAR, DOE

Energy Saving Opportunities

Energy Recommendations Based on Measurements

- Verify proper lighting levels in each area of the building

TIME LIGHTING





STATEMENT OF ENERGY PERFORMANCE 1021

Building ID: 2236031

For 12-month Period Ending: May 31, 2010¹

Date SEP becomes ineligible: N/A

Date SEP Generated: October 05, 2010

Facility

1021
1021
Anchorage, AK 99501

Facility Owner

N/A

Primary Contact for this Facility

N/A

Year Built: 1980**Gross Floor Area (ft²):** 72,400**Energy Performance Rating² (1-100)** 82**Site Energy Use Summary³**

Electricity - Grid Purchase(kBtu)	3,608,905
Natural Gas (kBtu) ⁴	3,033,071
Total Energy (kBtu)	6,641,976

Energy Intensity⁵

Site (kBtu/ft ² /yr)	92
Source (kBtu/ft ² /yr)	210

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	754
---	-----

Electric Distribution Utility

Anchorage Municipality of

National Average Comparison

National Average Site EUI	140
National Average Source EUI	322
% Difference from National Average Source EUI	-35%
Building Type	Office

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) or a Registered Architect (RA) 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 or RA 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	1021	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	Office	Is this an accurate description of the space in question?		☐
Location	1021, Anchorage , AK 99501	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		☐
Office (Office)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	72,400 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.		☐
Weekly operating hours	55 Hours	Is this the total number of hours per week that the Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		☐
Workers on Main Shift	362	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100. The normal worker density ranges between 0.3 and 5.3 workers per 1000 square feet (92.8 square meters)		☐
Number of PCs	400	Is this the number of personal computers in the Office?		☐
Percent Cooled	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐
Parking (Parking)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	13,000 Sq. Ft.	Is this the total square footage of the entire parking area (enclosed + nonenclosed + open floor area)?		☐

Enclosed Floor Area	0 Sq. Ft.	Is this the total square footage of the enclosed garage space? An enclosed garage is defined as having both sides and a roof.	☐
Non-Enclosed Floor Area (w/roof)	8,000 Sq. Ft.	Is this the total square footage of the nonenclosed garage space? This is typically defined as the portion of the garage above ground (contains no sides but is under a roof).	☐
Open Floor Area (w/o roof)	5,000 Sq. Ft.	Is this the total square footage of the nonenclosed parking area without a roof? This is typically defined as open parking lots or the very top level of an above ground parking garage.	☐
Weekly Hours of Access	168 Hours	Is this the total number of hours per week when it is possible for a vehicle to enter or exit?	☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Anchorage Municipality of

Fuel Type: Electricity		
Meter: Carr Gottstein 1.1837201 (kWh (thousand Watt-hours)) Space(s): Entire Facility Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
04/15/2010	05/14/2010	86,200.00
03/15/2010	04/14/2010	92,600.00
02/15/2010	03/14/2010	93,400.00
01/15/2010	02/14/2010	97,000.00
12/15/2009	01/14/2010	91,000.00
11/15/2009	12/14/2009	89,800.00
10/15/2009	11/14/2009	83,000.00
09/15/2009	10/14/2009	81,200.00
08/15/2009	09/14/2009	81,200.00
07/15/2009	08/14/2009	88,800.00
06/15/2009	07/14/2009	90,800.00
Carr Gottstein 1.1837201 Consumption (kWh (thousand Watt-hours))		975,000.00
Carr Gottstein 1.1837201 Consumption (kBtu (thousand Btu))		3,326,700.00
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		3,326,700.00
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☐
Fuel Type: Natural Gas		
Meter: 105735 (ccf (hundred cubic feet)) Space(s): Entire Facility		
Start Date	End Date	Energy Use (ccf (hundred cubic feet))
04/08/2010	05/07/2010	1,496.00
03/08/2010	04/07/2010	3,492.00
02/08/2010	03/07/2010	3,641.00
01/08/2010	02/07/2010	5,139.00
12/08/2009	01/07/2010	5,941.00
11/08/2009	12/07/2009	5,291.00
10/08/2009	11/07/2009	2,598.00
09/08/2009	10/07/2009	1,302.00
08/08/2009	09/07/2009	69.00
07/08/2009	08/07/2009	85.00
06/08/2009	07/07/2009	173.00

105735 Consumption (ccf (hundred cubic feet))	29,227.00
105735 Consumption (kBtu (thousand Btu))	3,007,458.30
Total Natural Gas Consumption (kBtu (thousand Btu))	3,007,458.30
Is this the total Natural Gas consumption at this building including all Natural Gas 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.

☐

On-Site Solar and Wind Energy

Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.

☐

Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA 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

1021
1021
Anchorage , AK 99501

Facility Owner

N/A

Primary Contact for this Facility

N/A

General Information

1021	
Gross Floor Area Excluding Parking: (ft ²)	72,400
Year Built	1980
For 12-month Evaluation Period Ending Date:	May 31, 2010

Facility Space Use Summary

Office		Parking	
Space Type	Office	Space Type	Parking
Gross Floor Area(ft ²)	72,400	Gross Floor Area(ft ²)	13,000
Weekly operating hours	55	Enclosed Floor Area	0
Workers on Main Shift	362	Non-Enclosed Floor Area (w/roof)	8,000
Number of PCs	400	Open Floor Area (w/o roof)	5,000
Percent Cooled	50% or more	Weekly Hours of Access	168
Percent Heated	50% or more		

Energy Performance Comparison

Performance Metrics	Evaluation Periods		Comparisons		
	Current (Ending Date 05/31/2010)	Baseline (Ending Date 03/31/2010)	Rating of 75	Target	National Average
Energy Performance Rating	82	82	75	90	50
Energy Intensity					
Site (kBtu/ft ²)	92	93	104	78	140
Source (kBtu/ft ²)	210	211	239	180	322
Energy Cost					
\$/year	\$ 144,204.38	\$ 141,730.85	\$ 163,727.14	\$ 123,361.24	\$ 220,424.90
\$/ft ² /year	\$ 1.99	\$ 1.96	\$ 2.26	\$ 1.70	\$ 3.04
Greenhouse Gas Emissions					
MtCO ₂ e/year	754	755	856	645	1,153
kgCO ₂ e/ft ² /year	10	10	11	9	15

More than 50% of your building is defined as Office. 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.

Statement of Energy Performance

2010

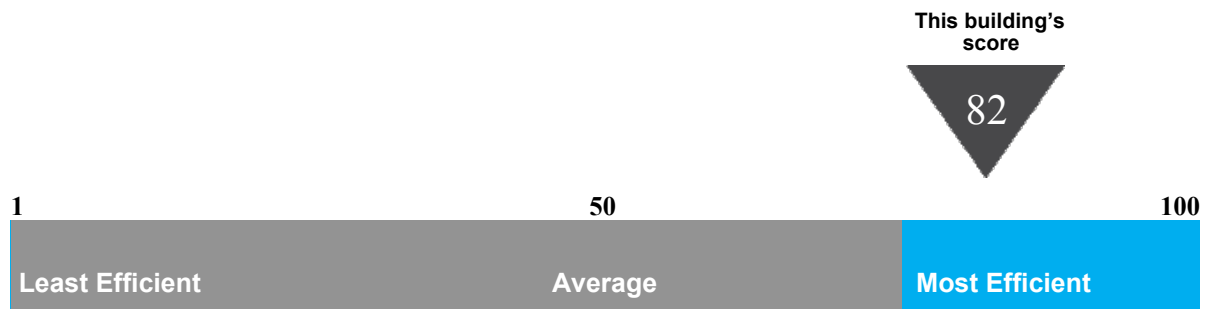
1021

1021

Anchorage , AK 99501

Portfolio Manager Building ID: 2236031

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit energystar.gov/benchmark.



This building uses 210 kBtu per square foot per year.*

*Based on source energy intensity for the 12 month period ending May 2010

Buildings with a score of
75 or higher may qualify
for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at energystar.gov

Date of certification



Date Generated: 10/05/2010

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1022

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

CHUGACH
POWERING ALASKA'S FUTURE

CONTROL
CONTRACTORS

smart building solutions



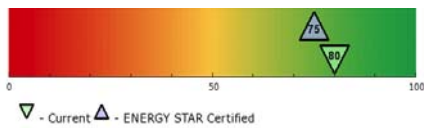
positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

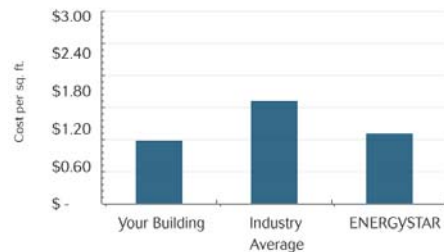


Your building's ENERGY STAR® Energy Performance Rating is **80**. Its Energy Use Index is **63 kbtu per sq. ft.**

Your building's ENERGY STAR score of 80 ranks you above average versus your peers, but your building may still have good opportunity to raise your ENERGY STAR score.



Cost

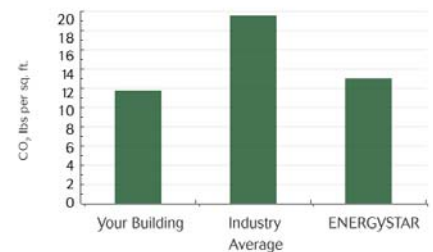


Your building's annual cost per square foot is **\$0.98 per sq. ft.** overall.

Your annual cost can be reduced by \$24,115 or 23.0% by achieving an ENERGY STAR score of 90.



Carbon Footprint



Your building's annual carbon footprint is **568 metric tons of CO₂** or **11.70 lbs per sq. ft.**

Your building's carbon emissions are 30.0% more than an energy efficient facility, and can further be reduced by 3 lbs per sq. ft. by achieving an ENERGY STAR score of 90.

You could save up to **\$24,115** annually or **\$120,575** over 5 years by raising your ENERGY STAR score to the level of 90.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Your building is out of control
- Your building is over-ventilated



How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

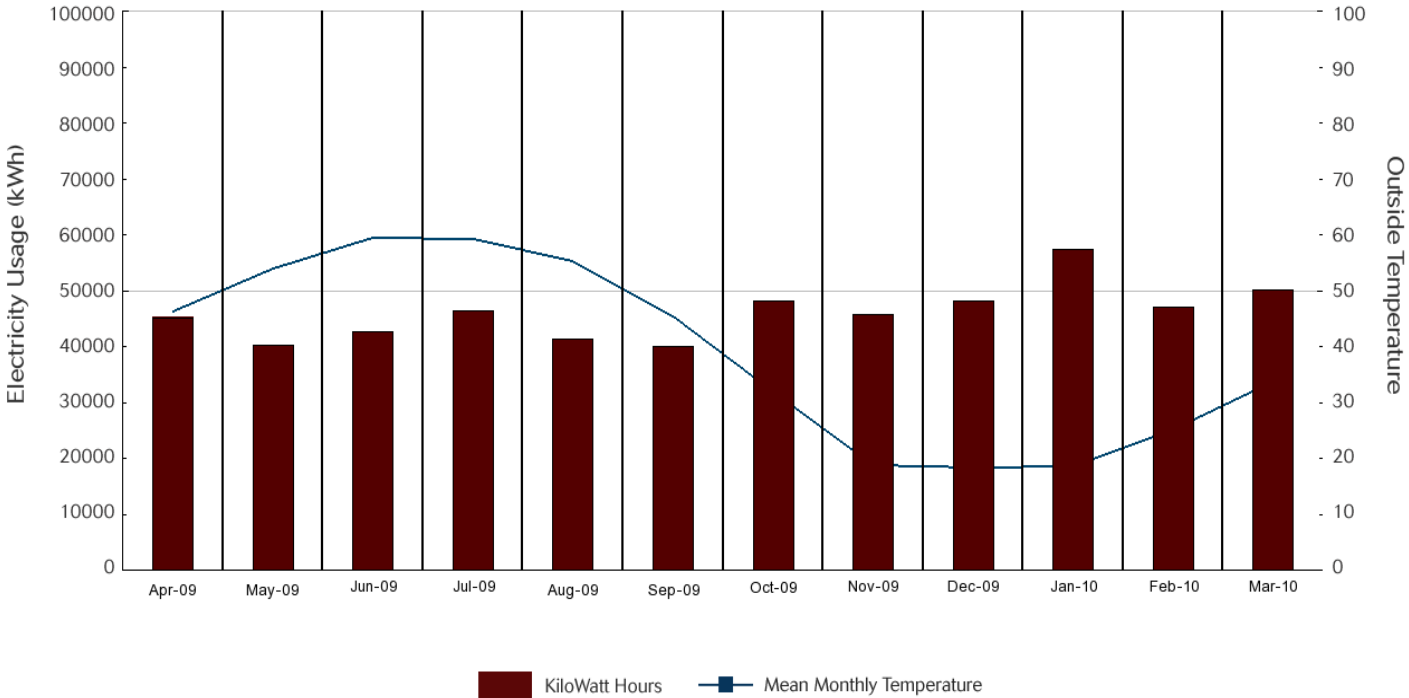
Electricity Consumption

- Electricity comprises 57.6% of your total utility cost, and 27.9% of your total utility consumption.
- Your Total Spend on electricity is \$60,417, so when considering savings opportunities, remember you can only save some percentage of that total.

Monthly Electricity Costs



Electricity Consumption and Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

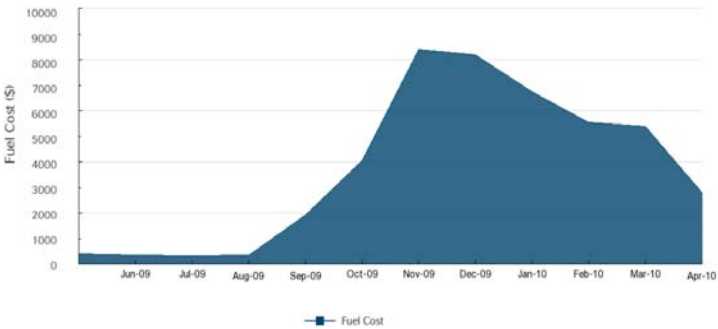


Monthly Fuel Costs

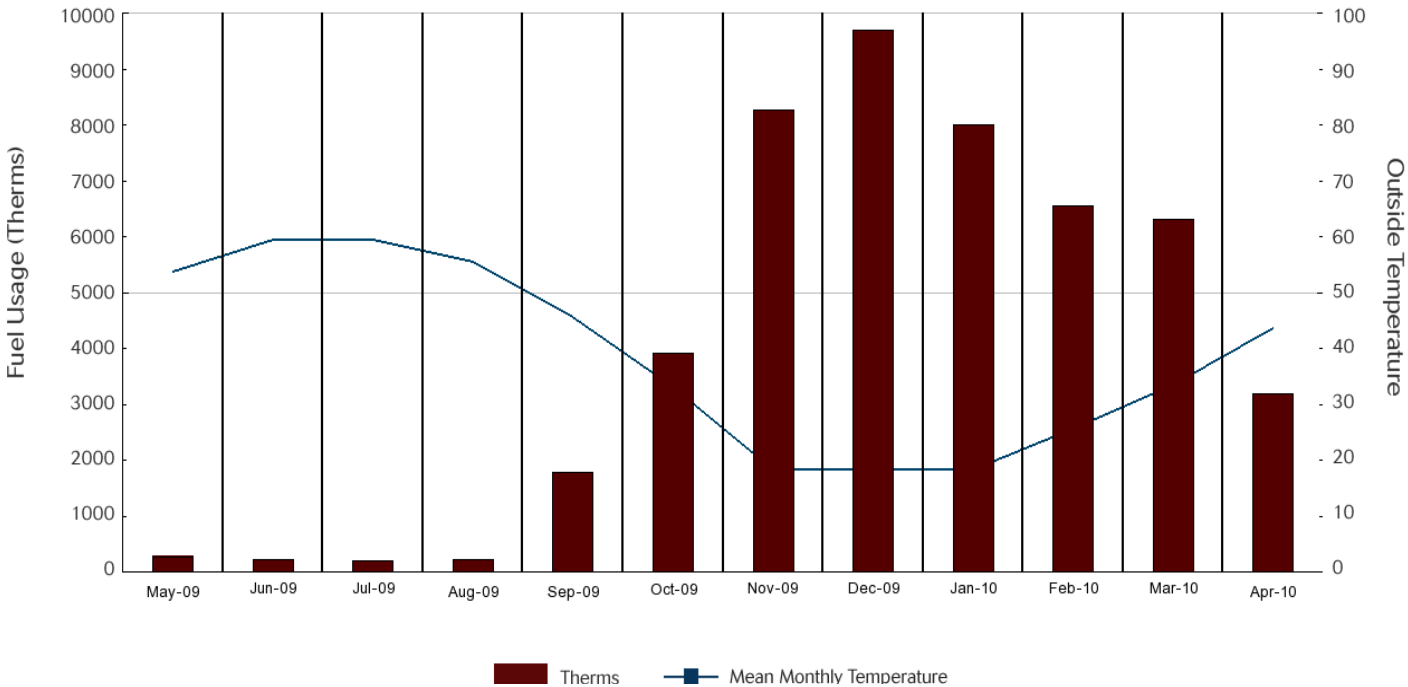
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 42.4% of your total utility cost, and 72.1% of your total utility consumption.
- Your Total Spend on Fuel is \$44,469, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption and Outside Air Temperature



Building Comfort and Ventilation Analysis

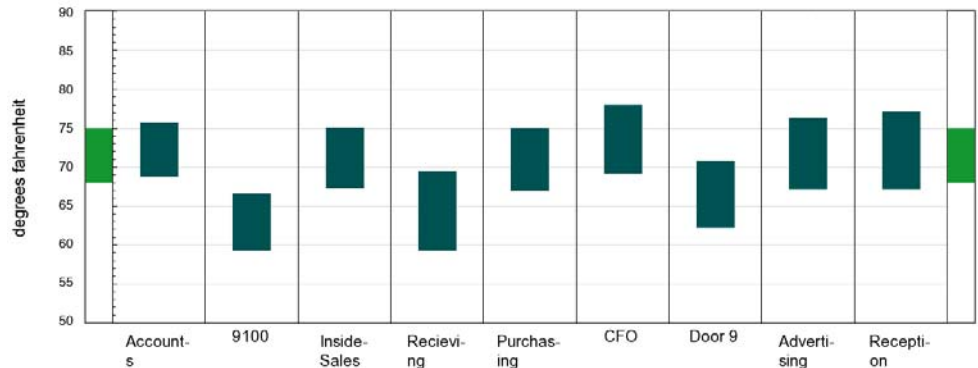
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building is out of control with ample opportunity to save energy.

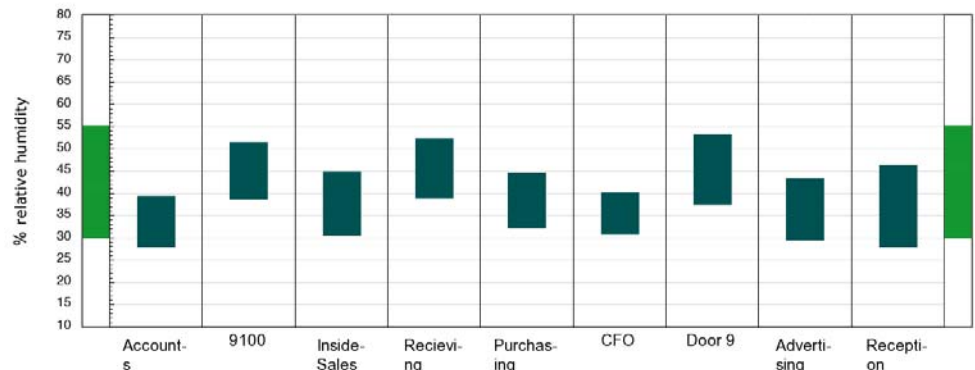
- 8 space(s) were too warm at times
- 7 space(s) were too cool at times
- 9 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 1 space(s) had low relative humidity at times

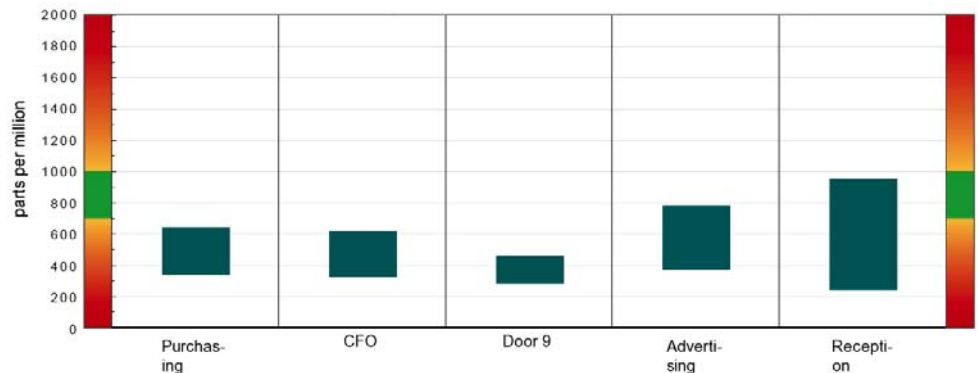


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 1 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: $\pm 1^\circ\text{F}$]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating setpoint and raising the cooling setpoint can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating Setpoint is 68 / 68
	Occupied/Unoccupied Cooling Setpoint is 75 / 75

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Further Comfort & Energy Recommendations

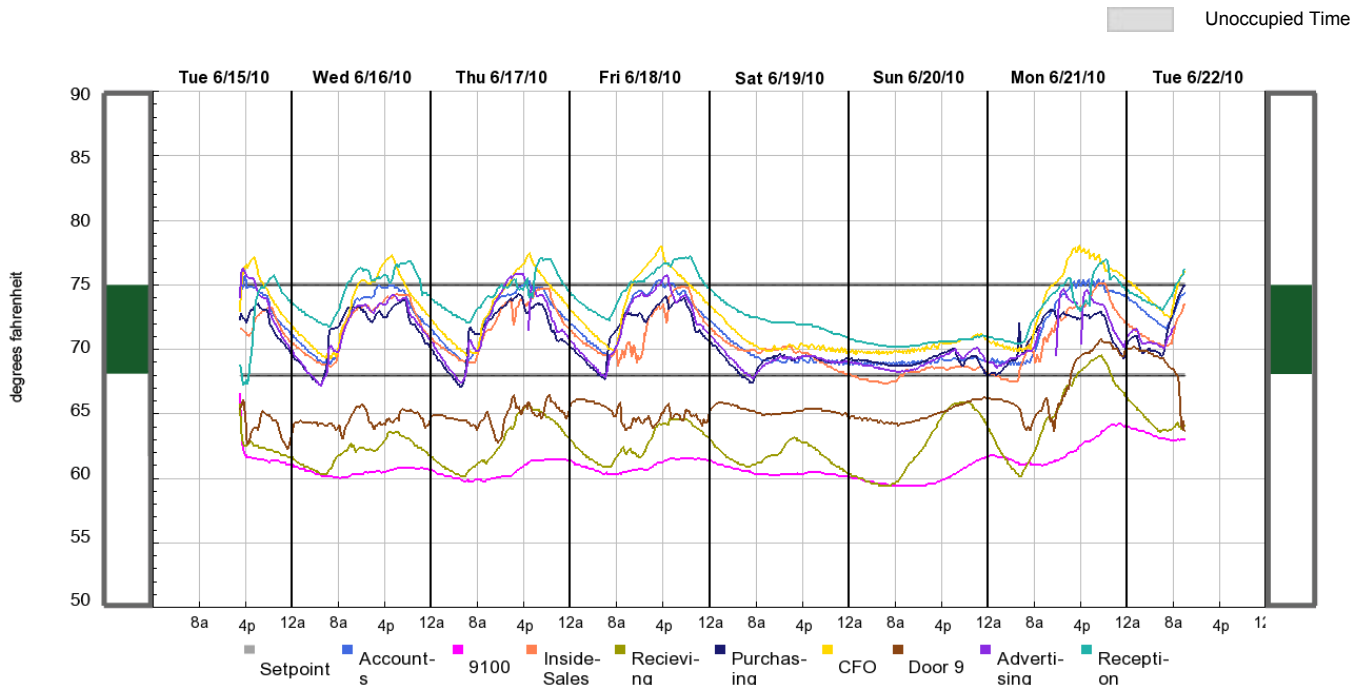
- Increase the amount of heating set back possible during the unoccupied times

Monitor Statistics

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%To Pt	SV†
Accounts		69	75	72	5%	5
9100		59	64	61	93%	20
Inside Sales		67	75	71	9%	6
Receiving		59	69	63	95%	6
Purchasing		67	75	71	8%	5
CFO		69	78	73	25%	6
Door 9		63	71	65	88%	8
Advertising		67	76	71	12%	9
Reception		68	77	73	25%	8

These statistics are for occupied times only.

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

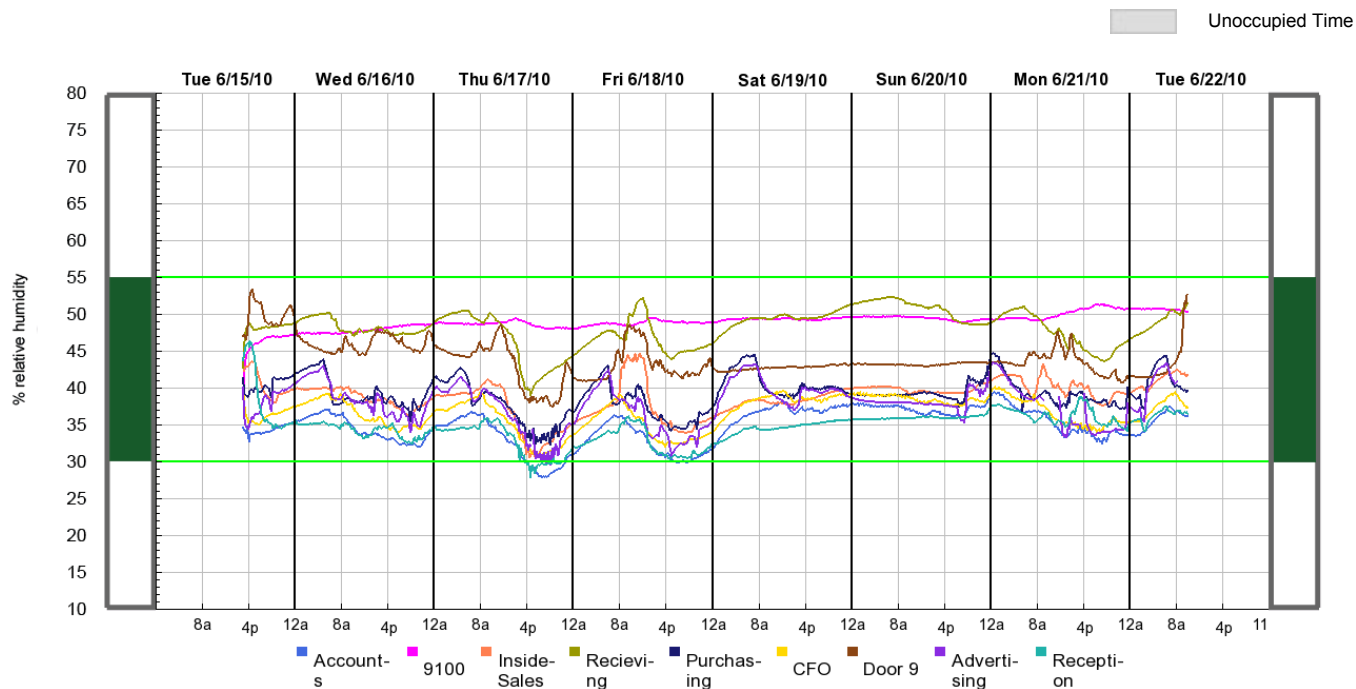
- Add humidification system
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	%
Accounts		28	39	35	7%
9100		39	51	49	0%
Inside Sales		30	45	39	0%
Receiving		39	52	48	0%
Purchasing		32	45	39	0%
CFO		31	40	37	0%
Door 9		37	53	44	1%
Advertising		30	43	38	2%
Reception		28	46	35	3%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

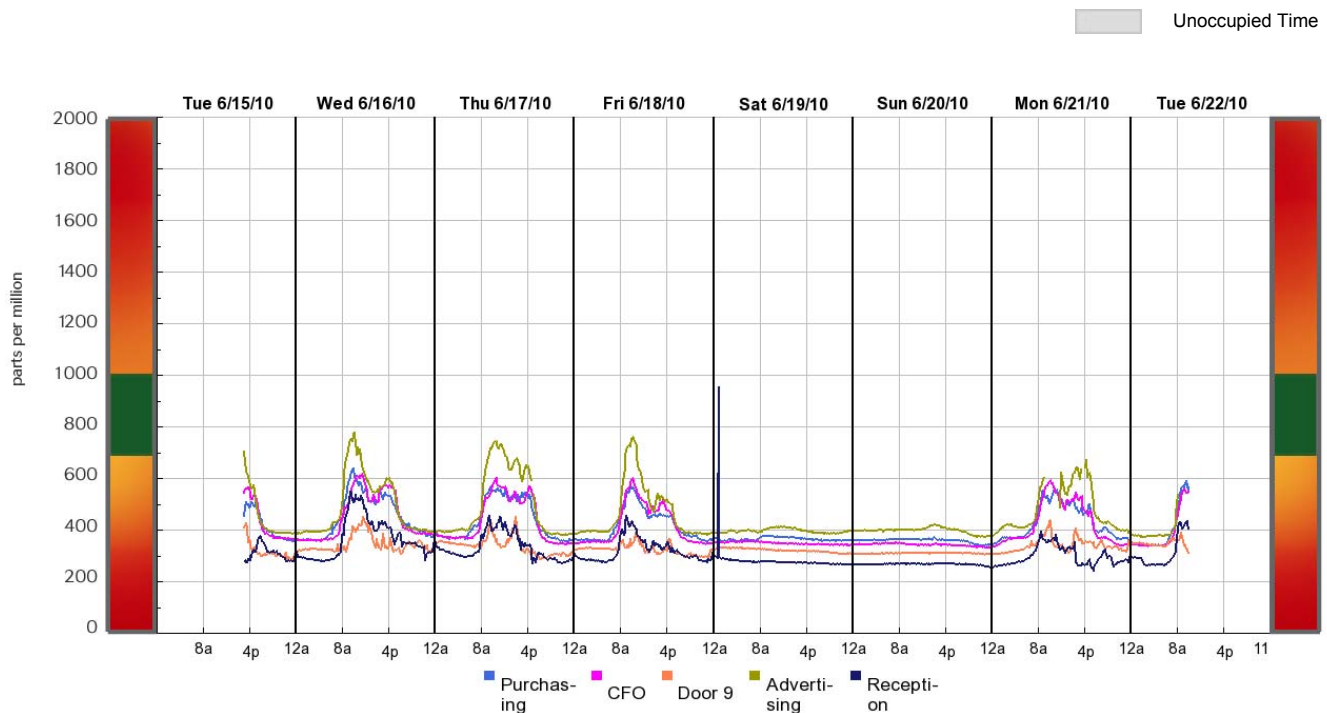
Comfort & Health Recommendations

- Increase the amount of ventilation into the building.

Monitor	Alert Lvl	Min	Max	Avg	% Time out of Range
Purchasing		338	640	408	98%
CFO		330	618	402	98%
Door 9		283	454	329	98%
Advertising		372	778	448	95%
Reception		240	953	309	99%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 24 average occupied hours

Energy Savings Opportunities

Our findings indicate your building is not wasting energy on lights.

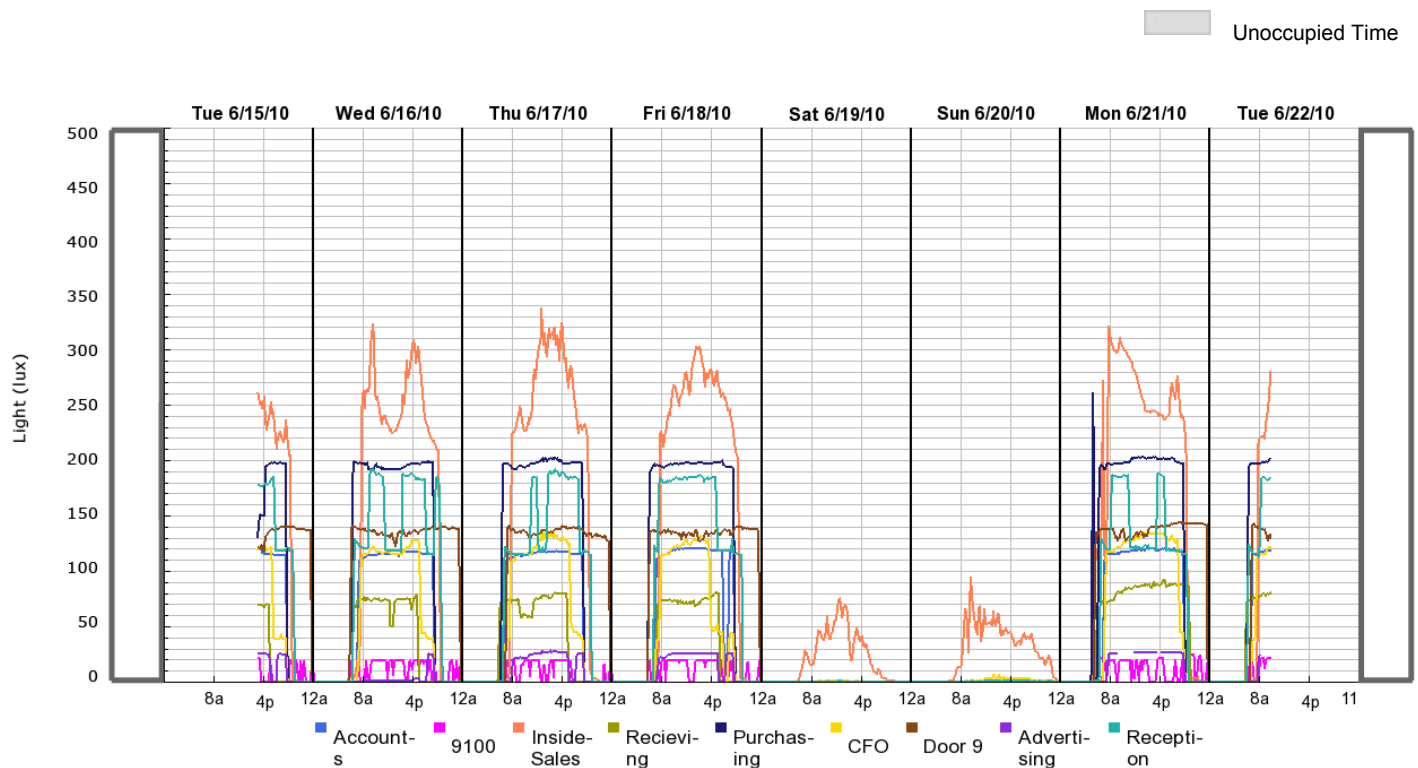
Energy Recommendations Based on Measurements

- No recommendations at this time.

Further Energy Recommendations

- No recommendations at this time.

Monitor		Alert Lvl	Measured On-Time
	Accounts		9.3 hrs
	9100		5.2 hrs
	Inside Sales		7.5 hrs
	Recieving		6.1 hrs
	Purchasing		9.0 hrs
	CFO		8.5 hrs
	Door 9		10. hrs
	Advertising		6.3 hrs
	Reception		9.2 hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99501

Outdoor Temperature

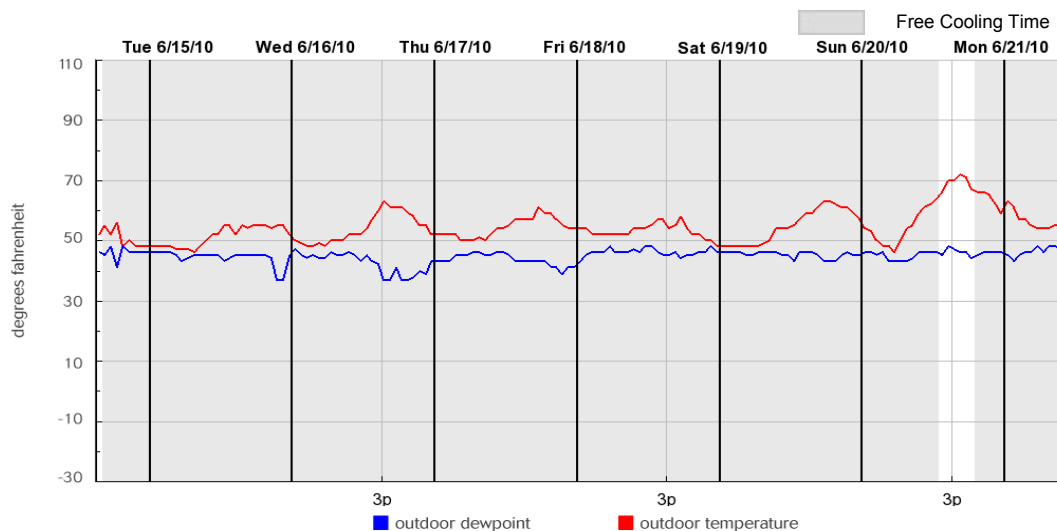
Test Period Avg: 6/15/10 – 6/22/10	Heating Degree Days	Cooling Degree Days
54 °F	11	0

Outdoor Temperature and Dew Point

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dew point during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	XXX
Contact	XXX
Address	Anchorage, AK 99501
Building Information	
Building Background	Building Usage: Warehouse (Unrefrigerated) Building Size (sq ft): 107000 # of Stories: 2 Building Status: Existing Construction type: Masonry LEED Cert.: None Heating System: Packaged Gas Unit Domestic Hot Water: Gas or Other Fuel (Low Usage) Economizer: No Cooling System: None
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
Accounts	20420
9100	20418
Inside Sales	20416
Receiving	20415
Purchasing	20300
CFO	20295
Door 9	20293
Advertising	20289
Reception	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	00:00	68	75	Yes
Tue				
Wed				
Thu	23:59	68	75	No
Fri				
Sat				
Sun				

Building Description

Office			
Gross Floor Area	17000	Weekly Operating Hours	45
Number of Workers on Main Shift	40	Number of PCs	60
Office Air-Conditioned	50% or more	Office Heated	50% or more

Warehouse (Unrefrigerated)			
Gross Floor Area	90000	Number of Workers on Main Shift	42
Weekly Operating Hours	85	% Air-Conditioned	0
% Heated	100	Walk-in Refrigeration/Freezer Units	0

Parking			
Enclosed Floor Area	0	Non-Enclosed Floor Area (w/roof)	0
Open Floor Area (w/o roof)	40000	Weekly Hours of Access	168

Building Controls Information

Current Controls	
Controls Type	Thermostat
Schedule Type	On/Off (Auto fan)
Air Delivery Method	Constant Volume (CV)
Air-Flow Modulation	N/A

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
4/16/09	44960	\$4,865		\$0
5/16/09	40200	\$4,474		\$0
6/16/09	42720	\$4,779		\$0
7/16/09	46280	\$5,113		\$0
8/16/09	41360	\$4,655		\$0
9/16/09	40080	\$4,567		\$0
10/16/09	48200	\$5,347		\$0
11/16/09	45760	\$5,211		\$0
12/16/09	48240	\$4,992		\$0
1/16/10	57360	\$5,592		\$0
2/16/10	47000	\$4,879		\$0
3/16/10	50160	\$5,944		\$0
TOTAL:	552320	\$60,417		\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
5/15/09 269		\$407
6/15/09 214		\$343
7/15/09 196		\$324
8/15/09 219		\$347
9/15/09 1774		\$1,907
10/15/09 3922		\$4,062
11/15/09 8259		\$8,412
12/15/09 9690		\$8,181
1/15/10 8002		\$6,748
2/15/10 6558		\$5,553
3/15/10 6304		\$5,398
4/15/10 3176		\$2,787
TOTAL:	48583	\$44,469

Commercial Energy Savings Assessment



Watt Buster



ASSESSMENT SITE

1023

ASSESSMENT PERFORMED BY

Control Contractors – Anchorage

5660 B Street

Anchorage, Alaska 99518



smart building solutions



posi⊕iveENERGY

EXECUTIVE SUMMARY



Energy Use

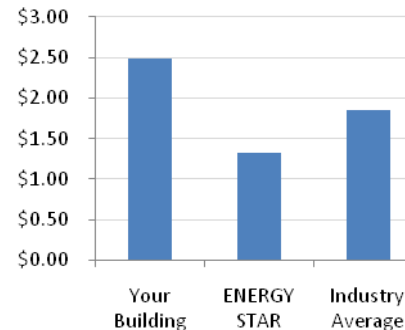
This facility has been as having a EnergyStar Score of 35 of 100

Your building's ENERGY STAR® Energy Performance Rating is 25. Its Energy Use Index is 107 kbtu per sq. ft.

Your building's ENERGY STAR score of 25 ranks you below average versus your peers, and falls well below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

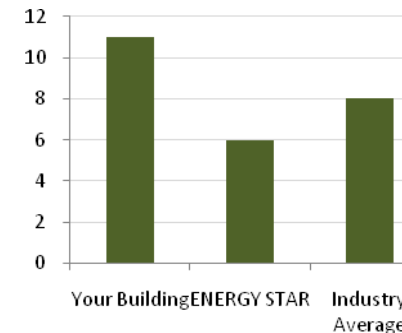


Your building's annual cost per square foot is \$2.48 per sq. ft. overall.

Your building's cost per square foot is \$0.63 more than the industry average. Your annual cost can be reduced by \$12,527 (25.5%) or \$62,635 over 5 years by achieving an ENERGY STAR score of 50.



Carbon Footprint



Your building's annual carbon footprint is 228 metric tons of CO2 or 11lbs per sq. ft.

Your building's carbon emissions are 34.1% more than the industry average, and can be reduced by 2 lbs per sq. ft. by achieving an ENERGY STAR score of 50.

You could save up to **\$7,802** annually or **\$39,010** over 5 years by raising your ENERGY STAR score to the level of 50

While a detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR database.

How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

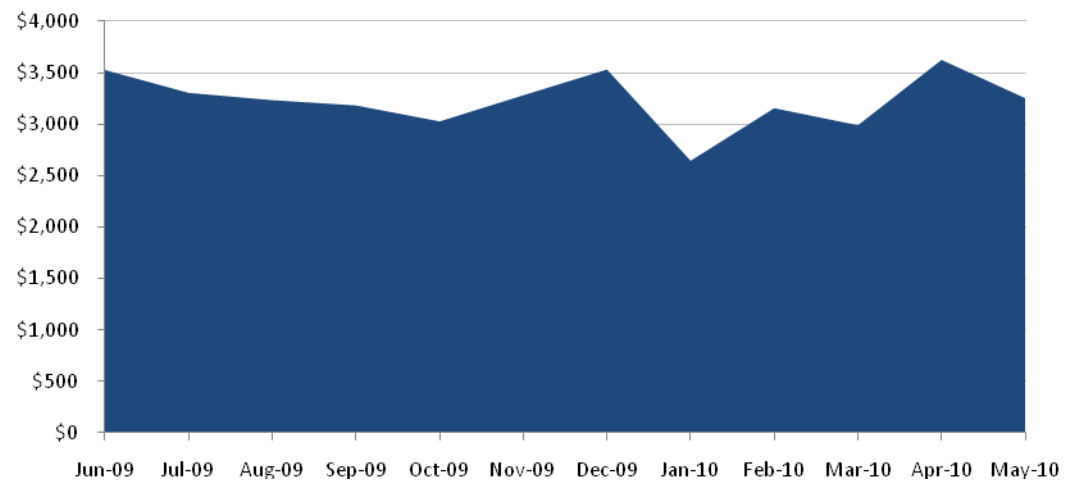


MONTHLY ELECTRICTY COST

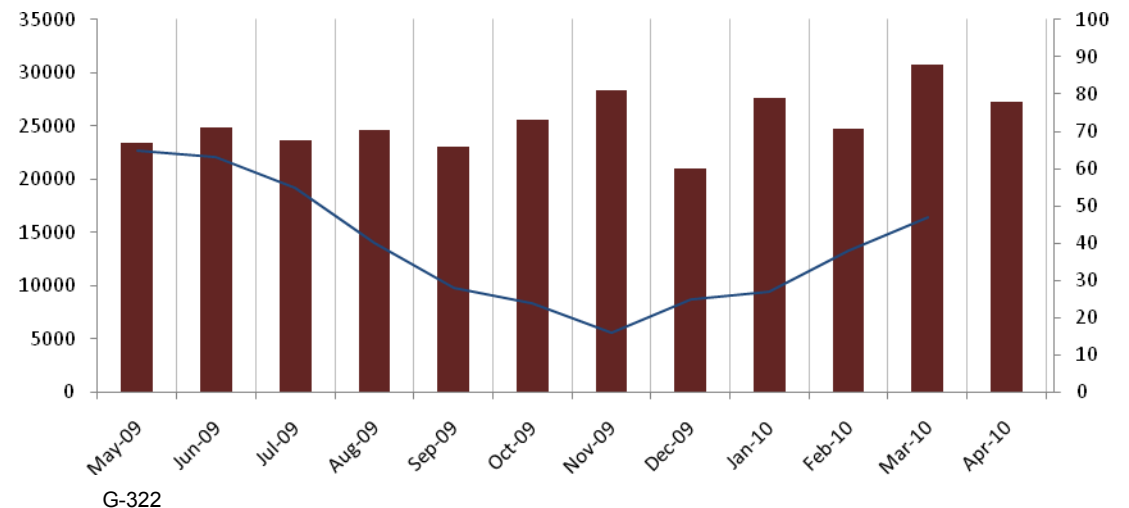
Utility Bill Analysis

Electricity Consumption

- Electricity comprises 66.0% of your total utility cost, and 35.0% of your total utility consumption.
- Your Total Spend on electricity is \$38,799, so when considering savings opportunities, remember you can only save some percentage of that total.

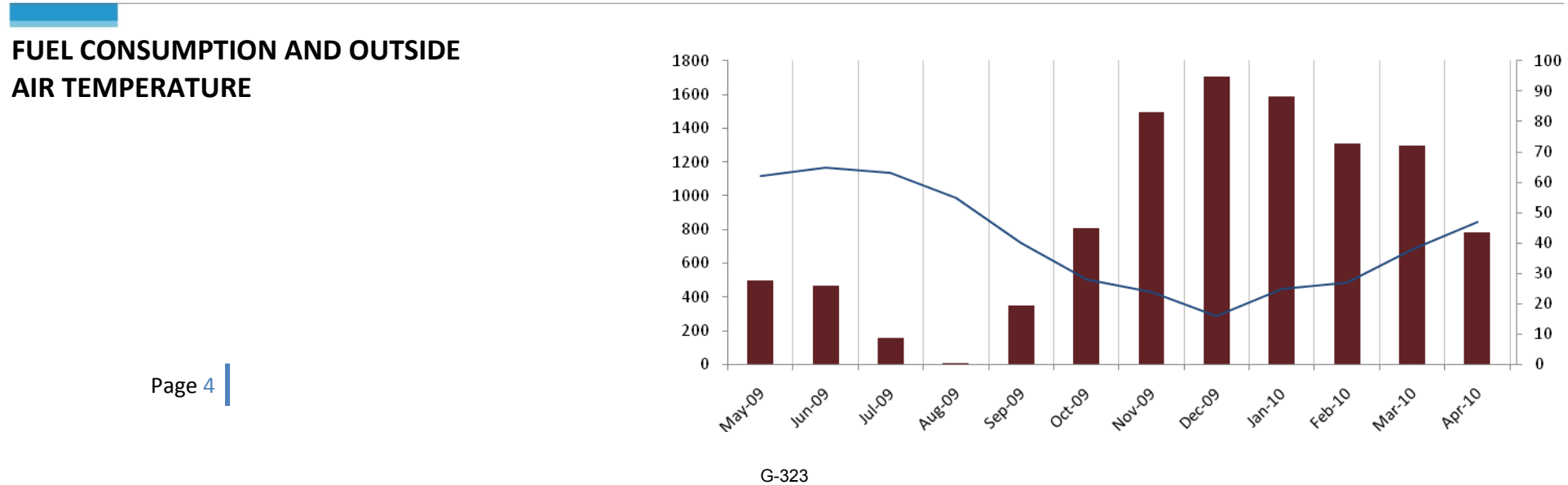
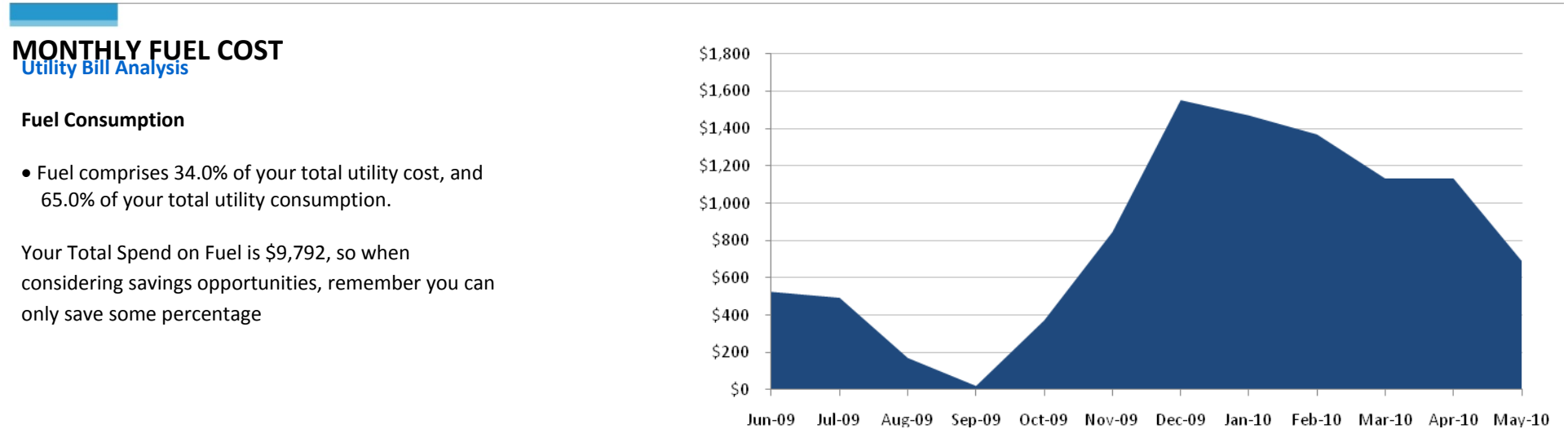


ELECTRICITY CONSUMPTION AND OUTSIDE AIR TEMPERATURE



How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

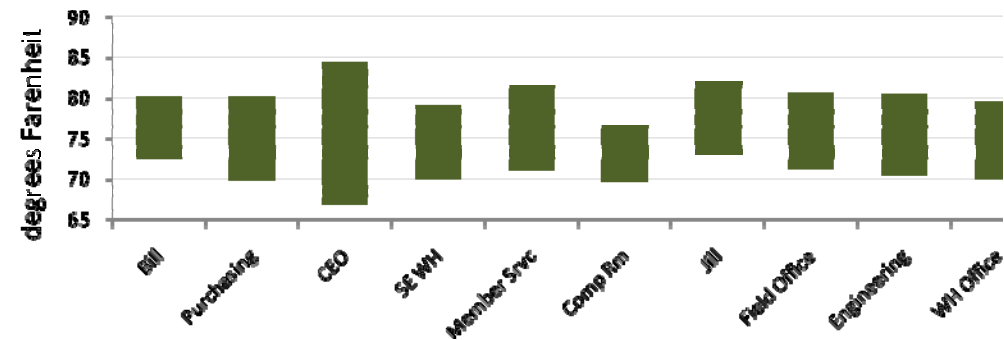


Building Comfort and Ventilation Analysis

This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

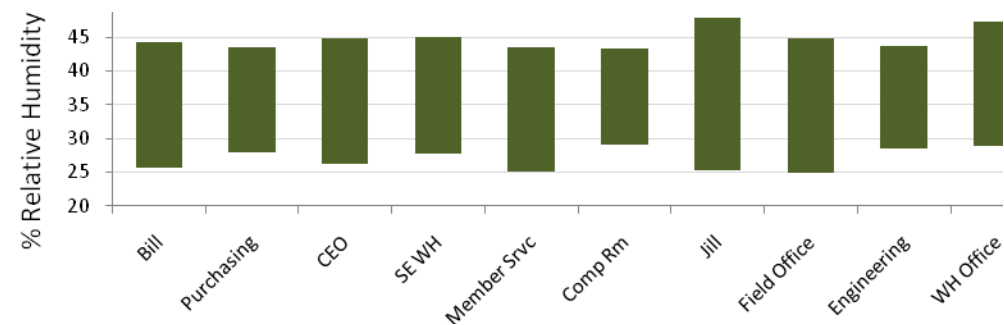
TEMPERATURE FINDINGS

- 10space(s) were too warm at times
- 1 space(s) were too cool at times
- 10 space(s) had excessive temperature variation



RELATIVE HUMIDITY

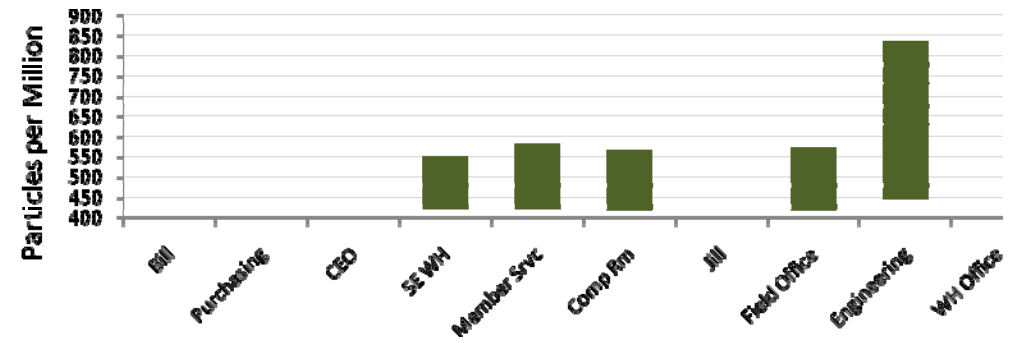
- 0 space(s) had high relative humidity at times
- 3 space(s) had low relative humidity



CARBON DIOXIDE

Your building is over ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating setpoint and raising the cooling setpoint can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

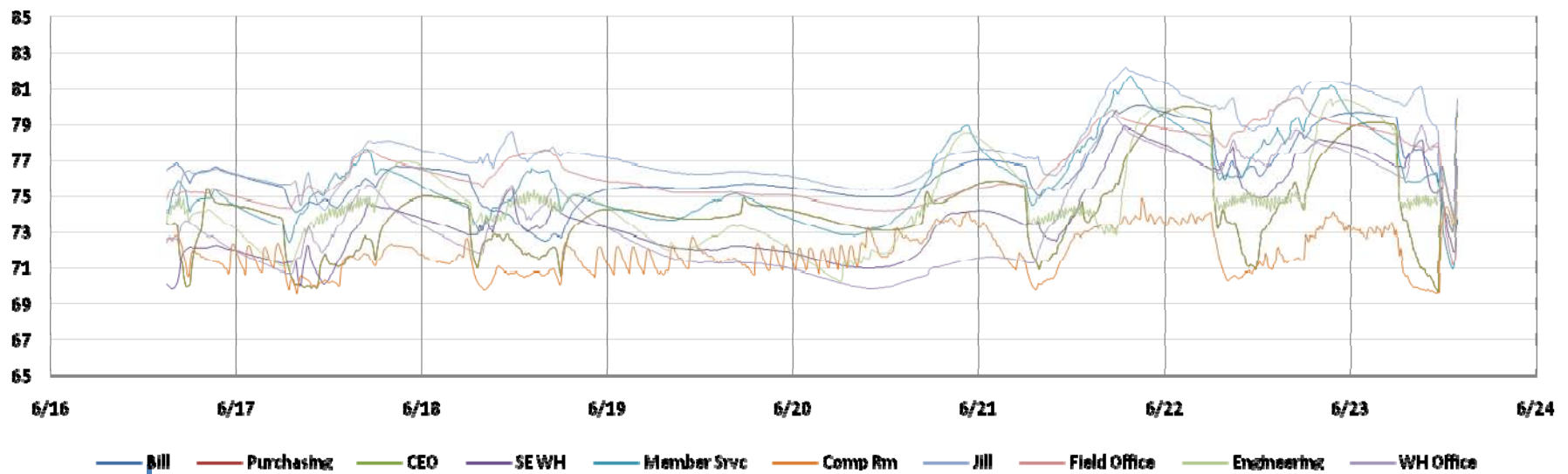
ENERGY SAVING OPPORTUNITIES

Our findings indicate there are several ways to save money by operating your building differently.

Energy Recommendations based on Measurements

- Calibrate thermostats and DDC system to reduce temperature variation
- Verify the control system is shutting the heat and cooling equipment off during unoccupied times
- Move thermostats to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

TIME – TEMPERATURE



Relative-Humidity

Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

ANALYSIS AND RECOMMENDATIONS

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

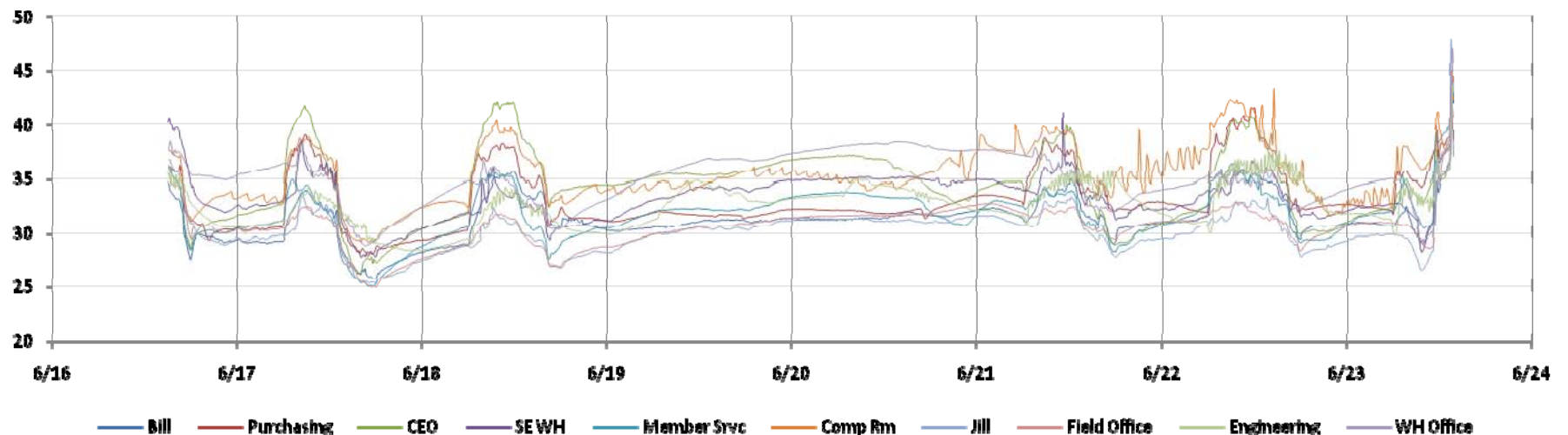
Possible Causes

- Humidification during the cooling season
- Excessive ventilation during some periods

Recommended Actions

- Add humidification lockout control system
- Improve ventilation control

TIME-RELATIVE HUMIDITY



Carbon Dioxide

Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

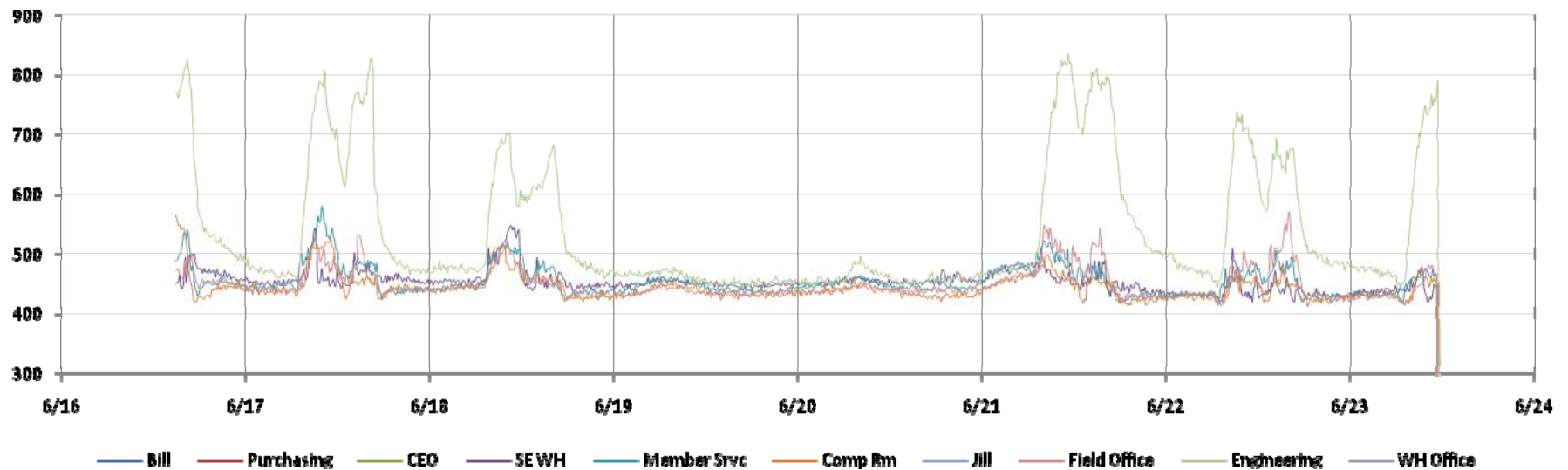
Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building different:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

TIME-CARBON DIOXIDE



Lighting

Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

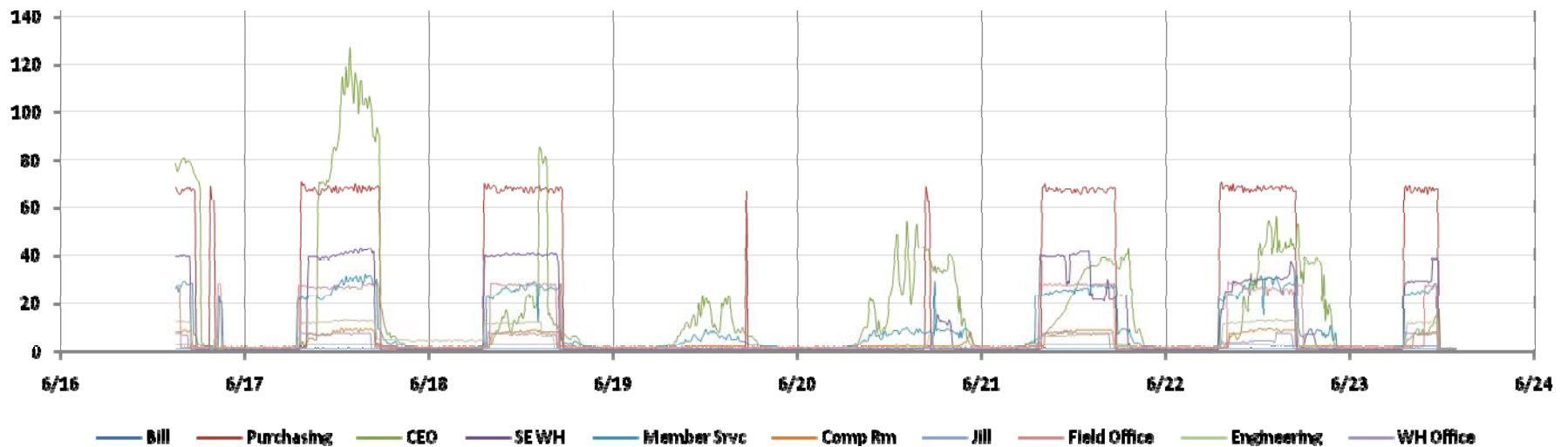
Sources: BOMA, ENERGY STAR, DOE

Energy Saving Opportunities

Energy Recommendations Based on Measurements

- Verify proper lighting levels in each area of the building
- Replace inefficient lighting system

TIME LIGHTING





STATEMENT OF ENERGY PERFORMANCE 1023

Building ID: 2378786

For 12-month Period Ending: April 30, 2010

Date SEP becomes ineligible: N/A

Date SEP Generated: October 06, 2010

Facility

1023
1023
Anchorage, AK 99518

Facility Owner

N/A

Primary Contact for this Facility

N/A

Year Built: 1976**Gross Floor Area (ft²):** 19,799**Energy Performance Rating² (1-100)** 35**Site Energy Use Summary³**

Electricity - Grid Purchase(kBtu)	1,039,159
Natural Gas (kBtu) ⁴	1,071,137
Total Energy (kBtu)	2,110,296

Energy Intensity⁵

Site (kBtu/ft²/yr)	107
Source (kBtu/ft²/yr)	232

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	228
---	-----

Electric Distribution Utility

Chugach Electric Assn Inc

National Average Comparison

National Average Site EUI	90
National Average Source EUI	195
% Difference from National Average Source EUI	19%
Building Type	Office

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) or a Registered Architect (RA) 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 or RA 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	1023	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	Office	Is this an accurate description of the space in question?		☐
Location	1023, Anchorage, AK 99518	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		☐
Office (Office)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	12,299 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.		☐
Weekly operating hours	60 Hours	Is this the total number of hours per week that the Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		☐
Workers on Main Shift	41	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100. The normal worker density ranges between 0.3 and 5.3 workers per 1000 square feet (92.8 square meters)		☐
Number of PCs	51	Is this the number of personal computers in the Office?		☐
Percent Cooled	Less than 50%	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐
Warehouse (Warehouse (Unrefrigerated))				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒

Gross Floor Area	7,500 Sq. Ft.	Is this the total gross floor area as measured between the principal exterior surfaces of the enclosing fixed walls and including all supporting functions? The total gross floor area should include offices, lobbies, rest rooms, equipment storage areas, mechanical rooms, employee break rooms, cafeterias, elevators, stairwells, all space occupied by refrigeration/freezer units, and all areas that are entirely refrigerated. Existing atriums or areas with high ceilings should only include the base floor area that they occupy. The total gross floor area should not include outside loading bays or docks.	☐
Workers on Main Shift	5	Does this number represent the average number of workers that are present during the primary shift (that is, the shift with the most workers)? Note: this is not the total number of staff employed at the property. For example, if there are three daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100.	☐
Weekly operating hours	55 Hours	Is this the total number of hours per week that this warehouse space is in operation, excluding hours when the facility is occupied by maintenance, security, or other support personnel? Note: the average warehouse space operates 60 hours per week.	☐
Percent Cooled	0 %	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?	☐
Number of walk-in refrigeration/freezer units	0	Does this count include all large walk-in refrigeration or freezer units at the warehouse?	☐
Distribution Center	No(Optional)	Is this building considered a distribution center?	☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Chugach Electric Assn Inc

Fuel Type: Electricity		
Meter: Electricity (kWh (thousand Watt-hours)) Space(s): Entire Facility Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
03/21/2010	04/20/2010	30,800.00
02/21/2010	03/20/2010	24,720.00
01/21/2010	02/20/2010	27,600.00
12/21/2009	01/20/2010	20,960.00
11/21/2009	12/20/2009	28,320.00
10/21/2009	11/20/2009	25,600.00
09/21/2009	10/20/2009	23,040.00
08/21/2009	09/20/2009	24,640.00
07/21/2009	08/20/2009	23,600.00
06/21/2009	07/20/2009	24,880.00
05/21/2009	06/20/2009	23,440.00
Electricity Consumption (kWh (thousand Watt-hours))		277,600.00
Electricity Consumption (kBtu (thousand Btu))		947,171.20
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		947,171.20
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☐
Fuel Type: Natural Gas		
Meter: Gas (ccf (hundred cubic feet)) Space(s): Entire Facility		
Start Date	End Date	Energy Use (ccf (hundred cubic feet))
03/03/2010	04/02/2010	1,295.00
02/03/2010	03/02/2010	1,310.00
01/03/2010	02/02/2010	1,586.00
12/03/2009	01/02/2010	1,704.00
11/03/2009	12/02/2009	1,494.00
10/03/2009	11/02/2009	809.00
09/03/2009	10/02/2009	348.00
08/03/2009	09/02/2009	9.00
07/03/2009	08/02/2009	154.00
06/03/2009	07/02/2009	467.00
05/03/2009	06/02/2009	498.00

Gas Consumption (ccf (hundred cubic feet))	9,674.00
Gas Consumption (kBtu (thousand Btu))	995,454.60
Total Natural Gas Consumption (kBtu (thousand Btu))	995,454.60
Is this the total Natural Gas consumption at this building including all Natural Gas 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.	☐
--	--------------------------

On-Site Solar and Wind Energy

Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.	☐
---	--------------------------

Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA 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

1023
1023
Anchorage, AK 99518

Facility Owner

N/A

Primary Contact for this Facility

N/A

General Information

1023	
Gross Floor Area Excluding Parking: (ft ²)	19,799
Year Built	1976
For 12-month Evaluation Period Ending Date:	April 30, 2010

Facility Space Use Summary

Office		Warehouse	
Space Type	Office	Space Type	Warehouse (Unrefrigerated)
Gross Floor Area(ft ²)	12,299	Gross Floor Area(ft ²)	7,500
Weekly operating hours	60	Workers on Main Shift	5
Workers on Main Shift	41	Weekly operating hours	55
Number of PCs	51	Percent Cooled	0
Percent Cooled	Less than 50%	Percent Heated	100
Percent Heated	50% or more	Number of walk-in refrigeration/freezer units	0
		Distribution Center ^o	N

Energy Performance Comparison

Performance Metrics	Evaluation Periods		Comparisons		
	Current (Ending Date 04/30/2010)	Baseline (Ending Date 04/30/2010)	Rating of 75	Target	National Average
Energy Performance Rating	35	35	75	N/A	50
Energy Intensity					
Site (kBtu/ft ²)	107	107	65	N/A	90
Source (kBtu/ft ²)	232	232	141	N/A	195
Energy Cost					
\$/year	\$ 49,036.67	\$ 49,036.67	\$ 29,709.99	N/A	\$ 41,234.23
\$/ft ² /year	\$ 2.48	\$ 2.48	\$ 1.50	N/A	\$ 2.09
Greenhouse Gas Emissions					
MtCO ₂ e/year	228	228	138	N/A	192
kgCO ₂ e/ft ² /year	11	11	7	N/A	9

More than 50% of your building is defined as Office. 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.

Statement of Energy Performance

2010

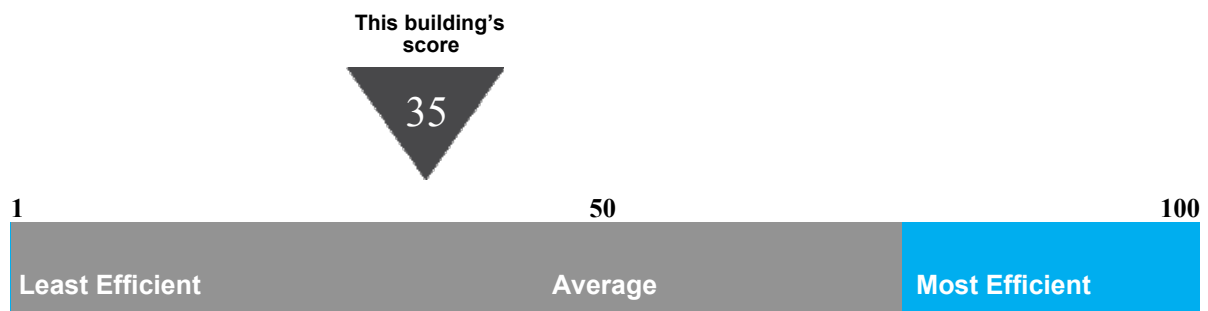
1023

1023

Anchorage, AK 99518

Portfolio Manager Building ID: 2378786

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit energystar.gov/benchmark.



This building uses 232 kBtu per square foot per year.*

*Based on source energy intensity for the 12 month period ending April 2010

Buildings with a score of
75 or higher may qualify
for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at energystar.gov

Date of certification



Date Generated: 10/06/2010

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1024

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

CHUGACH
POWERING ALASKA'S FUTURE

CONTROL
CONTRACTORS

smart building solutions



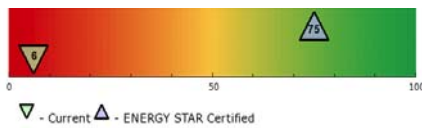
positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

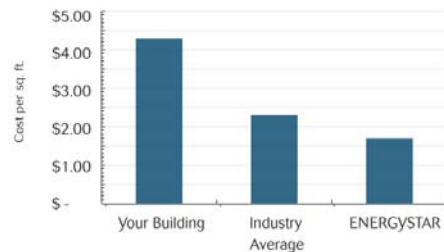


Your building's ENERGY STAR® Energy Performance Rating is **6**. Its Energy Use Index is **239 kbtu per sq. ft.**

Your building's ENERGY STAR score of 6 ranks you below average versus your peers, and falls well below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

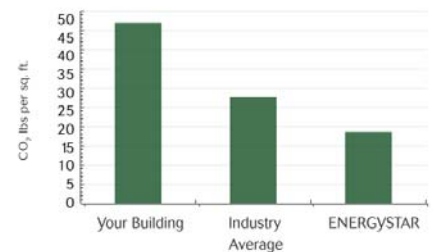


Your building's annual cost per square foot is **\$4.28 per sq. ft.** overall.

Your building's cost per square foot is \$1.98 more than the industry average. Your annual cost can be reduced by \$67,251 or 46.2% by achieving an ENERGY STAR score of 50.



Carbon Footprint



Your building's annual carbon footprint is **723 metric tons of CO₂** or **46.80 lbs per sq. ft.**

Your building's carbon emissions are 69.1% more than the industry average, and can be reduced by 19 lbs per sq. ft. by achieving an ENERGY STAR score of 50.

You could save up to **\$67,251** annually or **\$336,255** over 5 years by raising your ENERGY STAR score to the level of 50.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Your building is controlled well
- Your building is over-ventilated



How Does Your Building Use Electricity Today?

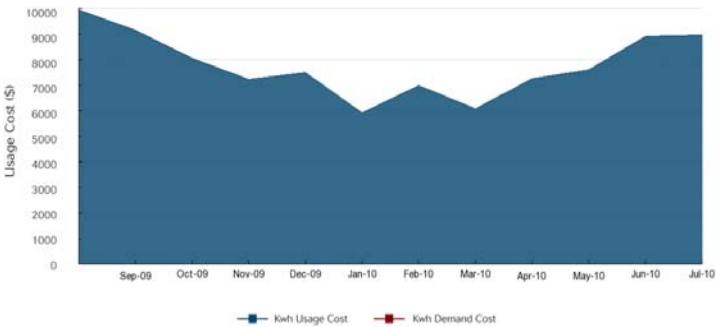
This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

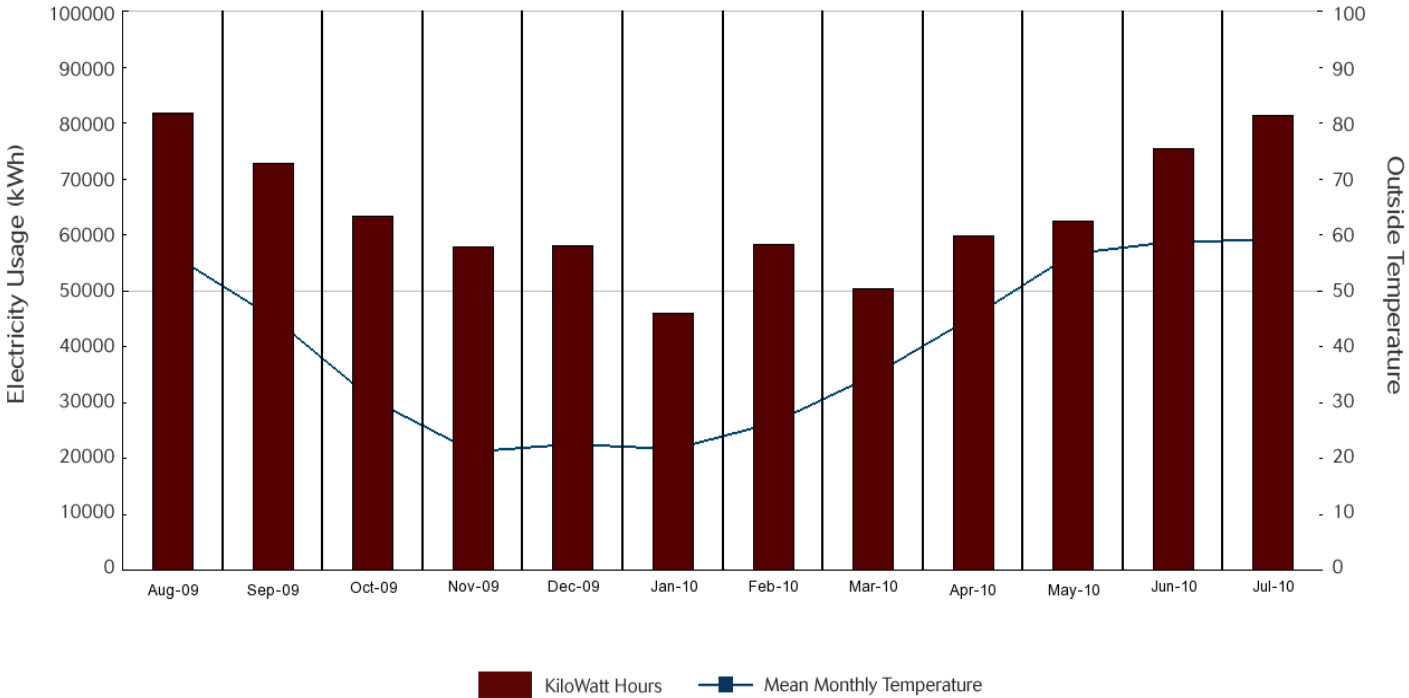
Electricity Consumption

- Electricity comprises 64.3% of your total utility cost, and 32.2% of your total utility consumption.
- Your Total Spend on electricity is \$93,570, so when considering savings opportunities, remember you can only save some percentage of that total.
- Demand costs are included in the overall electricity costs.

Monthly Electricity Costs



Electricity Consumption and Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read



Monthly Fuel Costs

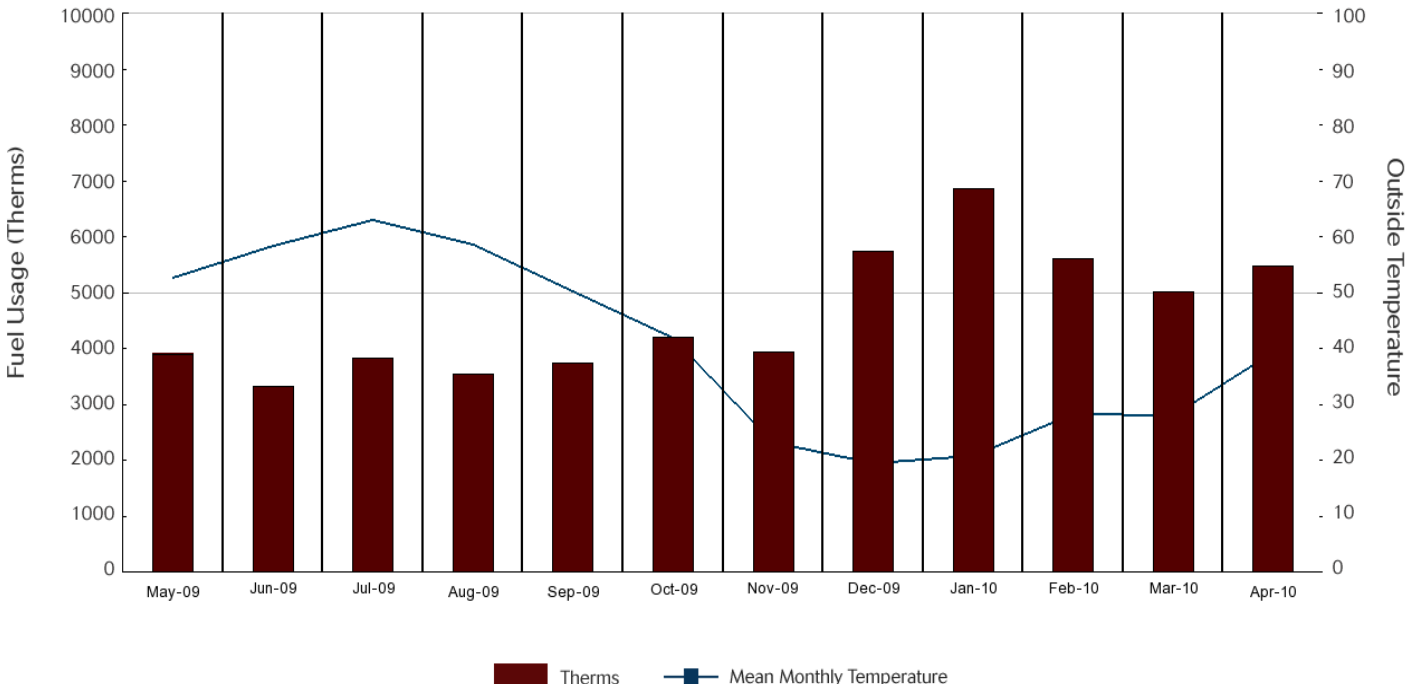
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 35.7% of your total utility cost, and 67.8% of your total utility consumption.
- Your Total Spend on Fuel is \$52,052, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption and Outside Air Temperature



Building Comfort and Ventilation Analysis

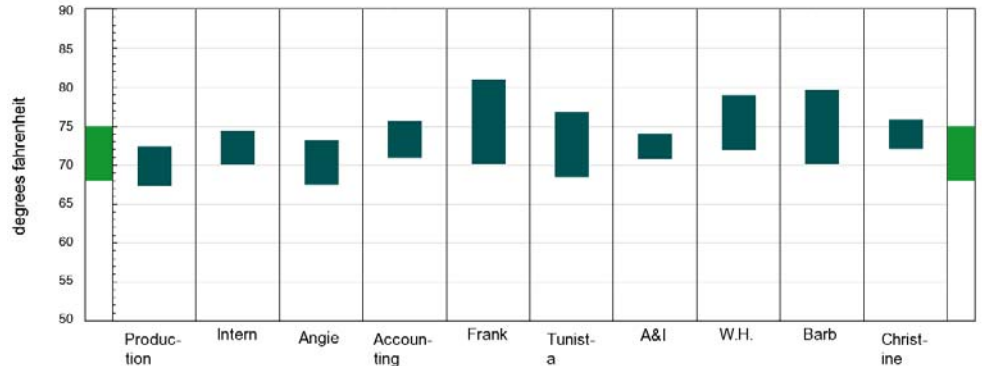
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building is controlled well with little opportunity for savings.

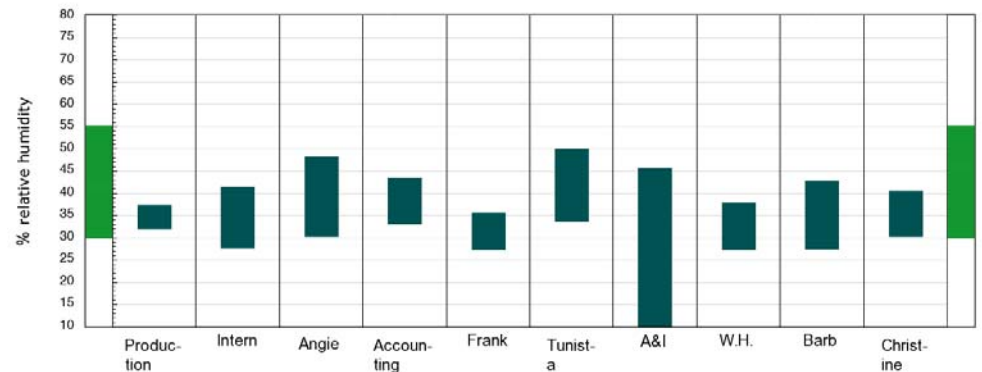
- 4 space(s) were too warm at times
- 0 space(s) were too cool at times
- 4 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 2 space(s) had low relative humidity at times

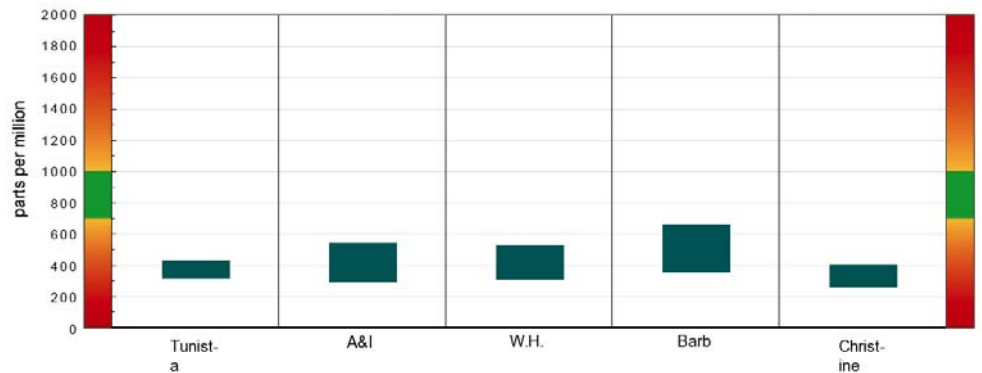


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: $\pm 1^\circ\text{F}$]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating Set Point is 68 / 68
	Occupied/Unoccupied Cooling Set Point is 75 / 75

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Further Comfort & Energy Recommendations

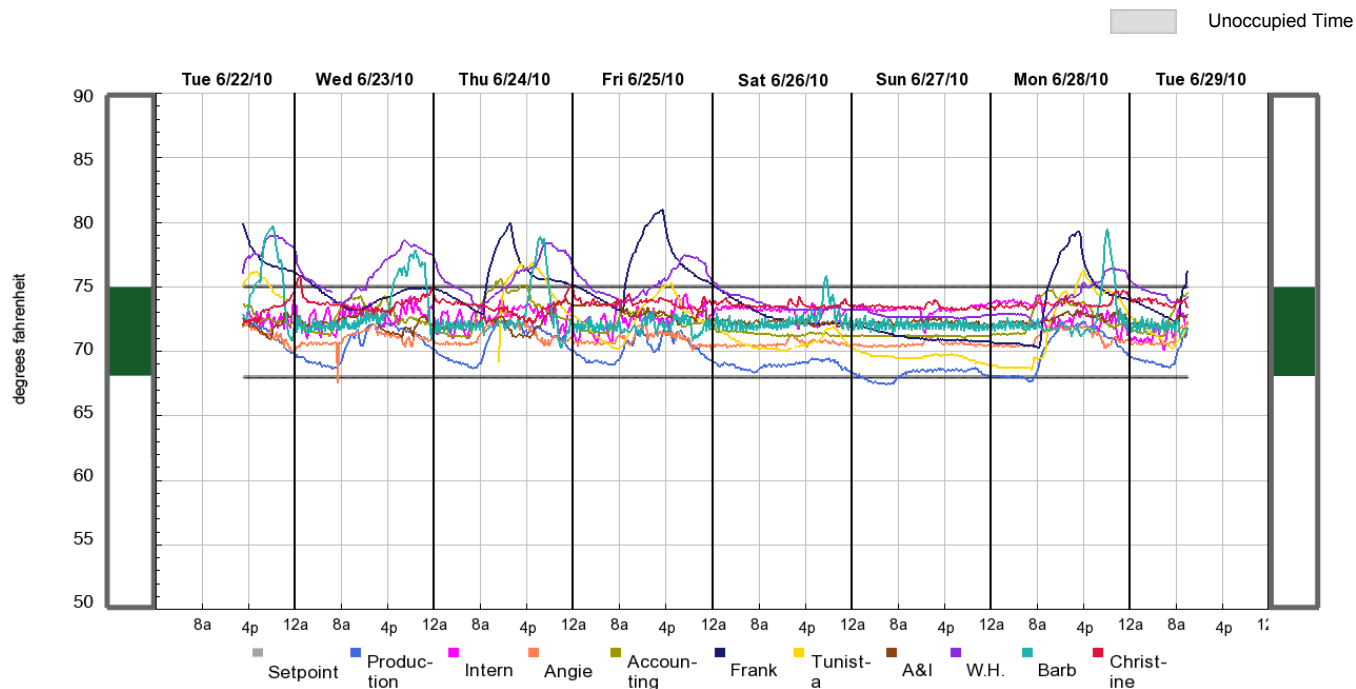
- Increase the amount of heating set back possible during the unoccupied times

Monitor Statistics

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%ToR*	SV†
Production		67	72	70	7%	4
Intern		71	74	73	3%	3
Angie		70	73	71	0%	4
Accounting		71	75	72	2%	4
Frank		70	81	74	34%	8
Tunista		69	77	72	12%	8
A&I		71	74	72	0%	4
W.H.		72	79	75	36%	3
Barb		71	79	73	13%	9
Christine		72	75	74	6%	9

These statistics are for occupied times only.

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]

Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

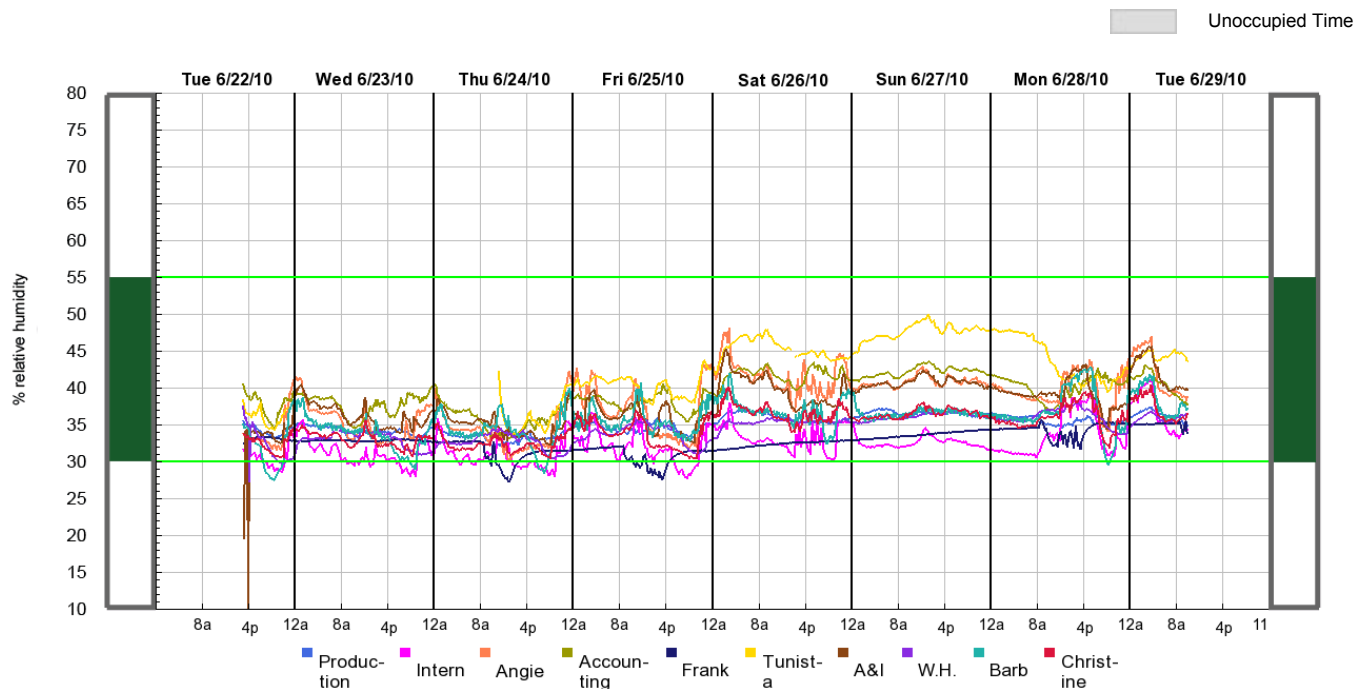
- Add humidification system
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
Production		32	37	35	0%
Intern		28	41	32	14%
Angie		30	48	38	0%
Accounting		33	44	39	0%
Frank		27	36	33	6%
Tunista		34	50	43	0%
A&I		5	46	38	0%
W.H.		27	38	34	1%
Barb		27	43	36	4%
Christine		30	40	35	0%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

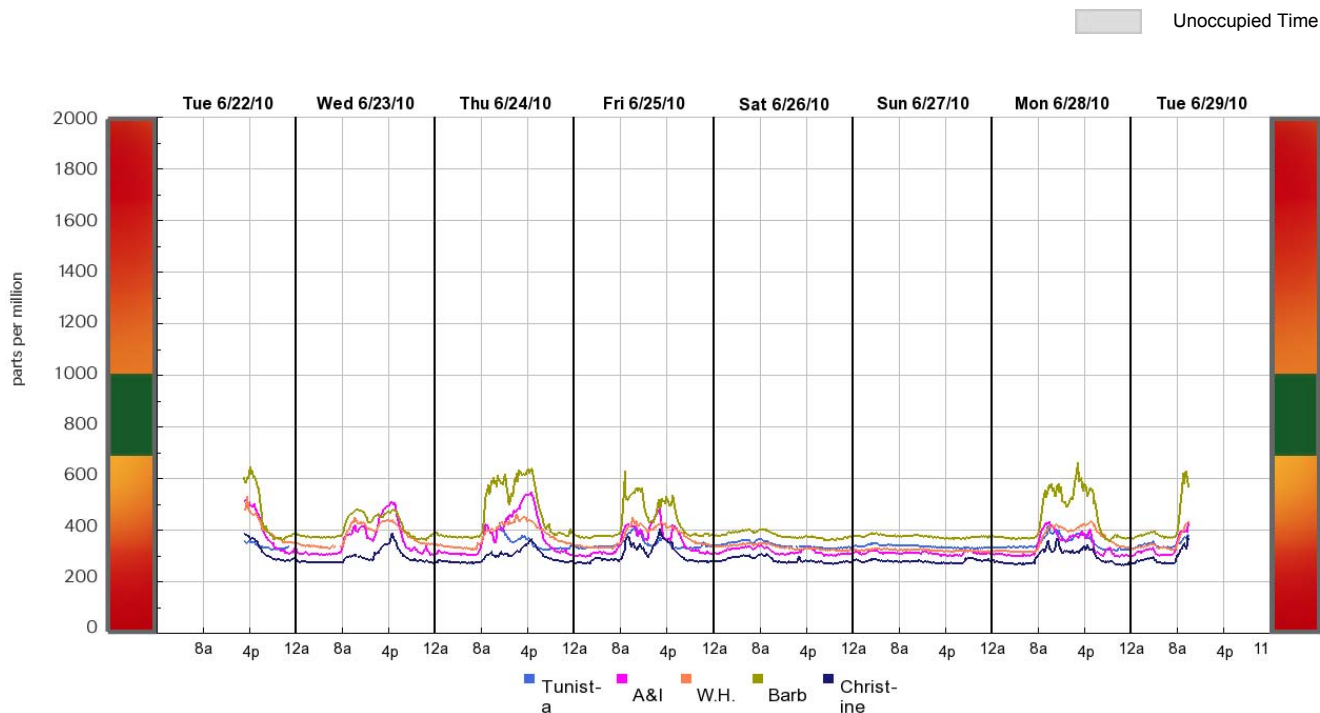
Comfort & Health Recommendations

- No recommendations at this time

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
Tunista		319	429	342	100%
A&I		295	544	342	100%
W.H.		312	529	358	100%
Barb		355	662	417	100%
Christine		263	404	292	99%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 24 average occupied hours

Energy Savings Opportunities

Our findings indicate your building is not wasting energy on lights.

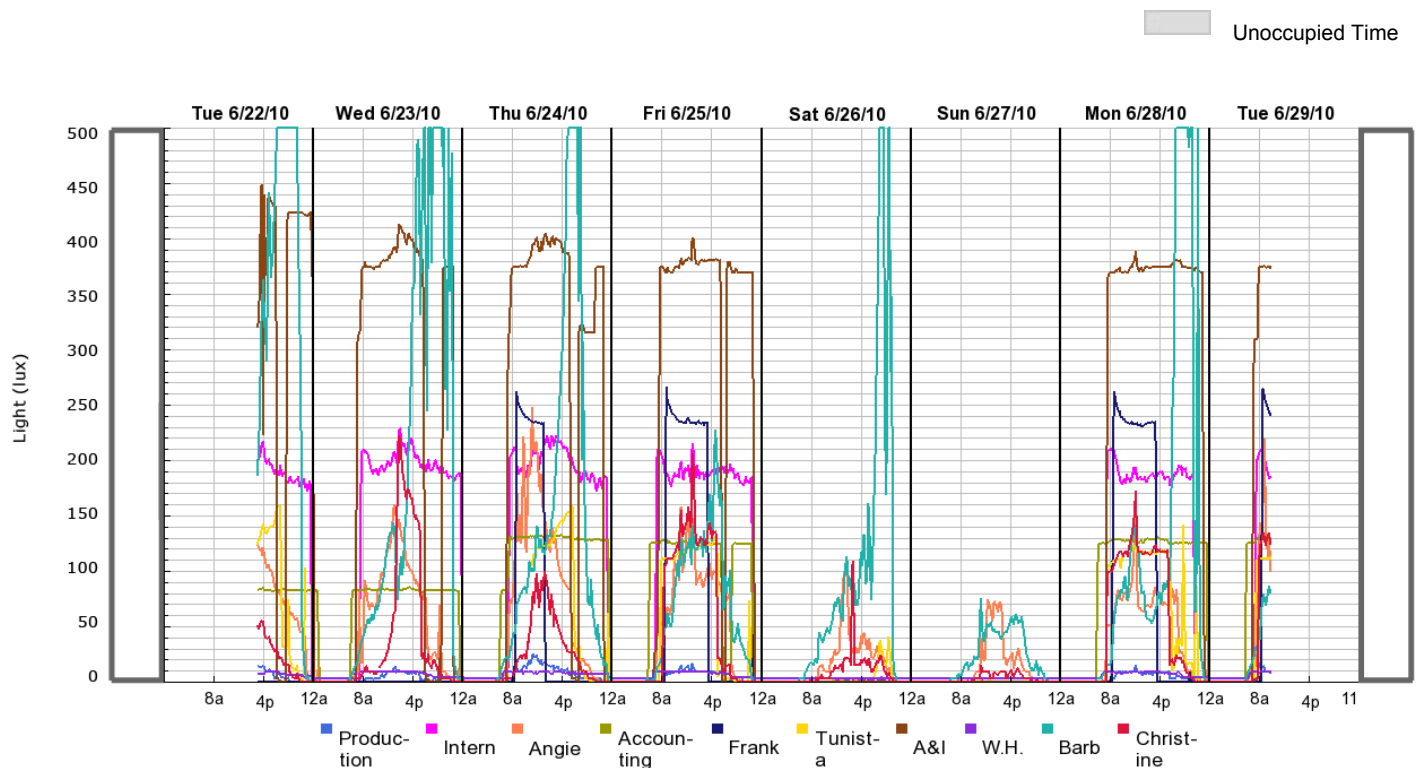
Energy Recommendations Based on Measurements

- No recommendations at this time.

Further Energy Recommendations

- No recommendations at this time.

Monitor		Alert Lvl	Measured On-Time
	Production		0.0 hrs
	Intern		10. hrs
	Angie		5.2 hrs
	Accounting		10. hrs
	Frank		4.1 hrs
	Tunista		5.0 hrs
	A&I		10. hrs
	W.H.		14. hrs
	Barb		3.0 hrs
	Christine		4.8 hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99518

Outdoor Temperature

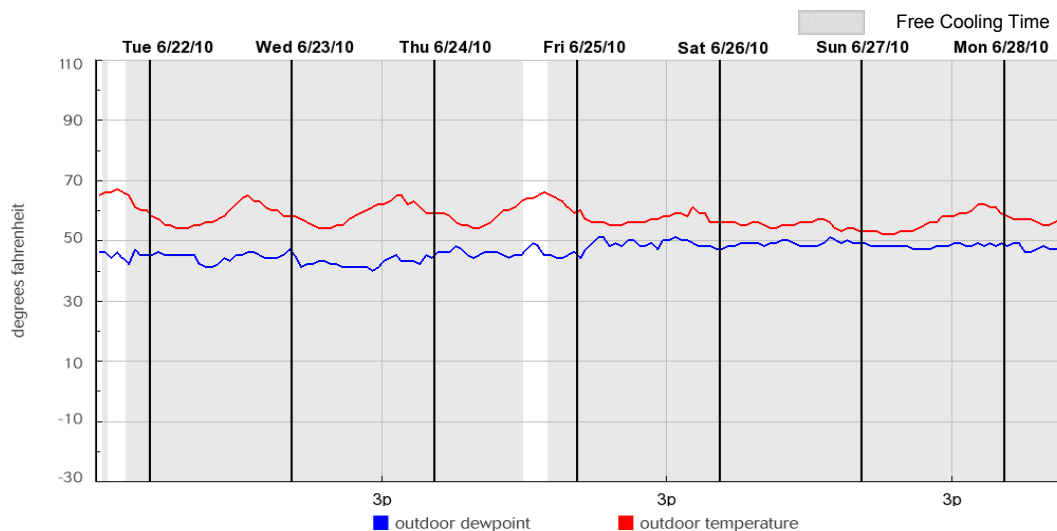
Test Period Avg: 6/22/10 – 6/29/10	Heating Degree Days	Cooling Degree Days
58 °F	7	0

Outdoor Temperature and Dewpoint

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dewpoint during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	XXX
Contact	XXX
Address	Anchorage, AK 99518
Building Information	
Building Background	Building Usage: Office Building Size (sq ft): 34050 # of Stories: 2 Building Status: Existing Construction type: Cement Block LEED Cert.: None Heating System: Boiler Domestic Hot Water: Gas or Other Fuel Economizer: Yes Cooling System: DX / Packaged Unit
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
Production	20431
Intern	20420
Angie	20418
Accounting	20416
Frank	20415
Tunista	20300
A&I	20295
W.H.	20293
Barb	20289
Christine	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	00:00	68	75	Yes
Tue				
Wed				
Thu	23:59	68	75	No
Fri				
Sat				
Sun				

Building Description

Office			
Gross Floor Area	23440	Weekly Operating Hours	55
Number of Workers on Main Shift	98	Number of PCs	100
Office Air-Conditioned	50% or more	Office Heated	50% or more

Warehouse (Unrefrigerated)			
Gross Floor Area	10610	Number of Workers on Main Shift	6
Weekly Operating Hours	65	% Air-Conditioned	0
% Heated	100	Walk-in Refrigeration/Freezer Units	0

Parking			
Enclosed Floor Area	0	Non-Enclosed Floor Area (w/roof)	0
Open Floor Area (w/o roof)	25000	Weekly Hours of Access	168

Building Controls Information

Current Controls	
Controls Type	Thermostat
Schedule Type	On/Off (Auto fan)
Air Delivery Method	Constant Volume (CV)
Air-Flow Modulation	N/A



Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
8/19/09	81440	\$9,957		\$0
9/19/09	72760	\$9,143		\$0
10/19/09	63360	\$8,061		\$0
11/19/09	57720	\$7,222		\$0
12/19/09	57960	\$7,488		\$0
1/19/10	45920	\$5,915		\$0
2/19/10	58240	\$6,984		\$0
3/19/10	50240	\$6,070		\$0
4/19/10	59880	\$7,247		\$0
5/19/10	62360	\$7,594		\$0
6/19/10	75320	\$8,919		\$0
7/19/10	81320	\$8,970		\$0
TOTAL:	766520	\$93,570		\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
5/4/09 3893		\$3,967
6/4/09 3311		\$3,383
7/4/09 3826		\$3,903
8/4/09 3531		\$3,607
9/4/09 3738		\$3,814
10/4/09 4192		\$4,270
11/4/09 3930		\$4,006
12/4/09 5746		\$5,828
1/4/10 6859		\$5,739
2/4/10 5597		\$4,695
3/4/10 5015		\$4,213
4/4/10 5463		\$4,629
TOTAL:	55101	\$52,052

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE

1025

ASSESSMENT PERFORMED BY

Control Contractors – Anchorage

5660 B Street

Anchorage, Alaska 99518



smart building solutions

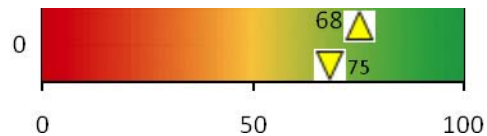


posi⊕iveENERGY

EXECUTIVE SUMMARY



Energy Use

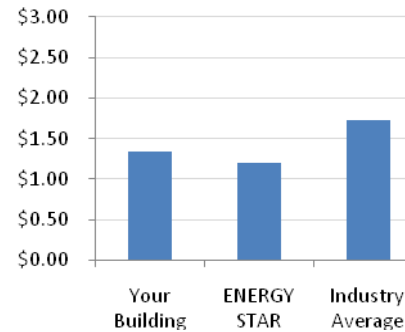


Your building's ENERGY STAR® Energy Performance Rating is 68. Its Energy Use Index is 80kbtu per sq. ft.

Your building's ENERGY STAR score of 68 ranks you above average versus your peers, but falls below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

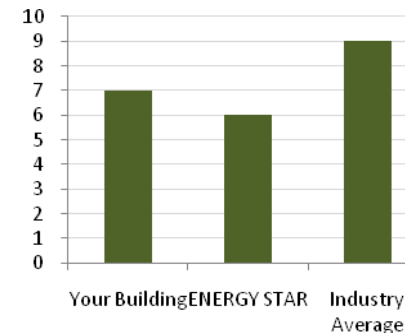


Your building's annual cost per square foot is \$1.34 per sq. ft. overall.

Your building's cost per square foot is \$0.14 more than an ENERGY STAR® facility average. Your annual cost can be reduced by **\$17,998** (11%) or **\$89,990** over 5 years by achieving an ENERGY STAR score of 75.



Carbon Footprint



Your building's annual carbon footprint is 925 metric tons of CO2 or 7lbs per sq. ft.

Your building's carbon emissions are 23% less than the industry average, and can be reduced by 1lbs per sq. ft. by achieving an ENERGY STAR score of 75.

You could save up to **\$17,998** annually or 89,990 over 5 years by raising your ENERGY STAR score to the level of 75

While a detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR database.

How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

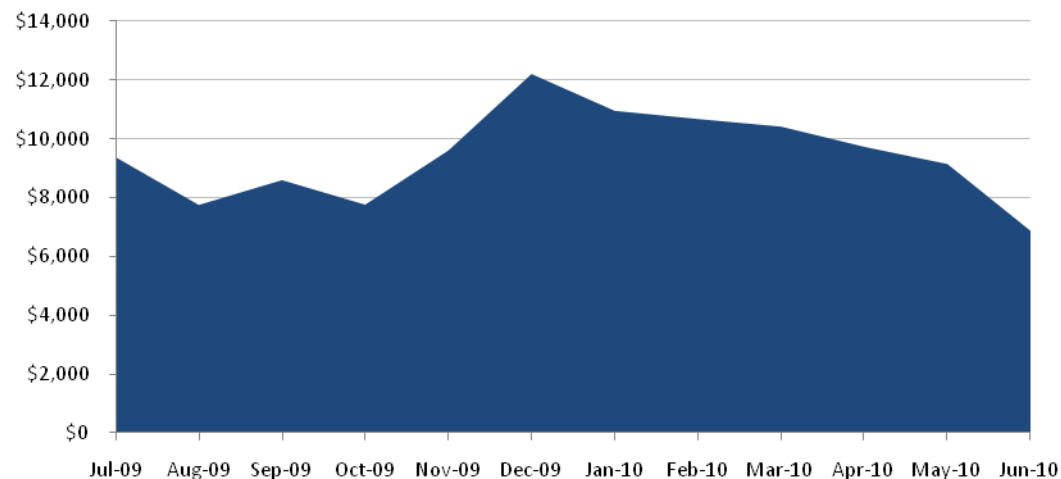


MONTHLY ELECTRICTY COST

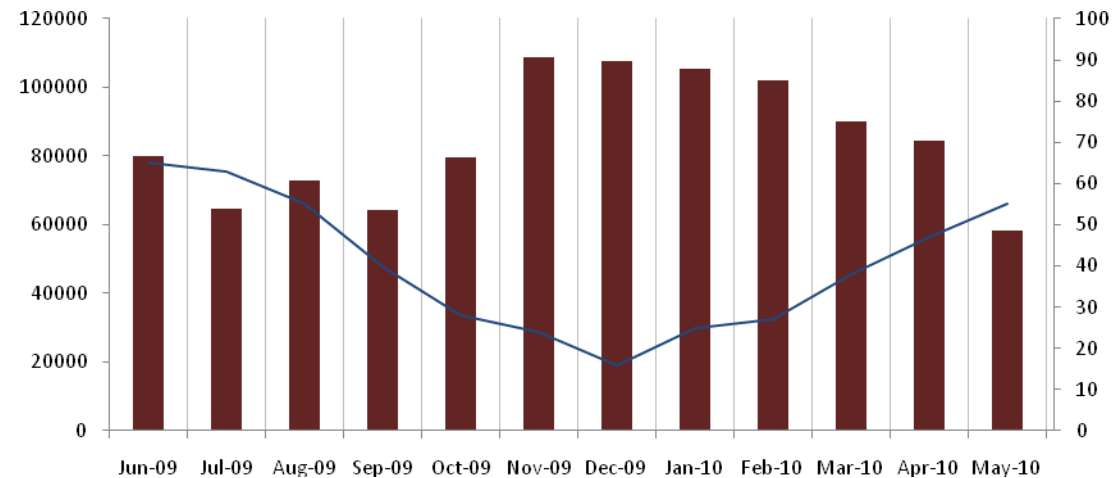
Utility Bill Analysis

Electricity Consumption

- Electricity comprises 66.0% of your total utility cost, and 35.0% of your total utility consumption.
- Your Total Spend on electricity is \$111,983, so when considering savings opportunities, remember you can



ELECTRICITY CONSUMPTION AND OUTSIDE AIR TEMPERATURE



How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

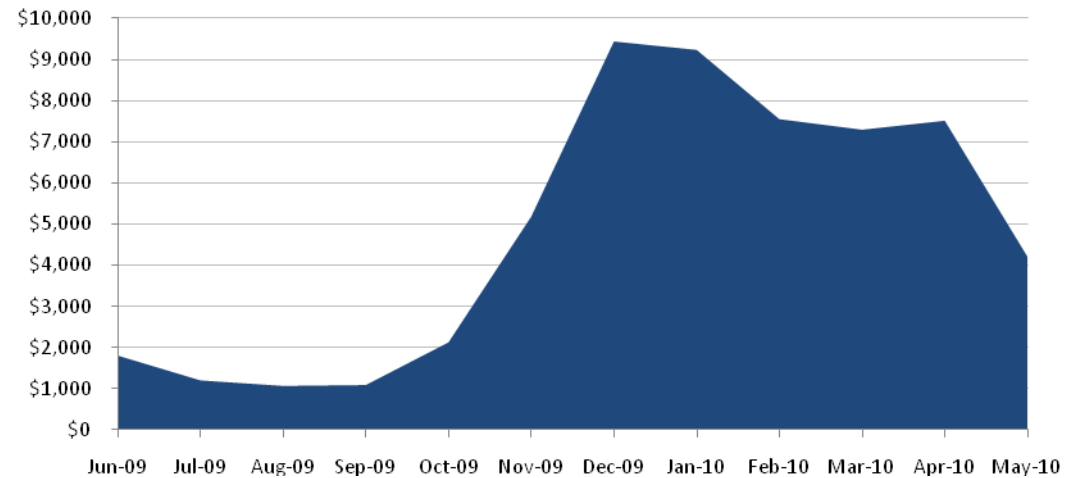
MONTHLY FUEL COST

Utility Bill Analysis

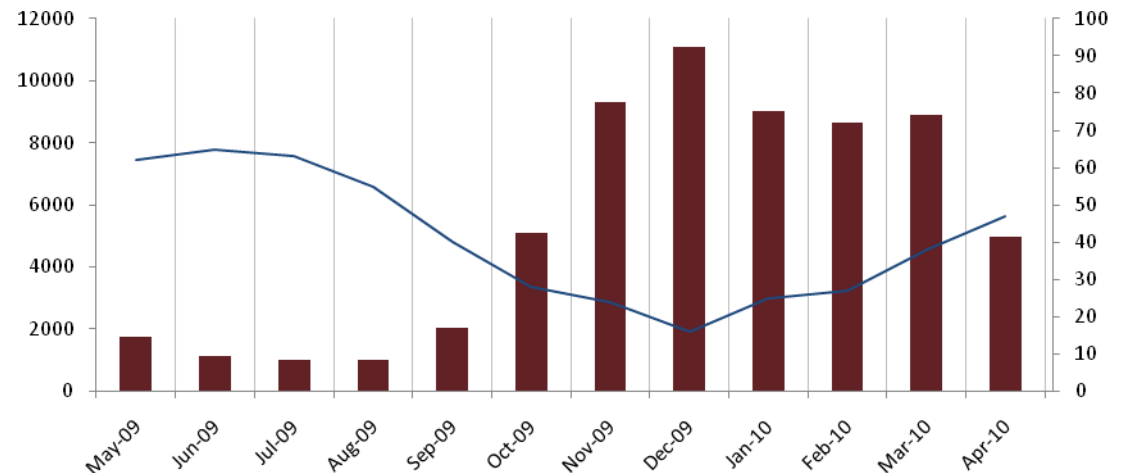
Fuel Consumption

- Fuel comprises 34.0% of your total utility cost, and 65.0% of your total utility consumption.

Your Total Spend on Fuel is \$57,643, so when considering savings opportunities, remember you can only save some percentage



FUEL CONSUMPTION AND OUTSIDE AIR TEMPERATURE

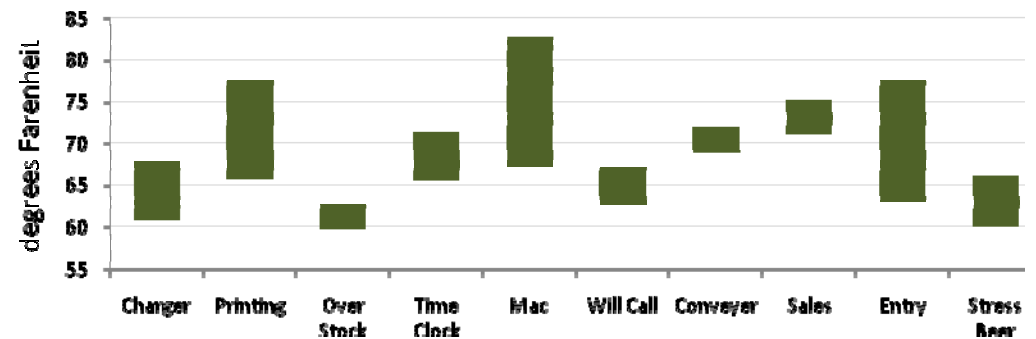


Building Comfort and Ventilation Analysis

This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

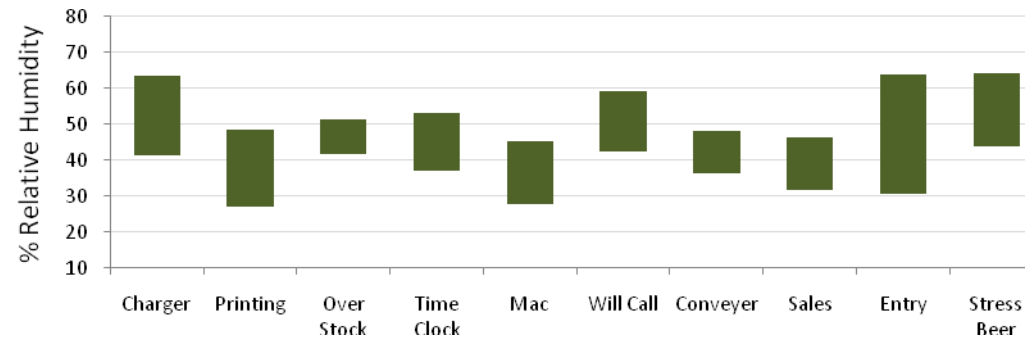
TEMPERATURE FINDINGS

- 3 space(s) were too warm at times
- space(s) were too cool at times
- 4 space(s) had excessive temperature variation



RELATIVE HUMIDITY

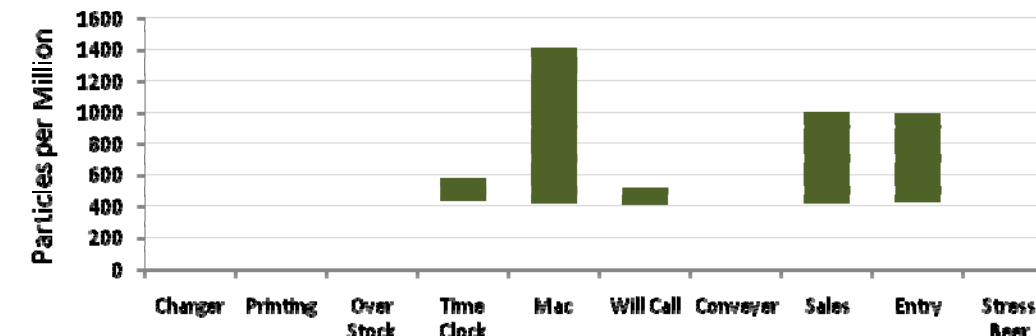
- 4 space(s) had high relative humidity at times
- 2 space(s) had low relative humidity



CARBON DIOXIDE

Your building is over ventilated and can save energy by reducing the overall amount of outside air ventilation

- 1 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

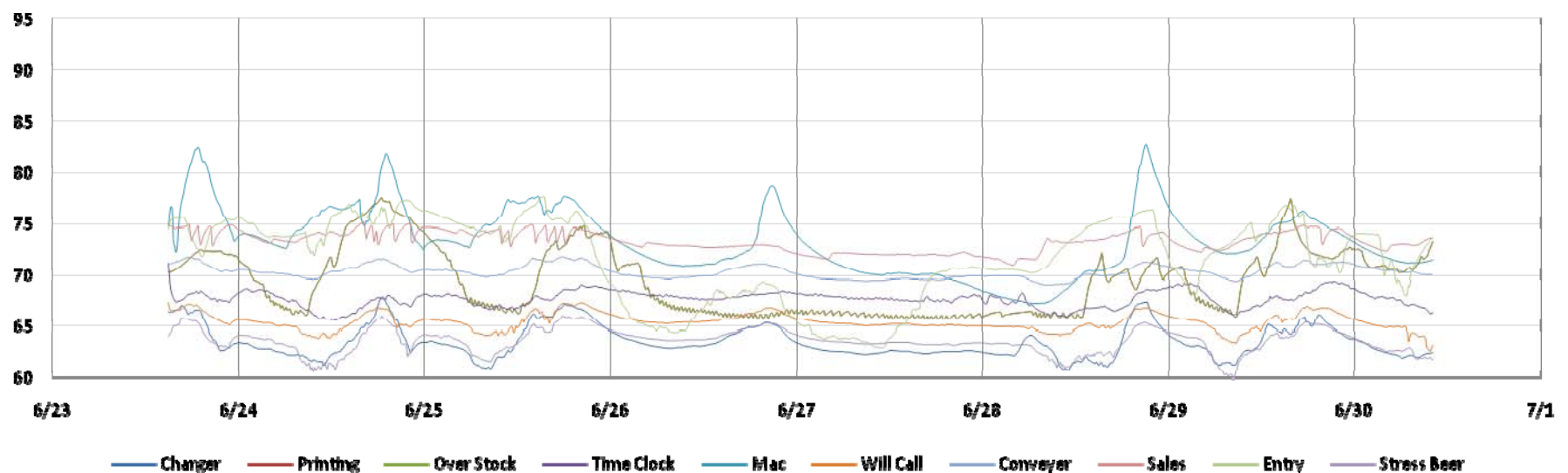
ENERGY SAVING OPPORTUNITIES

Our findings indicate there are several ways to save money by operating your building differently.

Energy Recommendations based on Measurements

- Calibrate thermostats to reduce temperature variation
- Verify the control system is shutting the heat and cooling equipment off
- Move thermostats to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

TIME – TEMPERATURE



Relative-Humidity

Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

ANALYSIS AND RECOMMENDATIONS

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

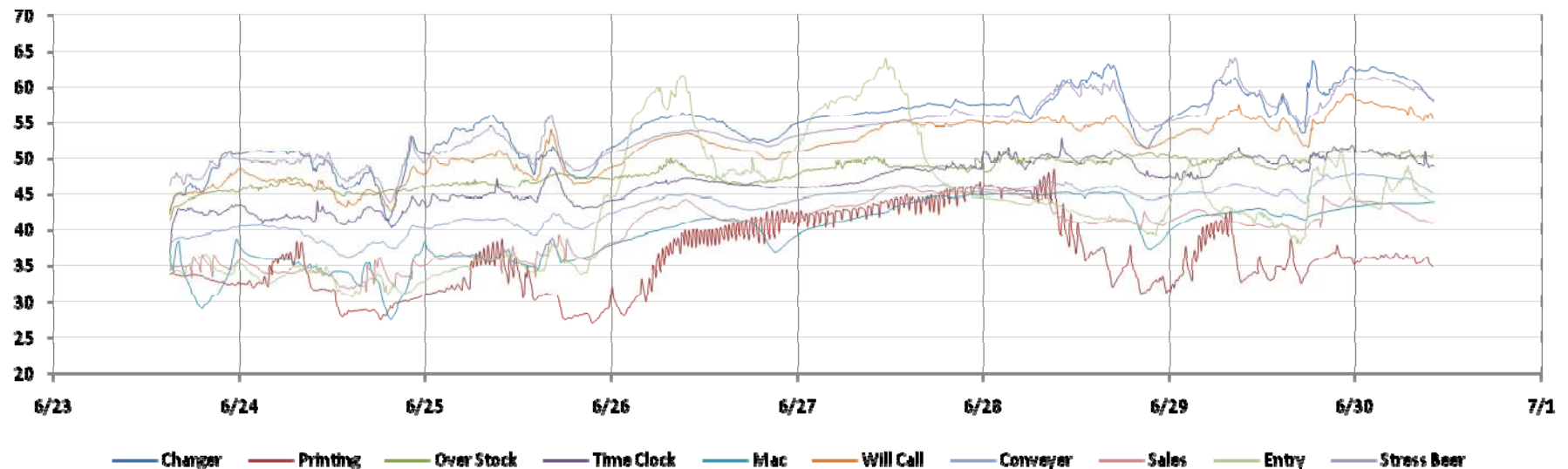
Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

- Add humidification system
- Improve ventilation control

TIME-RELATIVE HUMIDITY



Carbon Dioxide

Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

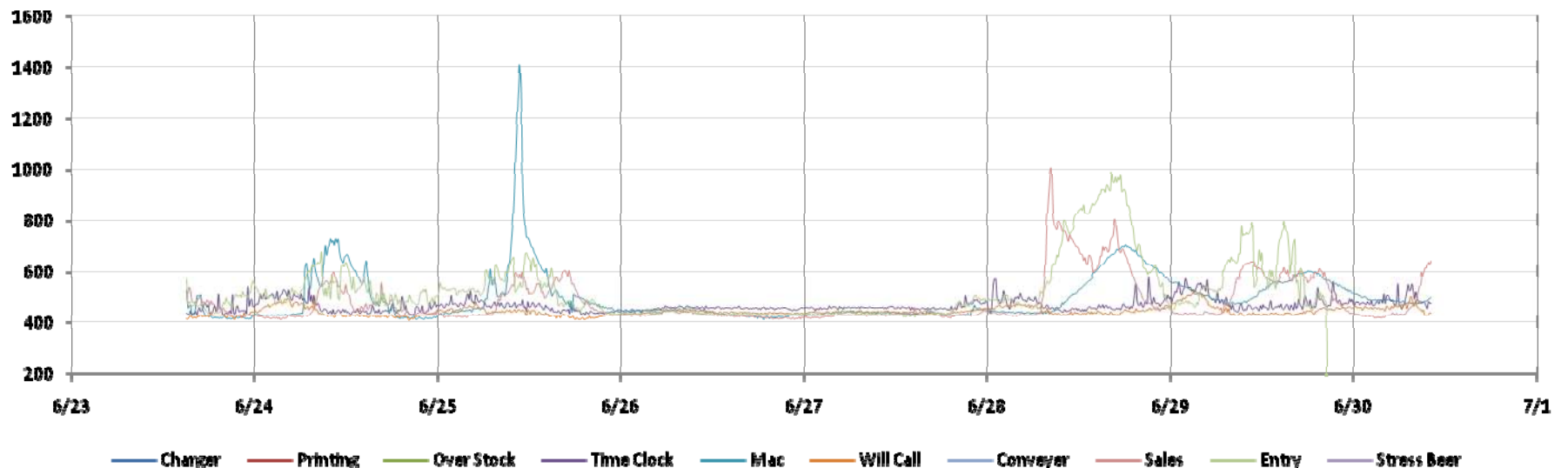
Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building different:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

TIME-CARBON DIOXIDE



Lighting

Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

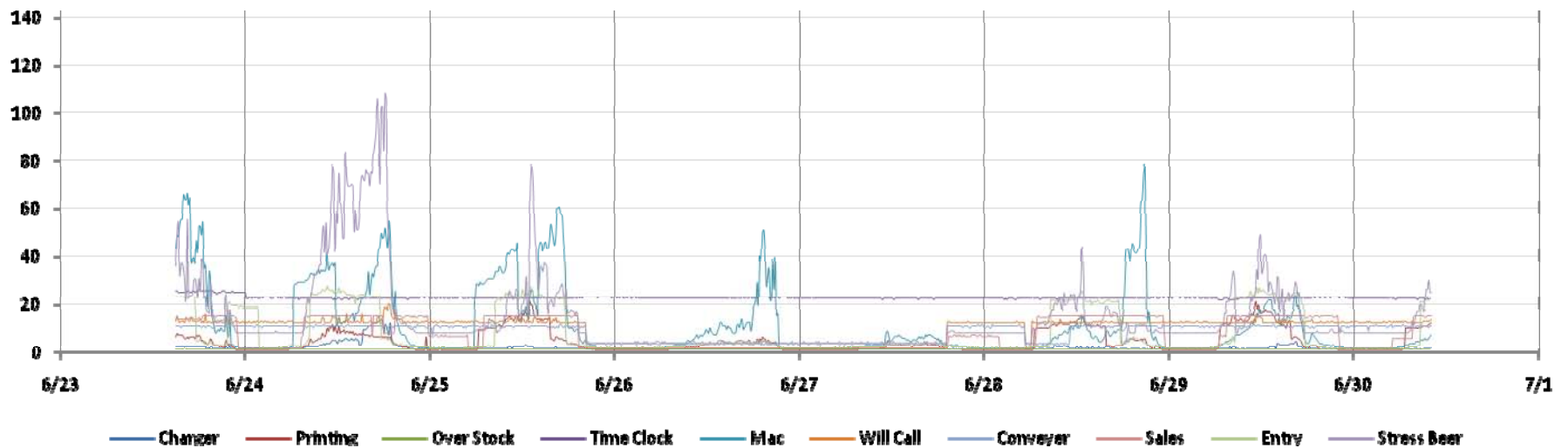
Sources: BOMA, ENERGY STAR, DOE

Energy Saving Opportunities

Energy Recommendations Based on Measurements

- Verify proper lighting levels in each area of the building

TIME LIGHTING





STATEMENT OF ENERGY PERFORMANCE 1025

Building ID: 2379130
For 12-month Period Ending: April 30, 2010¹
Date SEP becomes ineligible: N/A

Date SEP Generated: October 05, 2010

Facility
 1025
 1025
 Anchorage, AK 99518

Facility Owner
 N/A

Primary Contact for this Facility
 N/A

Year Built: 1980
Gross Floor Area (ft²): 126,400

Energy Performance Rating² (1-100) 68

Site Energy Use Summary³

Electricity - Grid Purchase(kBtu)	3,513,173
Natural Gas (kBtu) ⁴	6,549,737
Total Energy (kBtu)	10,062,910

Energy Intensity⁵

Site (kBtu/ft ² /yr)	80
Source (kBtu/ft ² /yr)	147

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	925
---	-----

Electric Distribution Utility

Chugach Electric Assn Inc

National Average Comparison

National Average Site EUI	102
National Average Source EUI	189
% Difference from National Average Source EUI	-22%
Building Type	Warehouse (Unrefrigerated)

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) or a Registered Architect (RA) 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 or RA 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	1025	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	Warehouse (Unrefrigerated)	Is this an accurate description of the space in question?		☐
Location	1025, Anchorage, AK 99518	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		☐
Office (Office)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	40,000 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.		☐
Weekly operating hours	45 Hours	Is this the total number of hours per week that the Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		☐
Workers on Main Shift	32	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100. The normal worker density ranges between 0.3 and 5.3 workers per 1000 square feet (92.8 square meters)		☐
Number of PCs	37	Is this the number of personal computers in the Office?		☐
Percent Cooled	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	Less than 50%	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐
Warehouse (Warehouse (Unrefrigerated))				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒

Gross Floor Area	86,400 Sq. Ft.	Is this the total gross floor area as measured between the principal exterior surfaces of the enclosing fixed walls and including all supporting functions? The total gross floor area should include offices, lobbies, rest rooms, equipment storage areas, mechanical rooms, employee break rooms, cafeterias, elevators, stairwells, all space occupied by refrigeration/freezer units, and all areas that are entirely refrigerated. Existing atriums or areas with high ceilings should only include the base floor area that they occupy. The total gross floor area should not include outside loading bays or docks.		☐
Workers on Main Shift	12	Does this number represent the average number of workers that are present during the primary shift (that is, the shift with the most workers)? Note: this is not the total number of staff employed at the property. For example, if there are three daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100.		☐
Weekly operating hours	120 Hours	Is this the total number of hours per week that this warehouse space is in operation, excluding hours when the facility is occupied by maintenance, security, or other support personnel? Note: the average warehouse space operates 60 hours per week.		☐
Percent Cooled	0 %	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?		☐
Number of walk-in refrigeration/freezer units	16	Does this count include all large walk-in refrigeration or freezer units at the warehouse?		☐
Distribution Center	Yes(Optional)	Is this building considered a distribution center?		☐
Parking (Parking)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	120,000 Sq. Ft.	Is this the total square footage of the entire parking area (enclosed + nonenclosed + open floor area)?		☐
Enclosed Floor Area	0 Sq. Ft.	Is this the total square footage of the enclosed garage space? An enclosed garage is defined as having both sides and a roof.		☐
Non-Enclosed Floor Area (w/roof)	0 Sq. Ft.	Is this the total square footage of the nonenclosed garage space? This is typically defined as the portion of the garage above ground (contains no sides but is under a roof).		☐
Open Floor Area (w/o roof)	120,000 Sq. Ft.	Is this the total square footage of the nonenclosed parking area without a roof? This is typically defined as open parking lots or the very top level of an above ground parking garage.		☐
Weekly Hours of Access	168 Hours	Is this the total number of hours per week when it is possible for a vehicle to enter or exit?		☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Chugach Electric Assn Inc

Fuel Type: Electricity		
Meter: Electricity (kWh (thousand Watt-hours)) Space(s): Entire Facility Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
03/16/2010	04/15/2010	84,203.00
02/16/2010	03/15/2010	97,080.00
01/16/2010	02/15/2010	98,332.00
12/16/2009	01/15/2010	100,049.00
11/16/2009	12/15/2009	101,112.00
10/16/2009	11/15/2009	70,981.00
09/16/2009	10/15/2009	56,587.00
08/16/2009	09/15/2009	63,432.00
07/16/2009	08/15/2009	53,141.00
06/16/2009	07/15/2009	69,330.00
05/16/2009	06/15/2009	63,374.00
Electricity Consumption (kWh (thousand Watt-hours))		857,621.00
Electricity Consumption (kBtu (thousand Btu))		2,926,202.85
Meter: 41871-003 (kWh (thousand Watt-hours)) Space(s): Entire Facility Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
03/17/2010	04/16/2010	6,024.00
02/17/2010	03/16/2010	5,107.00
01/17/2010	02/16/2010	6,905.00
12/17/2009	01/16/2010	7,765.00
11/17/2009	12/16/2009	7,561.00
10/17/2009	11/16/2009	8,685.00
09/17/2009	10/16/2009	7,846.00
08/17/2009	09/16/2009	9,517.00
07/17/2009	08/16/2009	11,430.00
06/17/2009	07/16/2009	10,480.00
05/17/2009	06/16/2009	6,148.00
41871-003 Consumption (kWh (thousand Watt-hours))		87,468.00
41871-003 Consumption (kBtu (thousand Btu))		298,440.82
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		3,224,643.67

Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☐
Fuel Type: Natural Gas		
Meter: Gas (ccf (hundred cubic feet)) Space(s): Entire Facility		
Start Date	End Date	Energy Use (ccf (hundred cubic feet))
03/03/2010	04/02/2010	8,904.00
02/03/2010	03/02/2010	8,644.00
01/03/2010	02/02/2010	9,037.00
12/03/2009	01/02/2010	11,067.00
11/03/2009	12/02/2009	9,331.00
10/03/2009	11/02/2009	5,095.00
09/03/2009	10/02/2009	2,056.00
08/03/2009	09/02/2009	1,024.00
07/03/2009	08/02/2009	1,001.00
06/03/2009	07/02/2009	1,137.00
05/03/2009	06/02/2009	1,739.00
Gas Consumption (ccf (hundred cubic feet))		59,035.00
Gas Consumption (kBtu (thousand Btu))		6,074,701.50
Total Natural Gas Consumption (kBtu (thousand Btu))		6,074,701.50
Is this the total Natural Gas consumption at this building including all Natural Gas 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.	☐

On-Site Solar and Wind Energy	
Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.	☐

Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA 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

1025
1025
Anchorage, AK 99518

Facility Owner

N/A

Primary Contact for this Facility

N/A

General Information

1025	
Gross Floor Area Excluding Parking: (ft ²)	126,400
Year Built	1980
For 12-month Evaluation Period Ending Date:	April 30, 2010

Facility Space Use Summary

Office		Parking	
Space Type	Office	Space Type	Parking
Gross Floor Area(ft ²)	40,000	Gross Floor Area(ft ²)	120,000
Weekly operating hours	45	Enclosed Floor Area	0
Workers on Main Shift	32	Non-Enclosed Floor Area (w/roof)	0
Number of PCs	37	Open Floor Area (w/o roof)	120,000
Percent Cooled	50% or more	Weekly Hours of Access	168
Percent Heated	Less than 50%		
Warehouse			
Space Type	Warehouse (Unrefrigerated)		
Gross Floor Area(ft ²)	86,400		
Workers on Main Shift	12		
Weekly operating hours	120		
Percent Cooled	0		
Percent Heated	100		
Number of walk-in refrigeration/freezer units	16		
Distribution Center ^o	Y		

Energy Performance Comparison

Performance Metrics	Evaluation Periods		Comparisons		
	Current (Ending Date 04/30/2010)	Baseline (Ending Date 04/30/2010)	Rating of 75	Target	National Average
Energy Performance Rating	68	68	75	75	50
Energy Intensity					
Site (kBtu/ft ²)	80	80	71	71	102
Source (kBtu/ft ²)	147	147	131	131	189
Energy Cost					
\$/year	\$ 168,768.20	\$ 168,768.20	\$ 150,769.93	\$ 150,769.93	\$ 216,466.79
\$/ft ² /year	\$ 1.34	\$ 1.34	\$ 1.20	\$ 1.20	\$ 1.72
Greenhouse Gas Emissions					
MtCO ₂ e/year	925	925	826	826	1,186
kgCO ₂ e/ft ² /year	7	7	6	6	9

More than 50% of your building is defined as Warehouse (Unrefrigerated). 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.

Statement of Energy Performance

2010

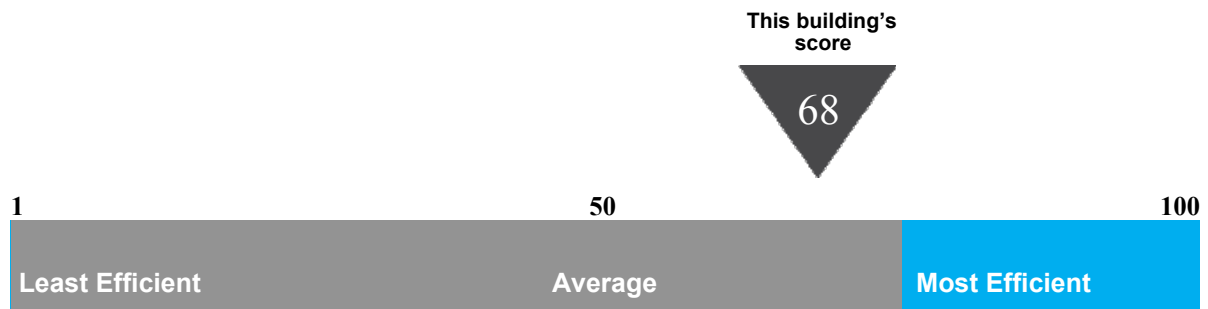
1025

1025

Anchorage, AK 99518

Portfolio Manager Building ID: 2379130

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit energystar.gov/benchmark.



This building uses 147 kBtu per square foot per year.*

*Based on source energy intensity for the 12 month period ending April 2010

Buildings with a score of 75 or higher may qualify for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at energystar.gov

Date of certification



Date Generated: 10/05/2010

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1026

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

CHUGACH
POWERING ALASKA'S FUTURE

CONTROL
CONTRACTORS

smart building solutions



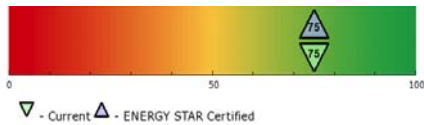
positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

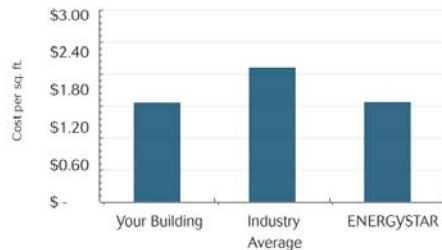


Your building's ENERGY STAR® Energy Performance Rating is **75**. Its Energy Use Index is **66 kbtu per sq. ft.**

Your building's ENERGY STAR score of 75 ranks you above average versus your peers, but your building may still have good opportunity to raise your ENERGY STAR score.



Cost

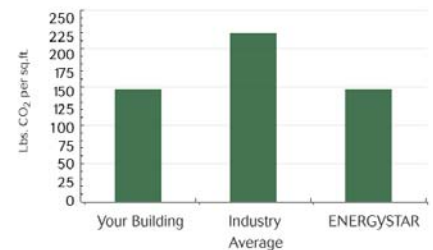


Your building's annual cost per square foot is **\$1.54 per sq. ft.** overall.

Your annual cost can be reduced by \$4,072 or 24.7% by achieving an ENERGY STAR score of 90.



Carbon Footprint



Your building's annual carbon footprint is **71 metric tons of CO₂** or **14.62 lbs per sq. ft.**

Your building's carbon emissions are 34.0% more than an energy efficient facility, and can further be reduced by 4 lbs per sq. ft. by achieving an ENERGY STAR score of 90.

You could save up to **\$4,072** annually or **\$20,360** over 5 years by raising your ENERGY STAR score to the level of 90.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Your building some control issues
- Your building is over-ventilated

How Does Your Building Use Electricity Today?

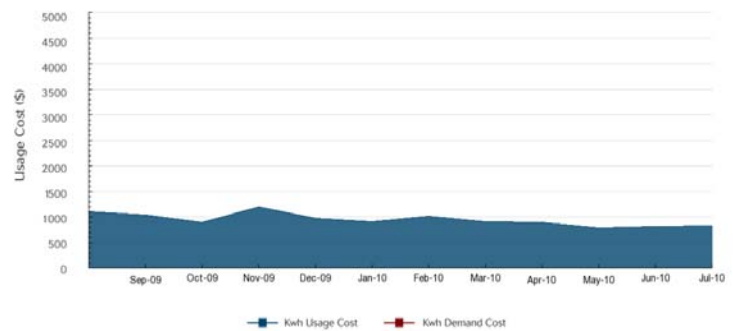
This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

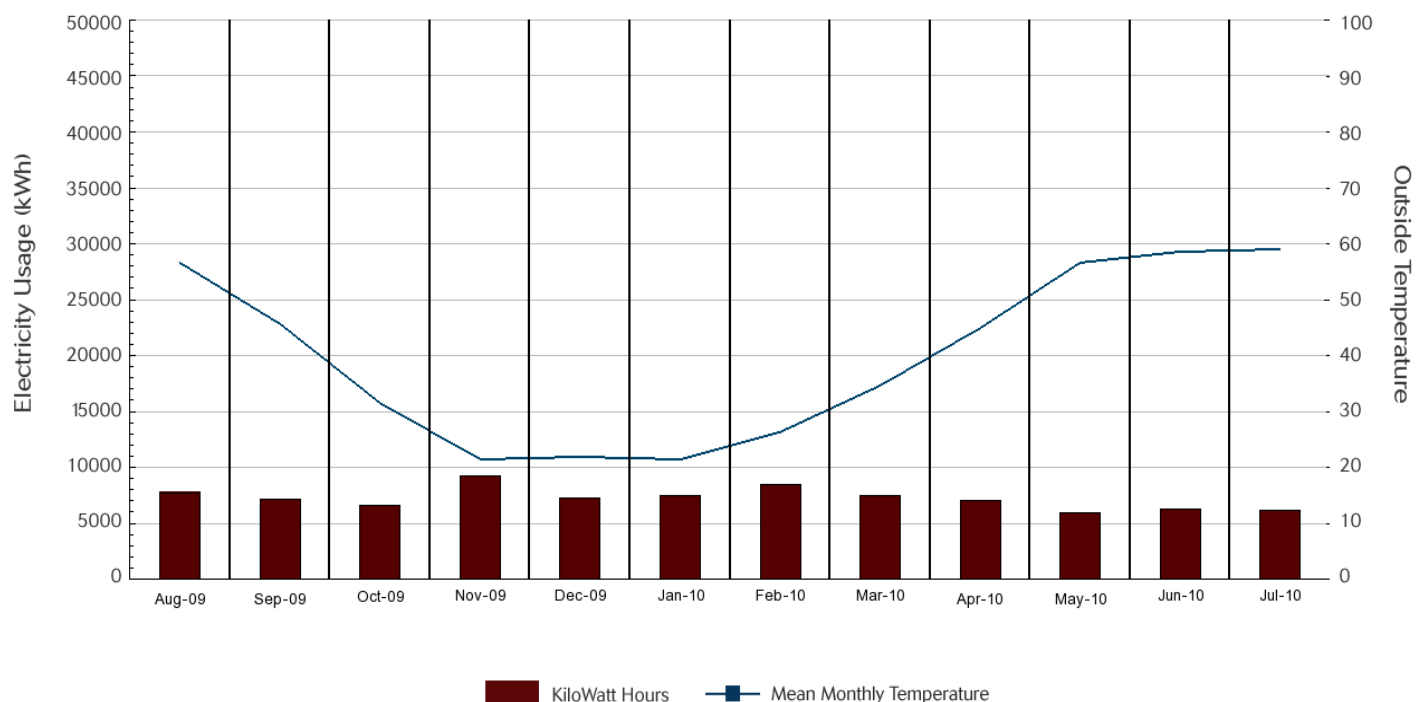
Electricity Consumption

- Electricity comprises 69.0% of your total utility cost, and 41.7% of your total utility consumption.
- Your Total Spend on electricity is \$11,387, so when considering savings opportunities, remember you can only save some percentage of that total.
- Demand costs are included in overall utility costs

Monthly Electricity Costs



Electricity Consumption and Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

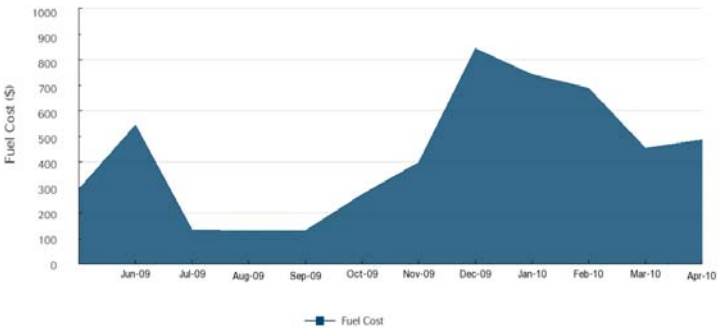


Monthly Fuel Costs

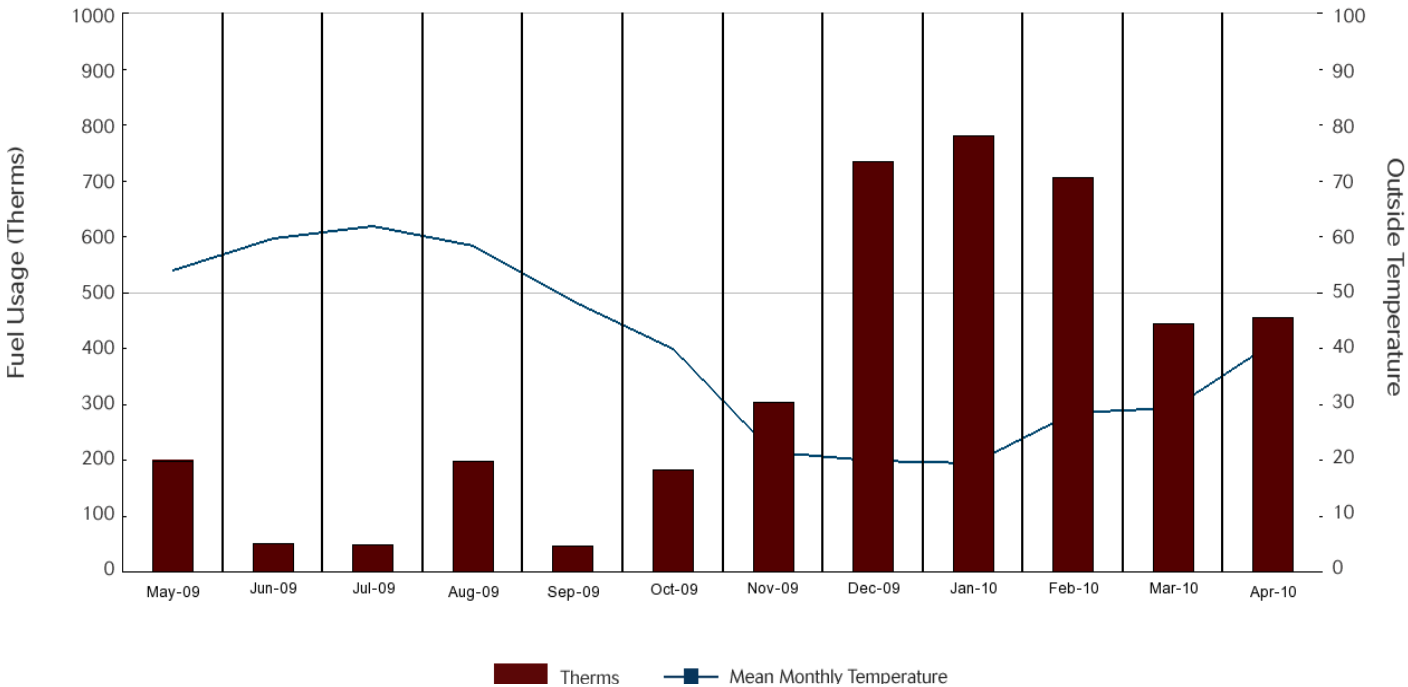
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 31.0% of your total utility cost, and 58.3% of your total utility consumption.
- Your Total Spend on Fuel is \$5,112, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption and Outside Air Temperature



Building Comfort and Ventilation Analysis

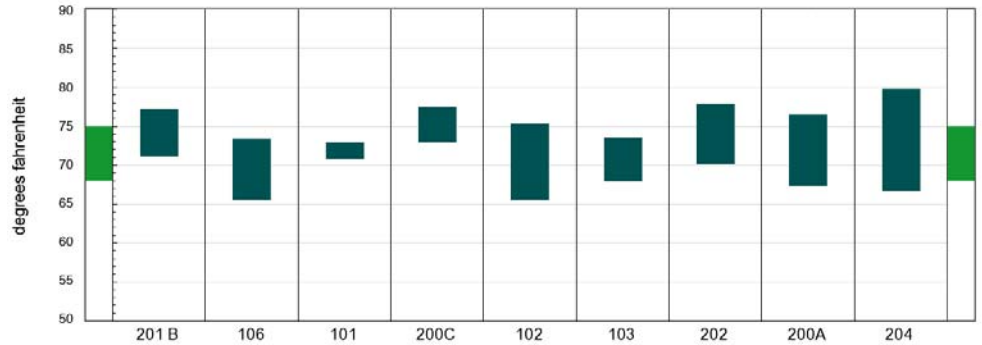
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building is out of control with ample opportunity to save energy.

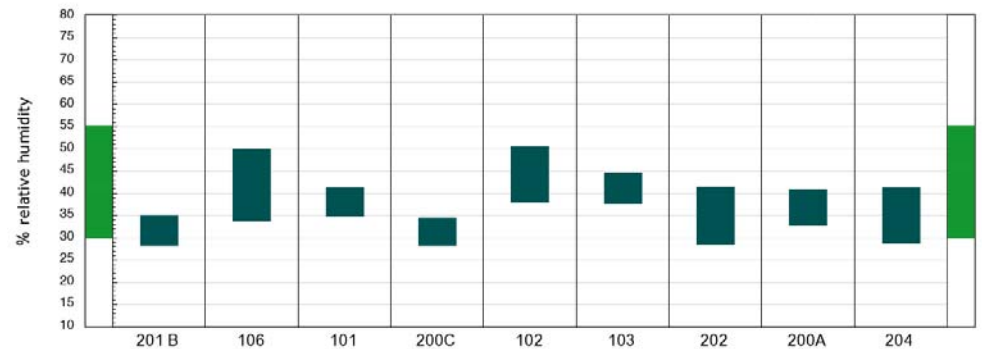
- 6 space(s) were too warm at times
- 4 space(s) were too cool at times
- 7 space(s) had excessive temperature variation



Relative Humidity Findings



- 0 space(s) had high relative humidity at times
- 2 space(s) had low relative humidity at times

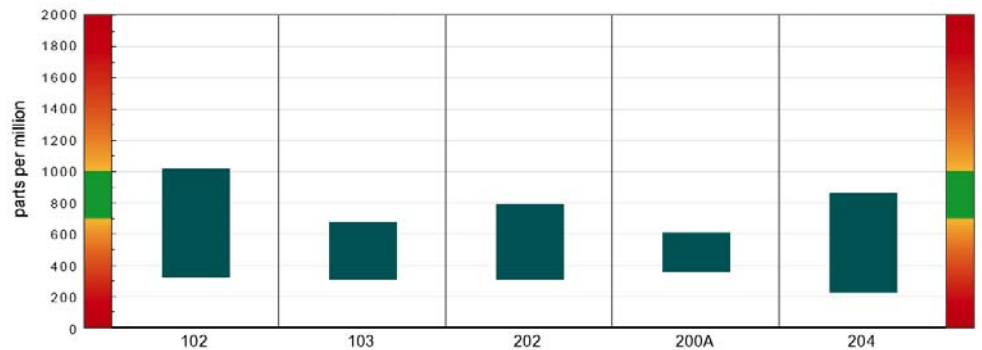


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 1 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: $\pm 1^\circ\text{F}$]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating setpoint and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating set point is 68 / 68
	Occupied/Unoccupied Cooling set point is 75 / 75

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Further Comfort & Energy Recommendations

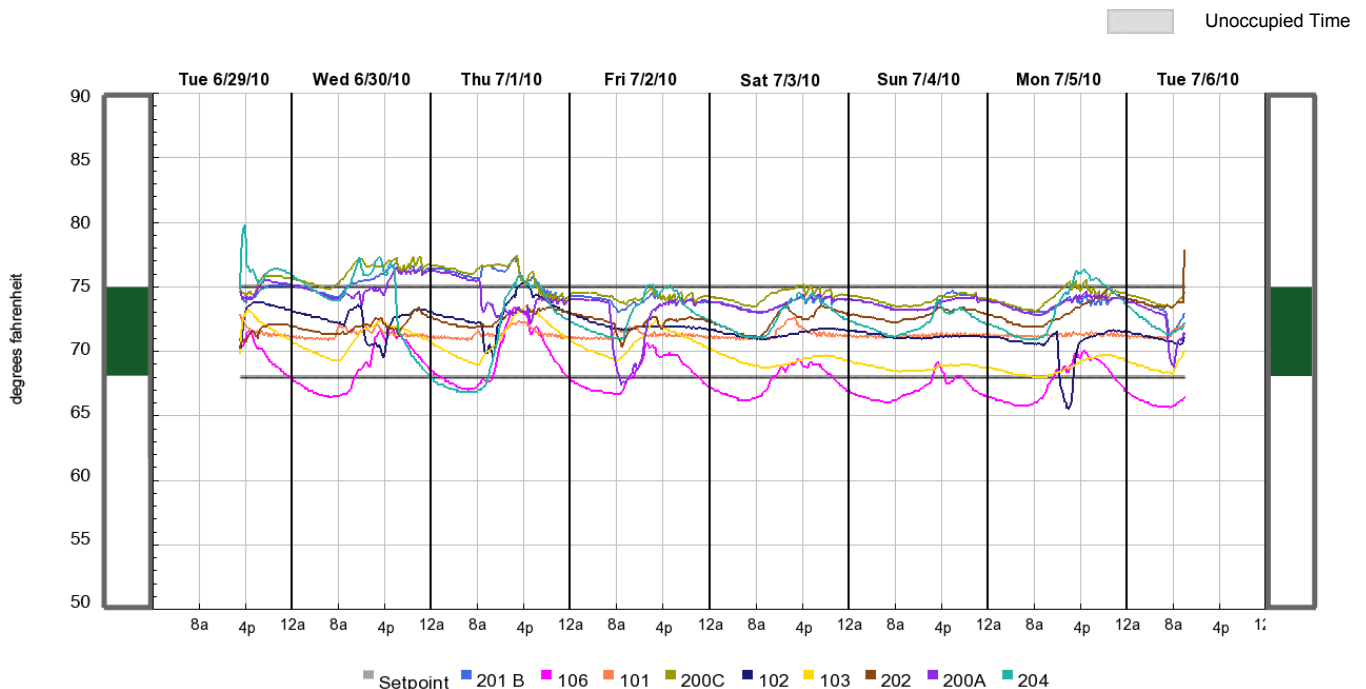
- Increase the amount of heating set back possible during the unoccupied times

Monitor Statistics

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%ToR*	SV†
201 B		71	77	74	22%	8
106		66	73	68	57%	6
101		71	72	71	1%	7
200C		73	77	75	31%	3
102		66	75	72	2%	6
103		68	73	70	6%	4
202		71	79	73	1%	7
200A		68	76	74	14%	7
204		67	78	73	24%	7

These statistics are for occupied times only.

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

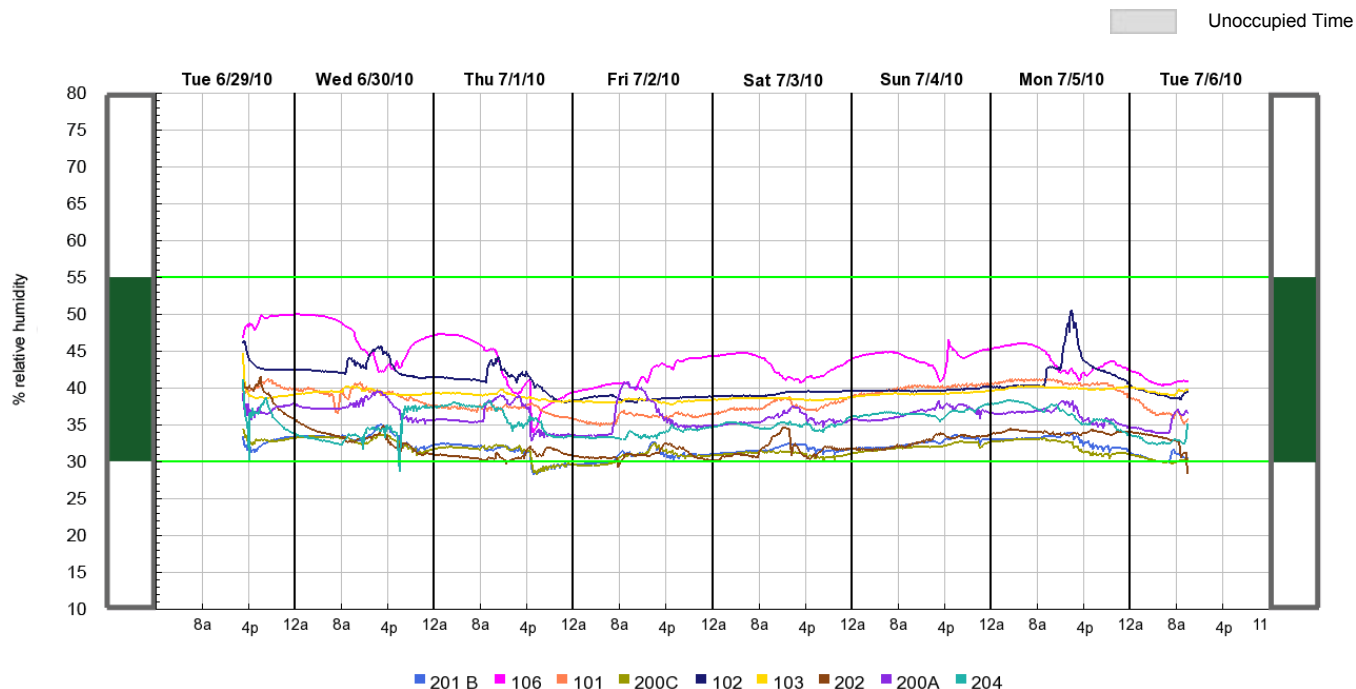
- Add humidification system
- Improve ventilation control

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
201 B		28	35	32	9%
106		34	50	44	0%
101		35	41	38	0%
200C		28	34	32	11%
102		38	51	41	0%
103		38	45	39	0%
202		28	41	33	2%
200A		33	41	36	0%
204		29	41	35	0%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

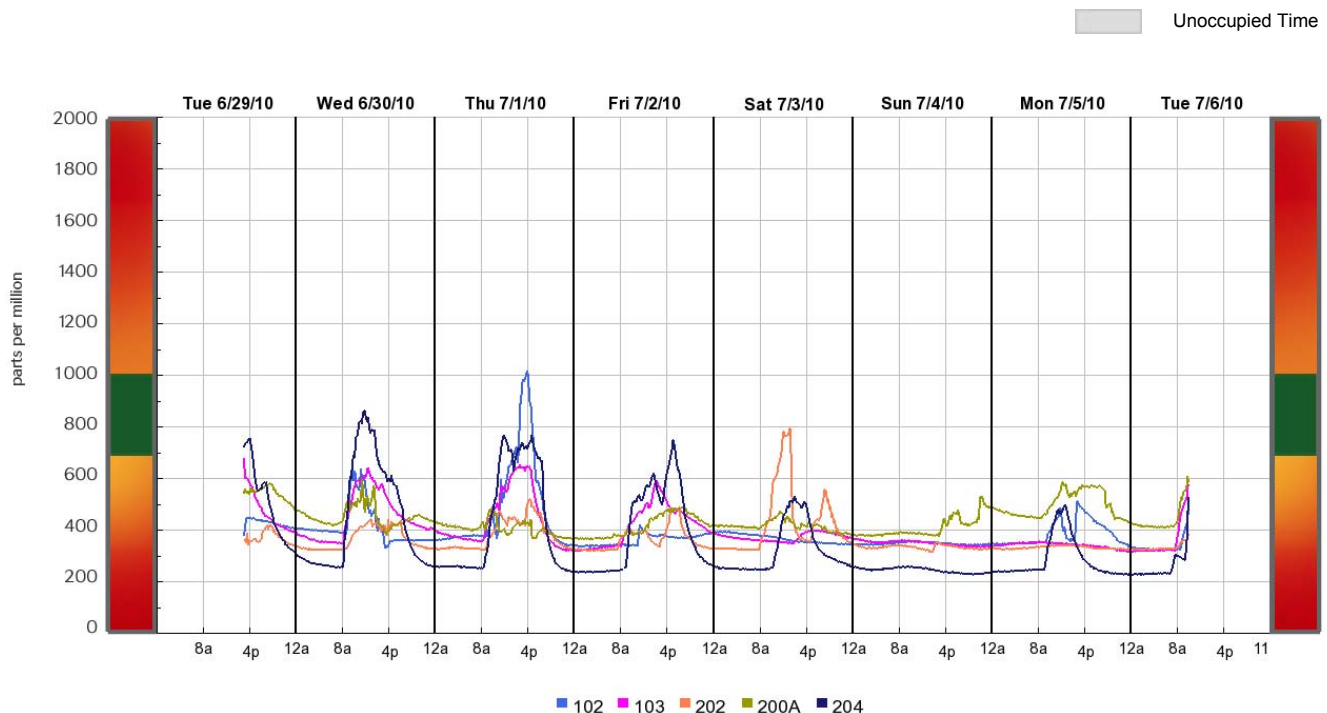
Comfort & Health Recommendations

- Increase the amount of ventilation into the building.

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
102		322	1017	390	98%
103		314	679	395	100%
202		314	791	363	99%
200A		362	609	437	100%
204		225	862	353	94%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 24 average occupied hours

Energy Savings Opportunities

Our findings indicate your building is not wasting energy on lights.

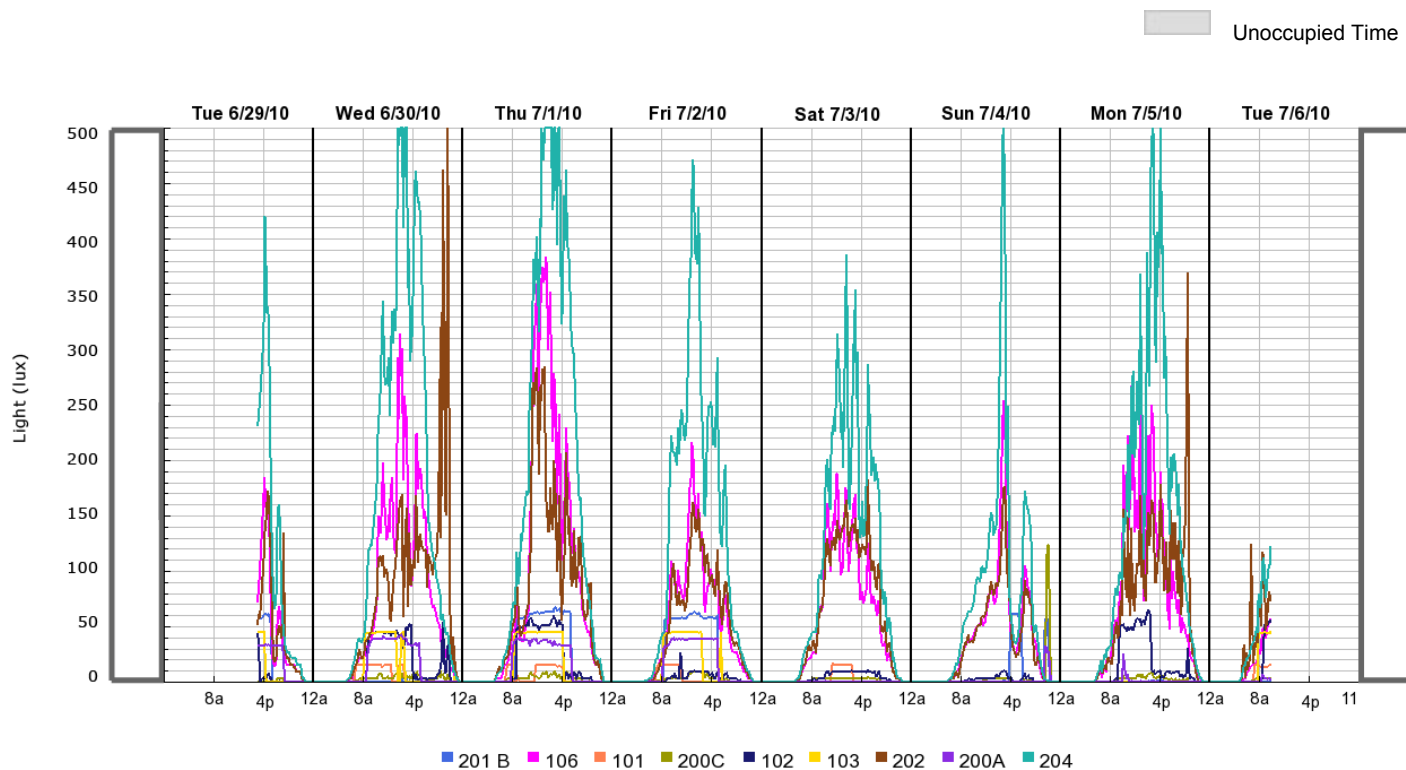
Energy Recommendations Based on Measurements

- No recommendations at this time.

Further Energy Recommendations

- No recommendations at this time.

Monitor	Alert Lvl	Measured On-Time
201 B		2.9 hrs
106		1.9 hrs
101		3.3 hrs
200C		3.5 hrs
102		6.9 hrs
103		4.1 hrs
202		1.8 hrs
200A		5.5 hrs
204		4.7 hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99503

Outdoor Temperature

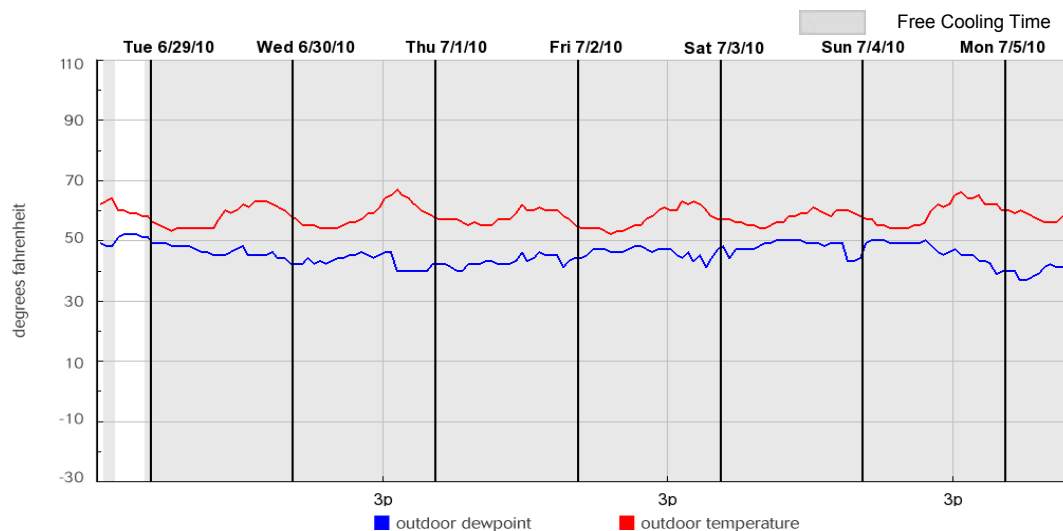
Test Period Avg: 6/29/10 – 7/6/10	Heating Degree Days	Cooling Degree Days
58 °F	7	0

Outdoor Temperature and Dewpoint

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dewpoint during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	XXX
Contact	XXX
Address	Anchorage, AK 99503
Building Information	
Building Background	Building Usage: Office Building Size (sq ft): 10700 # of Stories: 2 Building Status: Existing Construction type: Wood Frame LEED Cert.: None Heating System: Boiler Domestic Hot Water: Gas or Other Fuel (Low Usage) Economizer: Yes Cooling System: None
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
201 B	20420
106	20418
101	20416
200C	20415
102	20300
103	20295
202	20293
200A	20289
204	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	00:00	68	75	Yes
Tue				
Wed	23:59	68	75	No
Thu				
Fri				
Sat				
Sun				



Building Description

Office			
Gross Floor Area	10700	Weekly Operating Hours	45
Number of Workers on Main Shift	20	Number of PCs	20
Office Air-Conditioned	50% or more	Office Heated	50% or more

Building Controls Information

Current Controls	
Controls Type	Thermostat
Schedule Type	On/Off (Auto fan)
Air Delivery Method	Constant Volume (CV)
Air-Flow Modulation	N/A

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
8/18/09	7688	\$1,107		\$0
9/18/09	7166	\$1,042		\$0
10/18/09	6564	\$891		\$0
11/18/09	9276	\$1,204		\$0
12/18/09	7292	\$972		\$0
1/18/10	7510	\$913		\$0
2/18/10	8436	\$1,007		\$0
3/18/10	7477	\$910		\$0
4/18/10	7038	\$900		\$0
5/18/10	5987	\$788		\$0
6/18/10	6282	\$820		\$0
7/18/10	6189	\$833		\$0
TOTAL:	86905	\$11,387		\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
5/8/09	198	\$293
6/8/09	50	\$543
7/8/09	48	\$134
8/8/09	198	\$130
9/8/09	46	\$132
10/8/09	182	\$272
11/8/09	303	\$397
12/8/09	733	\$842
1/8/10	781	\$742
2/8/10	705	\$689
3/8/10	445	\$454
4/8/10	456	\$484
TOTAL:	4145	\$5,112

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE

1027

ASSESSMENT PERFORMED BY

Control Contractors – Anchorage

5660 B Street

Anchorage, Alaska 99518



smart building solutions

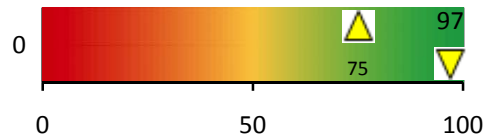


posi⊕iveENERGY

EXECUTIVE SUMMARY



Energy Use

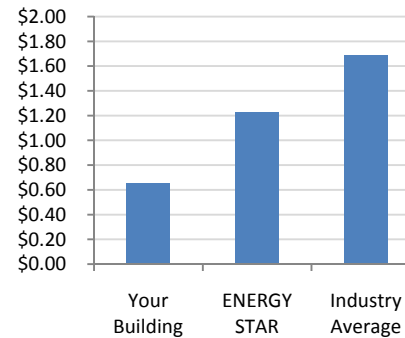


Your building's ENERGY STAR® Energy Performance Rating is 97. Its Energy Use Index is 37kbtu per sq. ft.

Your building's ENERGY STAR score of 97 ranks you above average versus your peers, and meets the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

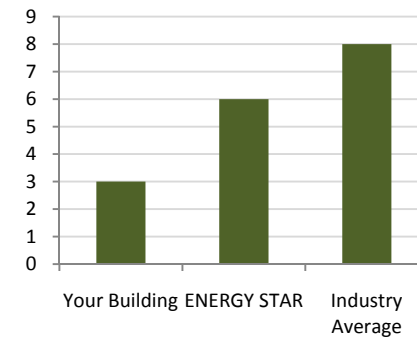


Your building's annual cost per square foot is \$0.65 per sq. ft. overall.

Your building's cost per square foot is \$0.16 more than a building with an ENERGY STAR score of 100. Your annual cost can be reduced by \$8,365 (24.4%) or \$41,825 over 5 years by achieving an ENERGY STAR score of 100.



Carbon Footprint



Your building's annual carbon footprint is 173 metric tons of CO2 or 3lbs per sq. ft.

Your building's carbon emissions are 32.1% more than a building with an ENERGY STAR score of 100 and can be reduced by 1lb per sq. ft. by achieving an ENERGY STAR score of 100.

You could save up to **\$8,365** annually or **\$41,825** over 5 years by raising your ENERGY STAR score to the level of 100

While a detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR database.

How Does Your Building Use Electricity Today?

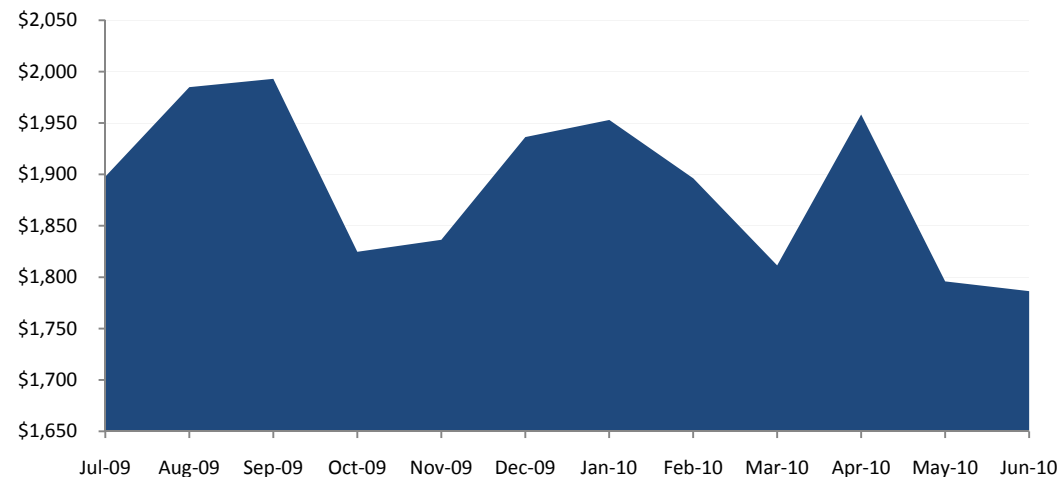
This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

MONTHLY ELECTRICTY COST

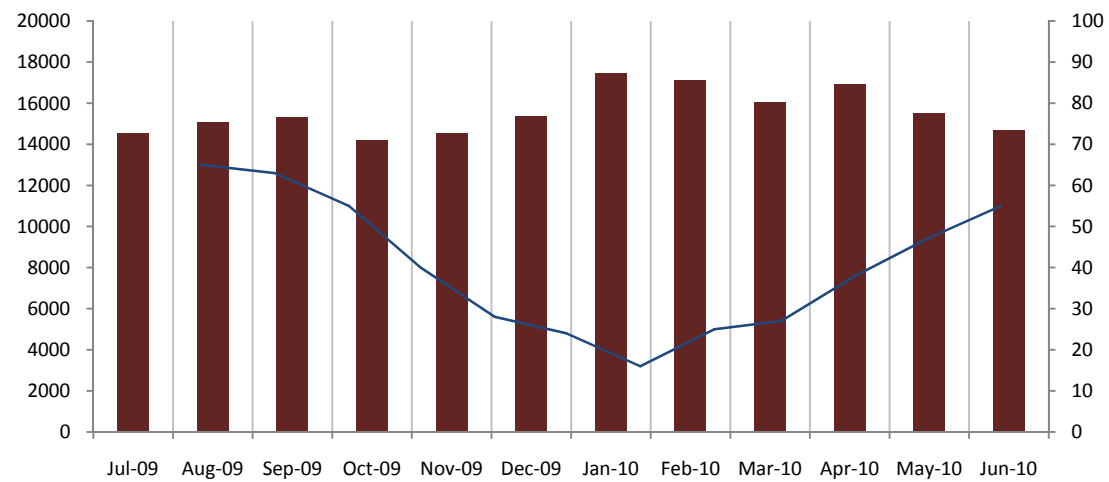
Utility Bill Analysis

Electricity Consumption

- Electricity comprises of 66% of your total utility cost, and 32% of your total utility consumption.
- Your Total Spend on electricity is \$22,673, so when considering savings opportunities, remember you can only save some percentage of that total.



ELECTRICITY CONSUMPTION AND OUTSIDE AIRTEMPERATURE



How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read



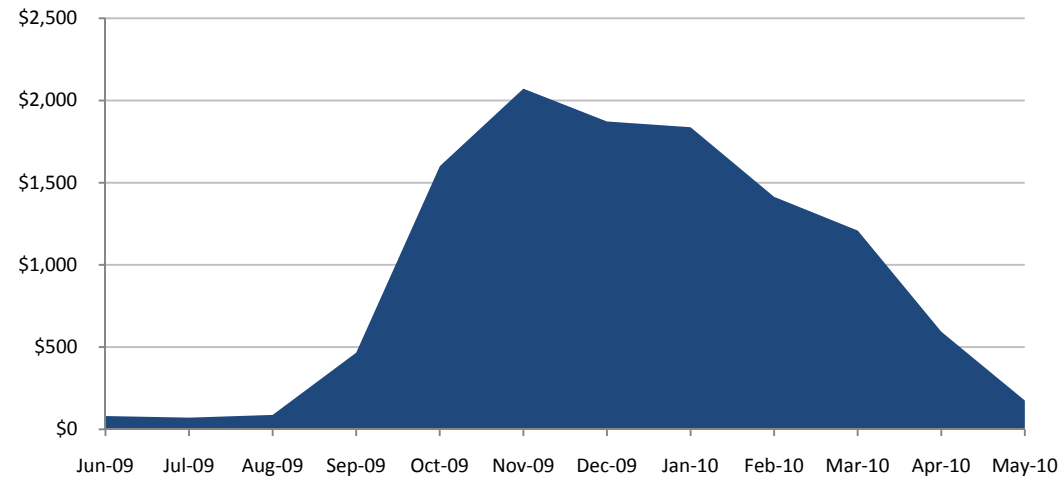
MONTHLY FUEL COST

Utility Bill Analysis

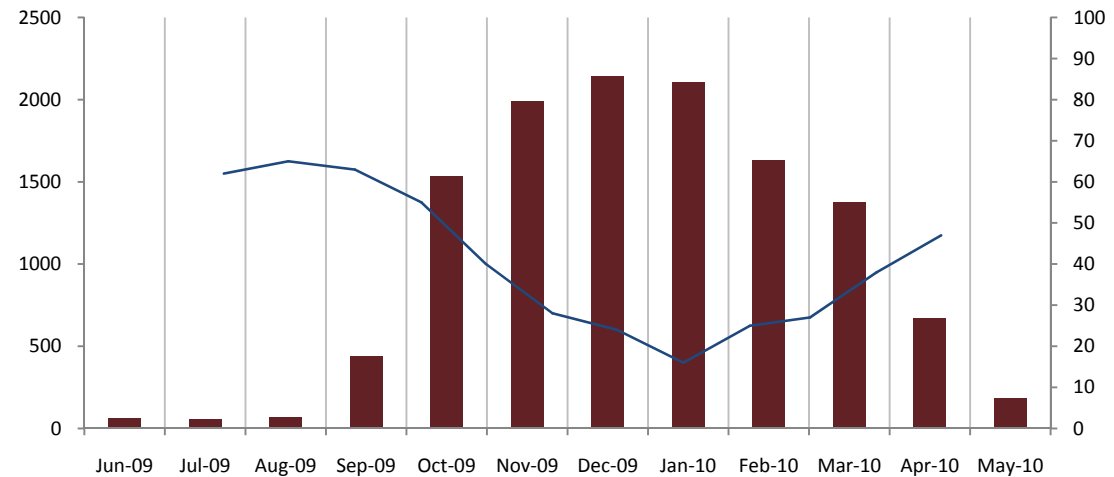
Fuel Consumption

- Fuel comprises 34% of your total utility cost, and 68% of your total utility consumption.

Your Total Spend on Fuel is \$11,472, so when considering savings opportunities, remember you can only save some percentage



FUEL CONSUMPTION AND OUTSIDE AIRTEMPERATURE

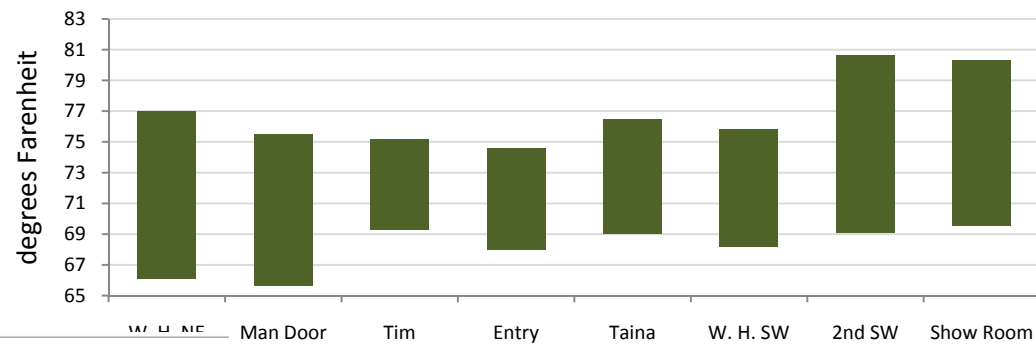


Building Comfort and Ventilation Analysis

This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

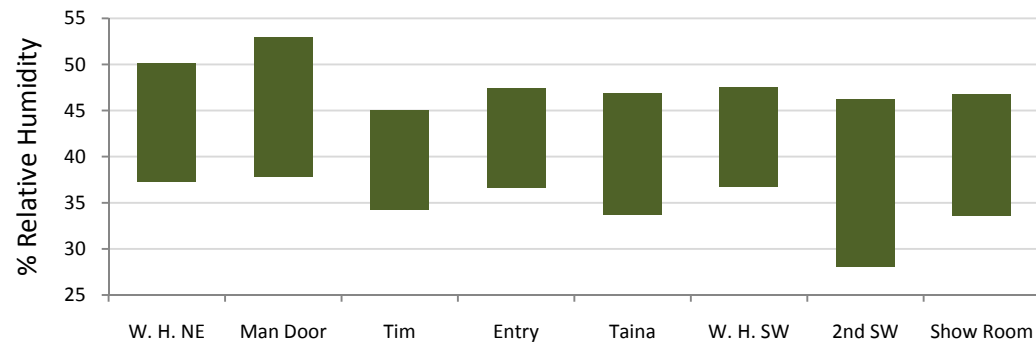
TEMPERATURE FINDINGS

- 2 space(s) were too warm at times
- 0 space(s) were too cool at times
- 2 space(s) had excessive temperature variation



RELATIVE HUMIDITY

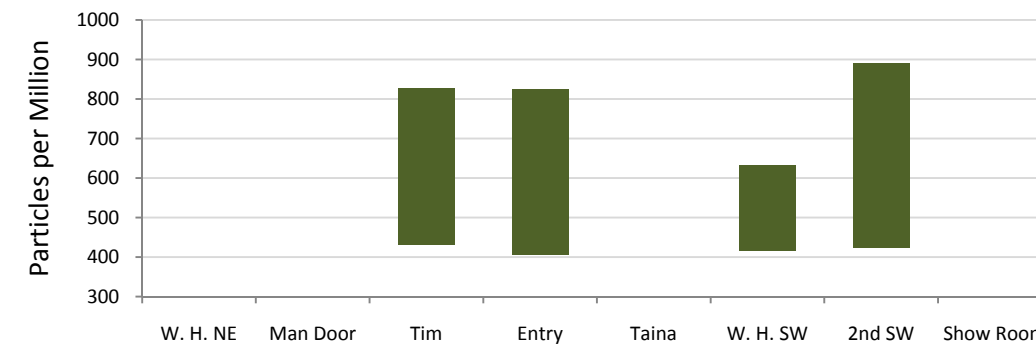
- 0 space(s) had high relative humidity at times
- 0 space(s) had low relative humidity



CARBON DIOXIDE

Your building is over ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 0 space(s) had low carbon dioxide levels



Temperature

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

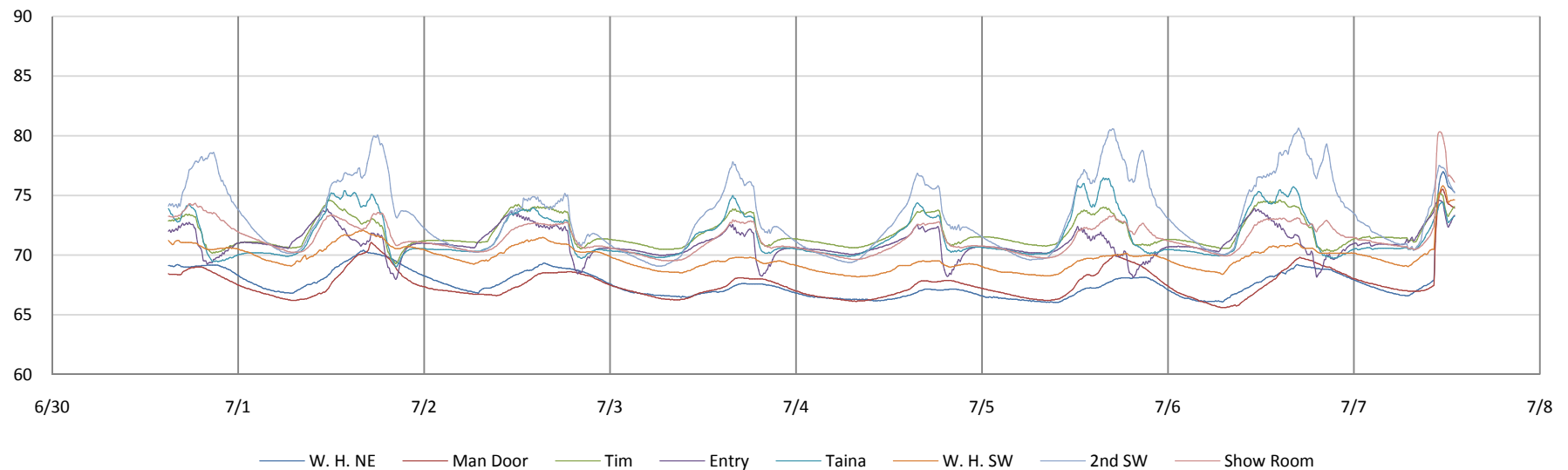
ENERGY SAVING OPPORTUNITIES

Our findings indicate there are several ways to save money by operating your building differently.

Energy Recommendations based on Measurements

- Add a averaging sensor to your thermostats to reduce temperature variation

TIME – TEMPERATURE



Relative-Humidity

Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

ANALYSIS AND RECOMMENDATIONS

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

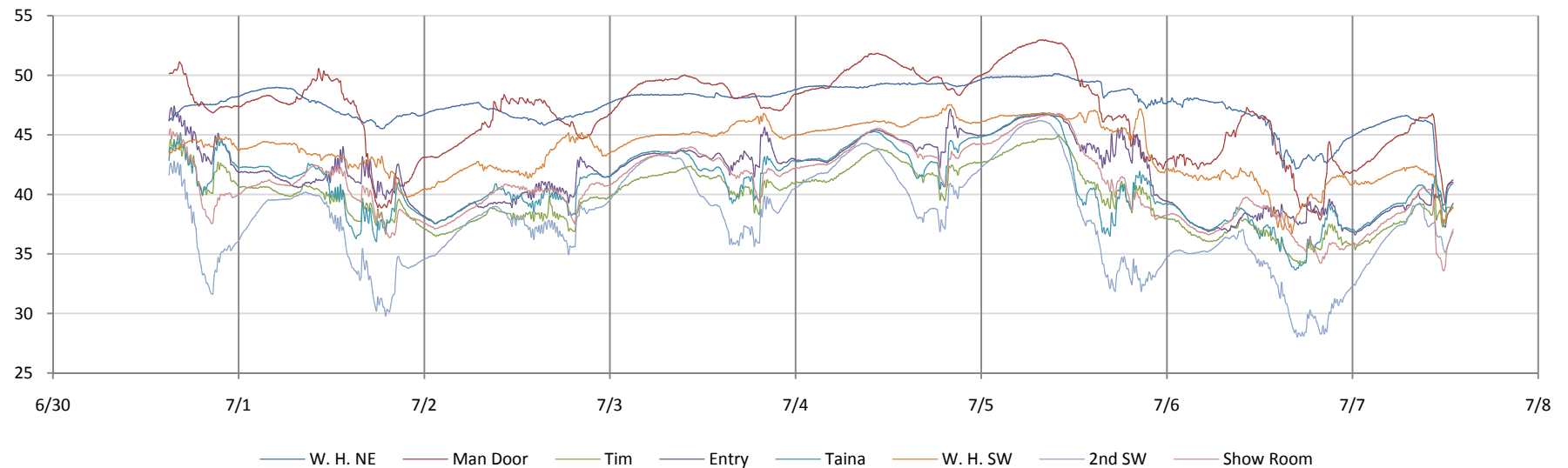
Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

- None

TIME-RELATIVE HUMIDITY



Carbon Dioxide

Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

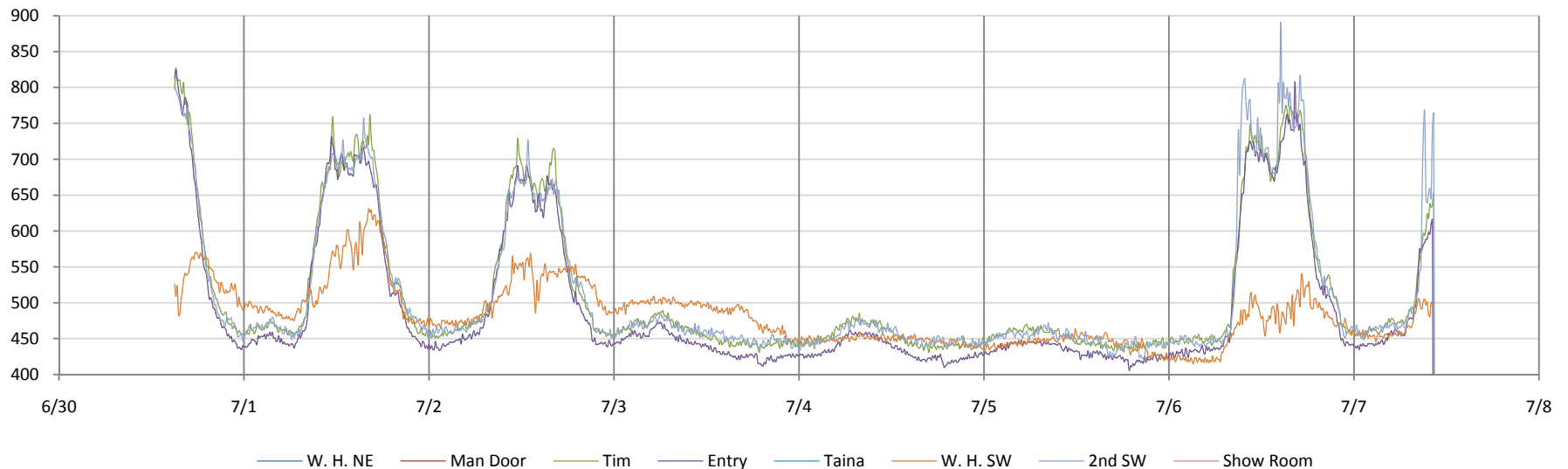
Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building different:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck or leaky
- Reduce the amount of outside air ventilation, except during economizer usage.
- Install demand control ventilation

TIME-CARBON DIOXIDE



Lighting

Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

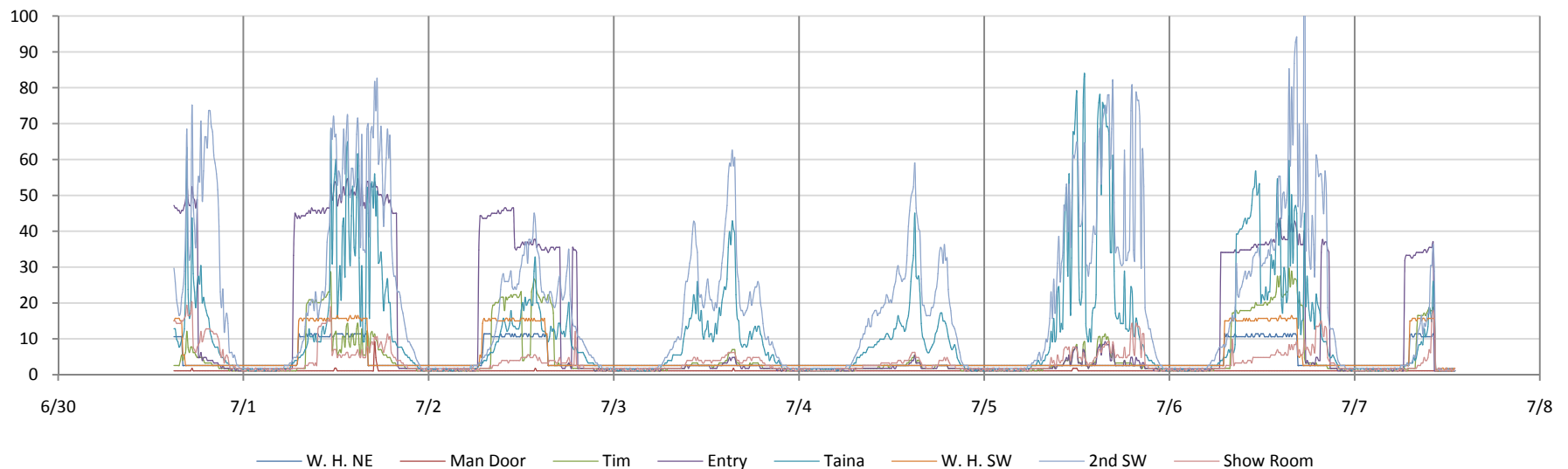
Sources: BOMA, ENERGY STAR, DOE

Energy Saving Opportunities

Energy Recommendations Based on Measurements

- Install occupancy, day light sensors
- Install high efficiency lighting in the warehouse

TIME LIGHTING





STATEMENT OF ENERGY PERFORMANCE

1027

Building ID: 2379151

For 12-month Period Ending: May 31, 2010¹

Date SEP becomes ineligible: N/A

Date SEP Generated: October 05, 2010

Facility

1027
1027
Anchorage, AK 99507

Facility Owner

N/A

Primary Contact for this Facility

N/A

Year Built: 2004**Gross Floor Area (ft²):** 52,785**Energy Performance Rating² (1-100)** 97**Site Energy Use Summary³**

Electricity - Grid Purchase(kBtu)	629,506
Natural Gas (kBtu) ⁴	1,308,411
Total Energy (kBtu)	1,937,917

Energy Intensity⁵

Site (kBtu/ft ² /yr)	37
Source (kBtu/ft ² /yr)	66

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	173
---	-----

Electric Distribution Utility

Chugach Electric Assn Inc

National Average Comparison

National Average Site EUI	95
National Average Source EUI	171
% Difference from National Average Source EUI	-61%
Building Type	Office

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) or a Registered Architect (RA) 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 or RA 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	1027	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	Office	Is this an accurate description of the space in question?		☐
Location	1027, Anchorage, AK 99507	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		☐
Office (Office)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	35,190 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.		☐
Weekly operating hours	45 Hours	Is this the total number of hours per week that the Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		☐
Workers on Main Shift	15	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100. The normal worker density ranges between 0.3 and 5.3 workers per 1000 square feet (92.8 square meters)		☐
Number of PCs	13	Is this the number of personal computers in the Office?		☐
Percent Cooled	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐
Warehouse (Warehouse (Unrefrigerated))				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒

Gross Floor Area	17,595 Sq. Ft.	Is this the total gross floor area as measured between the principal exterior surfaces of the enclosing fixed walls and including all supporting functions? The total gross floor area should include offices, lobbies, rest rooms, equipment storage areas, mechanical rooms, employee break rooms, cafeterias, elevators, stairwells, all space occupied by refrigeration/freezer units, and all areas that are entirely refrigerated. Existing atriums or areas with high ceilings should only include the base floor area that they occupy. The total gross floor area should not include outside loading bays or docks.		☐
Workers on Main Shift	15	Does this number represent the average number of workers that are present during the primary shift (that is, the shift with the most workers)? Note: this is not the total number of staff employed at the property. For example, if there are three daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100.		☐
Weekly operating hours	50 Hours	Is this the total number of hours per week that this warehouse space is in operation, excluding hours when the facility is occupied by maintenance, security, or other support personnel? Note: the average warehouse space operates 60 hours per week.		☐
Percent Cooled	0 %	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?		☐
Number of walk-in refrigeration/freezer units	0	Does this count include all large walk-in refrigeration or freezer units at the warehouse?		☐
Distribution Center	Yes(Optional)	Is this building considered a distribution center?		☐
Parking (Parking)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	35,000 Sq. Ft.	Is this the total square footage of the entire parking area (enclosed + nonenclosed + open floor area)?		☐
Enclosed Floor Area	0 Sq. Ft.	Is this the total square footage of the enclosed garage space? An enclosed garage is defined as having both sides and a roof.		☐
Non-Enclosed Floor Area (w/roof)	0 Sq. Ft.	Is this the total square footage of the nonenclosed garage space? This is typically defined as the portion of the garage above ground (contains no sides but is under a roof).		☐
Open Floor Area (w/o roof)	35,000 Sq. Ft.	Is this the total square footage of the nonenclosed parking area without a roof? This is typically defined as open parking lots or the very top level of an above ground parking garage.		☐
Weekly Hours of Access	168 Hours	Is this the total number of hours per week when it is possible for a vehicle to enter or exit?		☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Chugach Electric Assn Inc

Fuel Type: Electricity		
Meter: Electricity (kWh (thousand Watt-hours)) Space(s): Entire Facility Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
04/07/2010	05/07/2010	16,920.00
03/08/2010	04/07/2010	16,040.00
02/05/2010	03/08/2010	17,120.00
01/05/2010	02/05/2010	17,440.00
12/04/2009	01/05/2010	15,360.00
11/05/2009	12/04/2009	14,520.00
10/06/2009	11/05/2009	14,160.00
09/04/2009	10/06/2009	15,320.00
08/05/2009	09/04/2009	15,080.00
07/07/2009	08/05/2009	14,520.00
06/05/2009	07/07/2009	13,800.00
Electricity Consumption (kWh (thousand Watt-hours))		170,280.00
Electricity Consumption (kBtu (thousand Btu))		580,995.36
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		580,995.36
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☐
Fuel Type: Natural Gas		
Meter: 16011-247530 (ccf (hundred cubic feet)) Space(s): Entire Facility		
Start Date	End Date	Energy Use (ccf (hundred cubic feet))
04/18/2010	05/17/2010	669.31
03/18/2010	04/17/2010	1,378.86
02/18/2010	03/17/2010	1,635.04
01/18/2010	02/17/2010	2,107.18
12/18/2009	01/17/2010	2,146.08
11/18/2009	12/17/2009	1,993.17
10/18/2009	11/17/2009	1,537.13
09/18/2009	10/17/2009	438.61
08/18/2009	09/17/2009	72.43
07/18/2009	08/17/2009	56.33
06/18/2009	07/17/2009	65.72

16011-247530 Consumption (ccf (hundred cubic feet))	12,099.86
16011-247530 Consumption (kBtu (thousand Btu))	1,245,075.59
Total Natural Gas Consumption (kBtu (thousand Btu))	1,245,075.59
Is this the total Natural Gas consumption at this building including all Natural Gas 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.	☐
--	--------------------------

On-Site Solar and Wind Energy

Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.	☐
---	--------------------------

Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA 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
1027
1027
Anchorage, AK 99507

Facility Owner
N/A

Primary Contact for this Facility
N/A

General Information

1027	
Gross Floor Area Excluding Parking: (ft ²)	52,785
Year Built	2004
For 12-month Evaluation Period Ending Date:	May 31, 2010

Facility Space Use Summary

Office		Parking	
Space Type	Office	Space Type	Parking
Gross Floor Area(ft ²)	35,190	Gross Floor Area(ft ²)	35,000
Weekly operating hours	45	Enclosed Floor Area	0
Workers on Main Shift	15	Non-Enclosed Floor Area (w/roof)	0
Number of PCs	13	Open Floor Area (w/o roof)	35,000
Percent Cooled	50% or more	Weekly Hours of Access	168
Percent Heated	50% or more		
Warehouse			
Space Type	Warehouse (Unrefrigerated)		
Gross Floor Area(ft ²)	17,595		
Workers on Main Shift	15		
Weekly operating hours	50		
Percent Cooled	0		
Percent Heated	100		
Number of walk-in refrigeration/freezer units	0		
Distribution Center ^o	Y		

Energy Performance Comparison

Performance Metrics	Evaluation Periods		Comparisons		
	Current (Ending Date 05/31/2010)	Baseline (Ending Date 05/31/2010)	Rating of 75	Target	National Average
Energy Performance Rating	97	97	75	100	50
Energy Intensity					
Site (kBtu/ft ²)	37	37	69	28	95
Source (kBtu/ft ²)	66	66	124	50	171
Energy Cost					
\$/year	\$ 34,309.62	\$ 34,309.62	\$ 64,862.10	\$ 25,944.84	\$ 89,087.25
\$/ft ² /year	\$ 0.65	\$ 0.65	\$ 1.23	\$ 0.49	\$ 1.69
Greenhouse Gas Emissions					
MtCO ₂ e/year	173	173	327	131	449
kgCO ₂ e/ft ² /year	3	3	6	2	8

More than 50% of your building is defined as Office. 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.

Statement of Energy Performance

2010

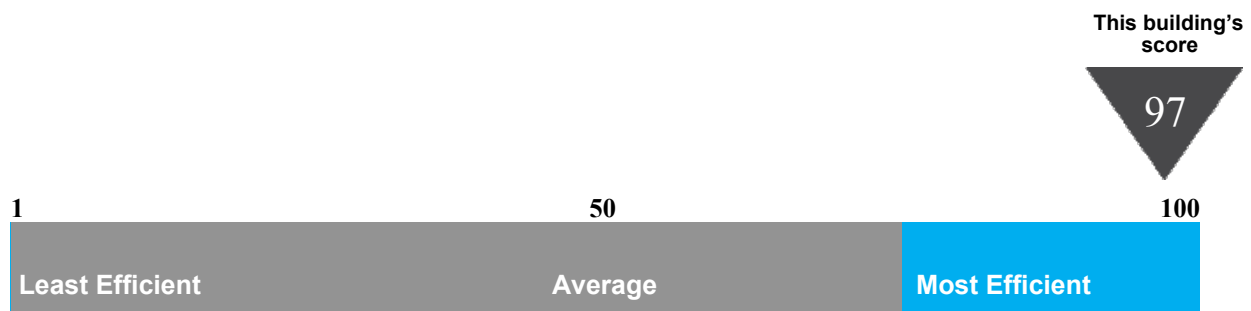
1027

1027

Anchorage, AK 99507

Portfolio Manager Building ID: 2379151

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit energystar.gov/benchmark.



This building uses 66 kBtu per square foot per year.*

*Based on source energy intensity for the 12 month period ending May 2010

Buildings with a score of
75 or higher may qualify
for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at energystar.gov

Date of certification



Date Generated: 10/05/2010

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1028

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

CHUGACH
POWERING ALASKA'S FUTURE

CONTROL
CONTRACTORS

smart building solutions



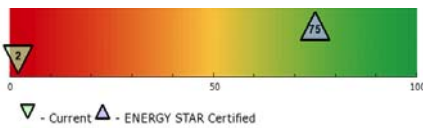
positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

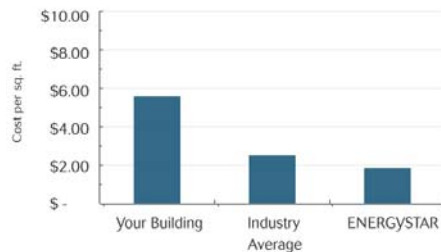


Your building's ENERGY STAR® Energy Performance Rating is **2**. Its Energy Use Index is **256 kbtu per sq. ft.**

Your building's ENERGY STAR score of 2 ranks you below average versus your peers, and falls well below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

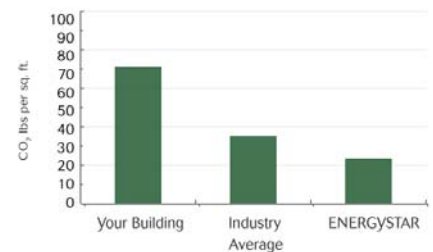


Your building's annual cost per square foot is **\$5.55 per sq. ft.** overall.

Your building's cost per square foot is \$3.07 more than the industry average. Your annual cost can be reduced by \$429,529 or 55.4% by achieving an ENERGY STAR score of 50.



Carbon Footprint



Your building's annual carbon footprint is **4,484 metric tons of CO₂** or **70.74 lbs per sq. ft.**

Your building's carbon emissions are 102.3% more than the industry average, and can be reduced by 36 lbs per sq. ft. by achieving an ENERGY STAR score of 50.

You could save up to **\$429,529** annually or **\$2,147,645** over 5 years by raising your ENERGY STAR score to the level of 50.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Your building is out of control in select areas
- Your building is looks to be over-ventilated



How Does Your Building Use Electricity Today?

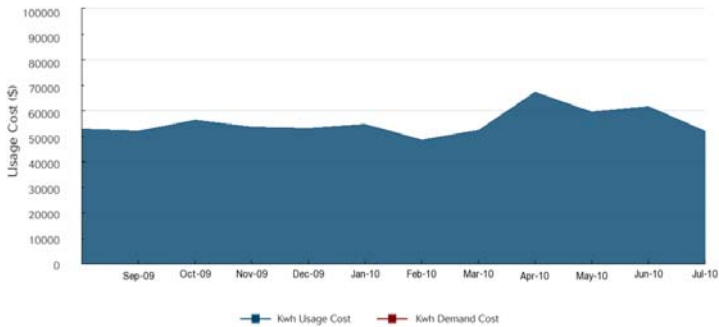
This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

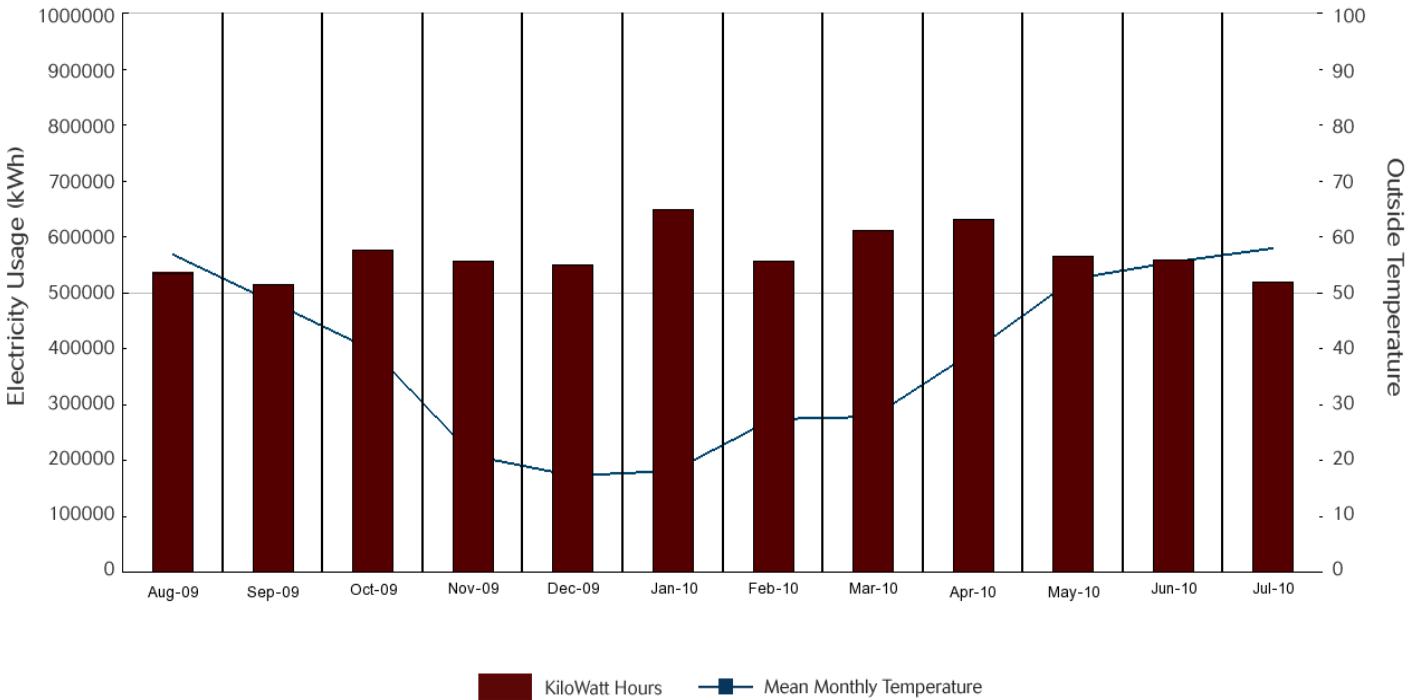
Electricity Consumption

- Electricity comprises 85.6% of your total utility cost, and 65.0% of your total utility consumption.
- Your Total Spend on electricity is \$663,245, so when considering savings opportunities, remember you can only save some percentage of that total.

Monthly Electricity Costs



Electricity Consumption And Outside Air Temperature



How Does Your Building Use Fuel Today?

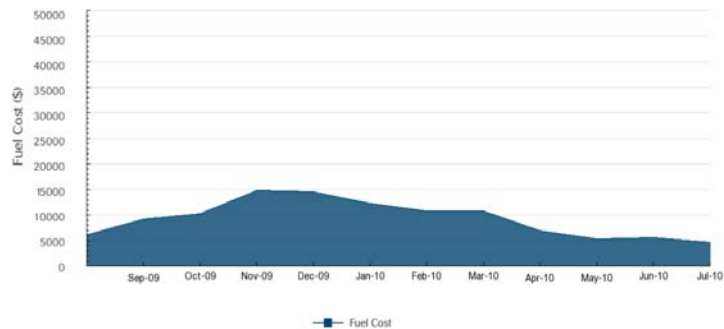
This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Monthly Fuel Costs

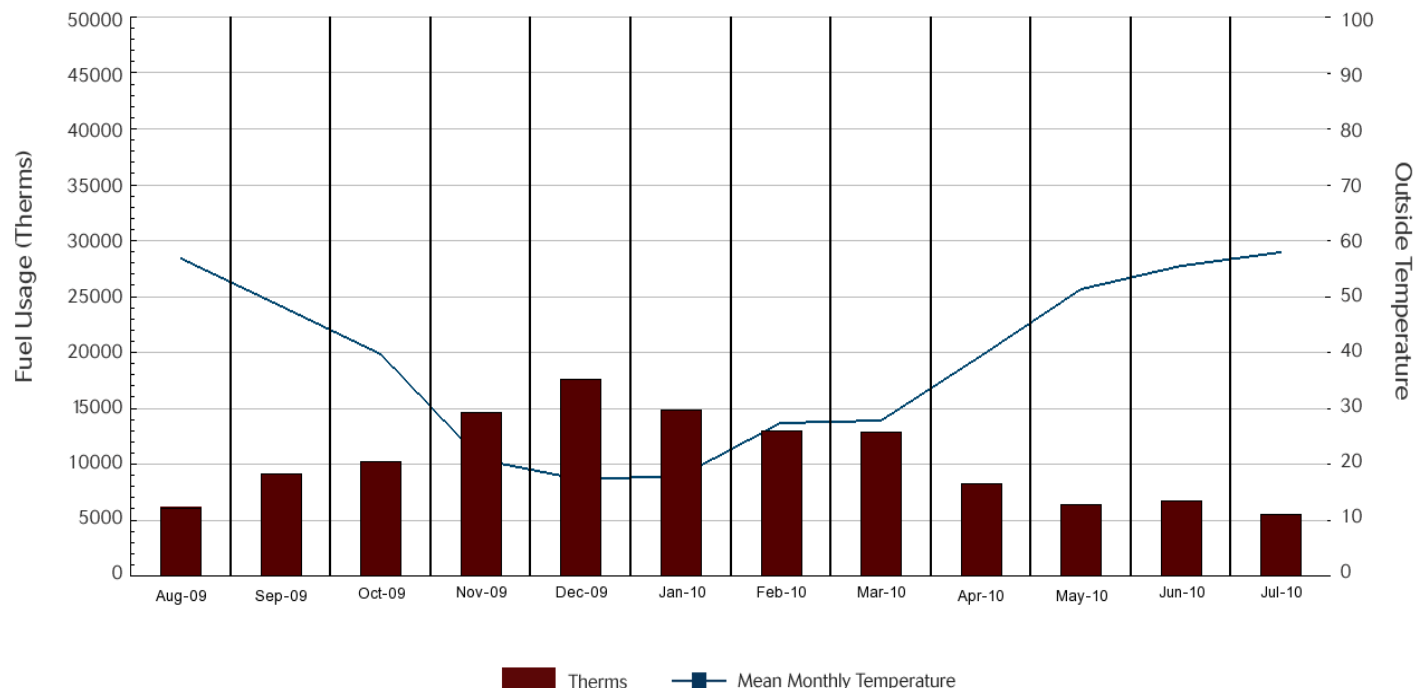
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 14.4% of your total utility cost, and 35.0% of your total utility consumption.
- Your Total Spend on Fuel is \$111,631, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption And Outside Air Temperature



Building Comfort and Ventilation Analysis

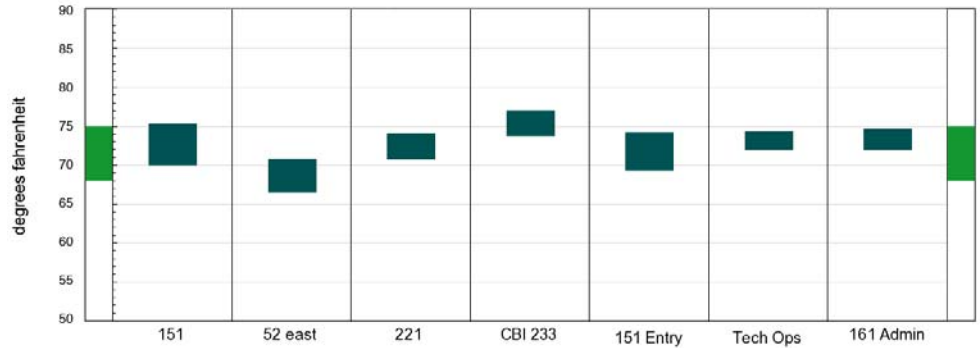
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building is out of control with ample opportunity to save energy.

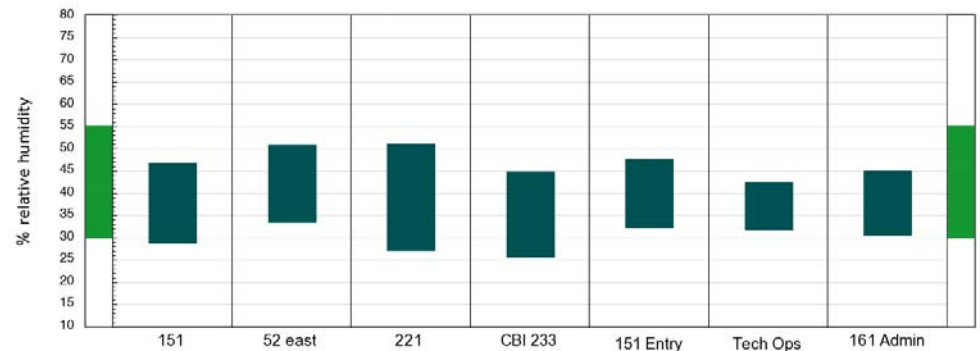
- 3 space(s) were too warm at times
- 7 space(s) were too cool at times
- 6 space(s) had excessive temperature variation



Relative Humidity Findings



- 2 space(s) had high relative humidity at times
- 1 space(s) had low relative humidity at times

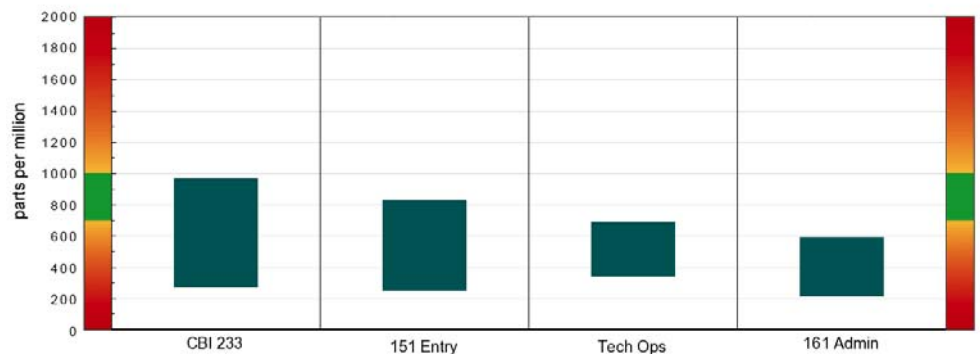


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 4 space(s) had low carbon dioxide levels





The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating setpoint and raising the cooling setpoint can save significant energy while maintaining a comfortable and productive working environment.

Alert Lvl	
	Occupied/Unoccupied Heating Setpoint is 65 / 65
	Occupied/Unoccupied Cooling Setpoint is 75 / 75

Our findings indicate there are several ways to save money by operating your building differently:

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%To Set	SV†
151		70	75	74	8%	5
52 east		67	71	69	6%	5
221		71	74	72	4%	5
CBI 233		74	77	76	79%	3
151 Entry		70	74	73	5%	5
Tech Ops		73	74	73	0%	7
161 Admin		72	75	73	0%	6

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- Excessive sources of humidity

Recommended Actions

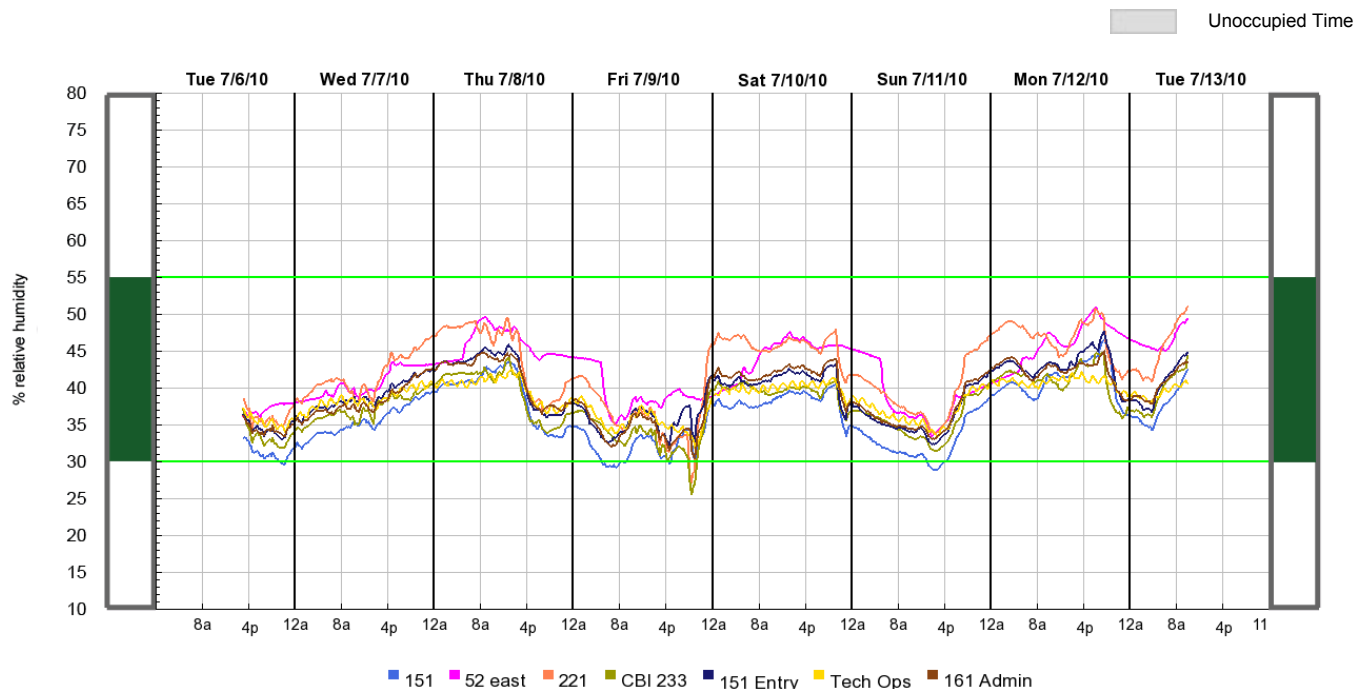
- Eliminate sources of humidity or install direct exhaust equipment in affected area

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	% Time out of Range
151		29	47	36	5%
52 east		33	51	42	0%
221		27	51	42	5%
CBI 233		26	45	38	1%
151 Entry		32	48	39	5%
Tech Ops		32	42	38	0%
161 Admin		30	45	39	0%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

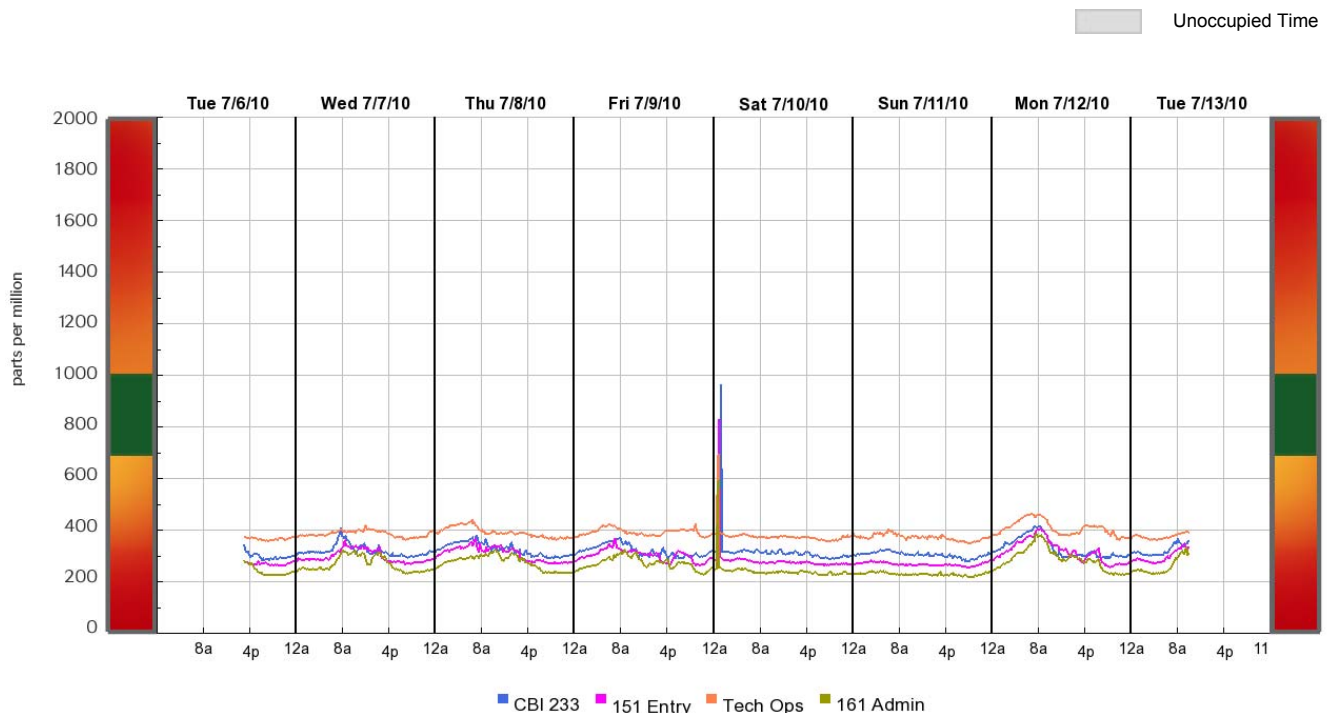
Comfort & Health Recommendations

- No recommendations at this time

Monitor	Alert Lvl	Min	Max	Avg	% Time out of Range
CBI 233		276	965	316	100%
151 Entry		254	830	292	100%
Tech Ops		346	689	384	100%
161 Admin		216	591	259	100%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 24 average occupied hours

Energy Savings Opportunities

Our findings indicate your building is not wasting energy on lights.

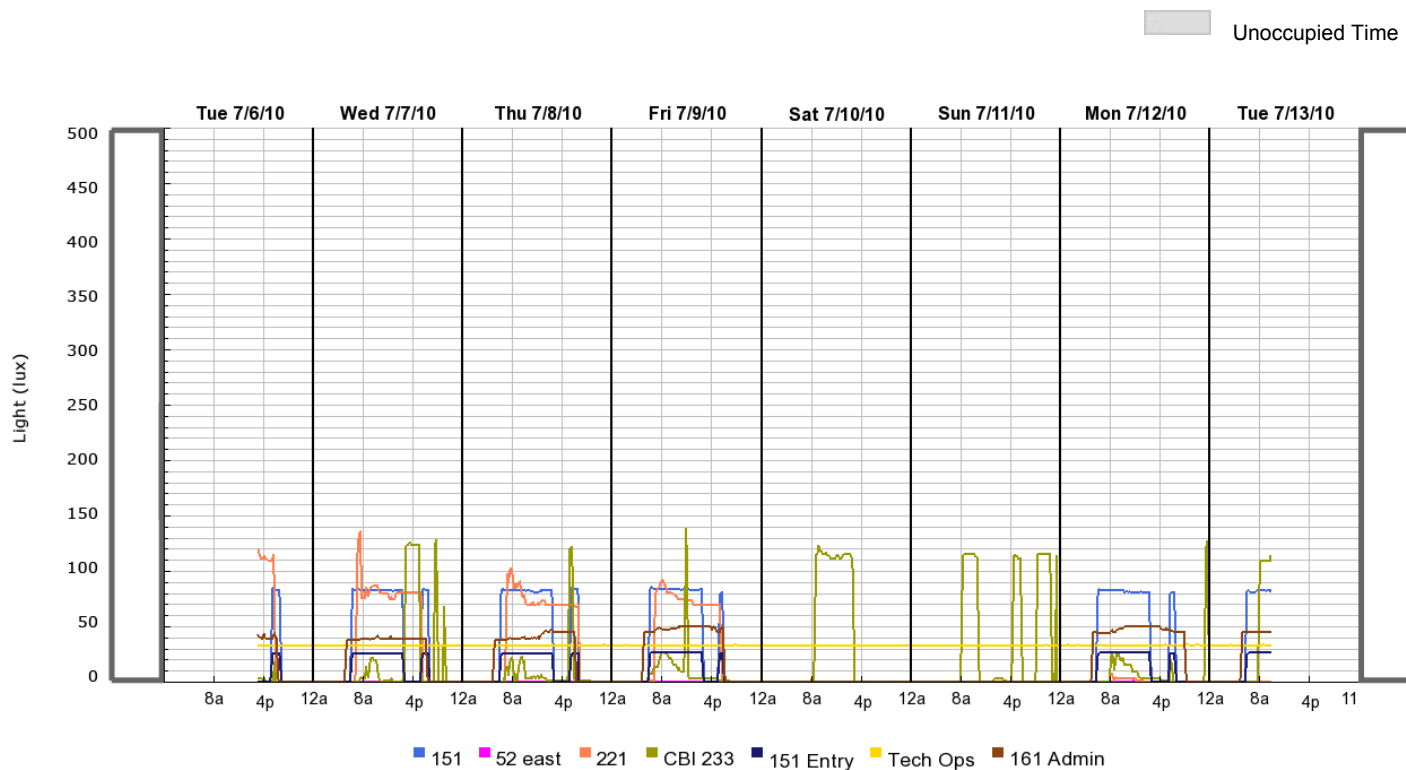
Energy Recommendations Based on Measurements

- No recommendations at this time.

Further Energy Recommendations

- No recommendations at this time.

Monitor	Alert Lvl	Measured On-Time
151		6.4 hrs
52 east		0 hrs
221		4.9 hrs
CBI 233		3.6 hrs
151 Entry		5.6 hrs
Tech Ops		16. hrs
161 Admin		7.7 hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99501

Outdoor Temperature

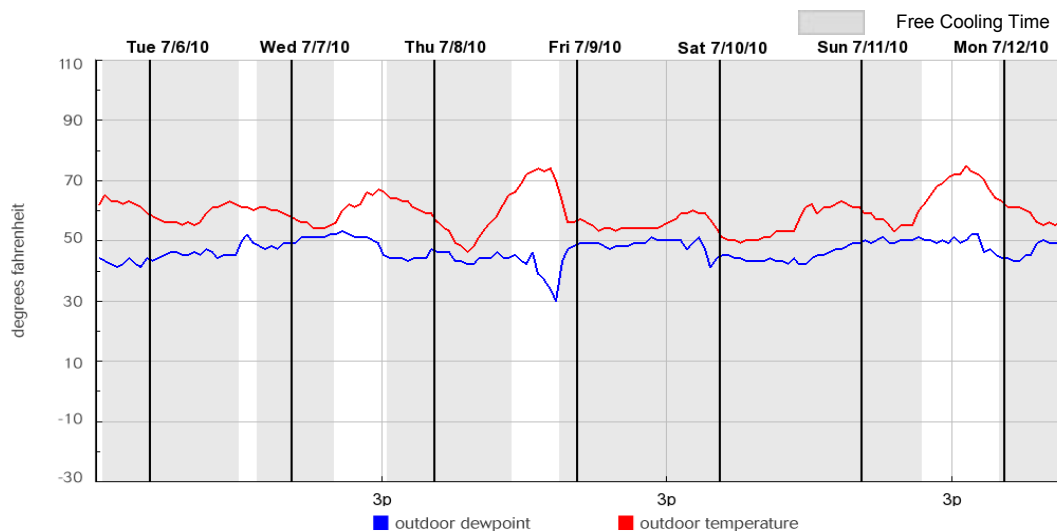
Test Period Avg: 7/6/10 – 7/13/10	Heating Degree Days	Cooling Degree Days
59 °F	6	0

Outdoor Temperature and Dewpoint

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dewpoint during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	XXXXXX
Contact	XXXXXX
Address	, AK 99501
Building Information	
Building Background	Building Usage: Office Building Size (sq ft): 139700 # of Stories: 2 Building Status: Existing Construction type: Cement Block LEED Cert.: None Heating System: Domestic Hot Water: Gas or Other Fuel Economizer: Yes Cooling System:
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
151	20431
52 east	20420
221	20416
CBI 233	20295
151 Entry	20293
Tech Ops	20289
161 Admin	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	00:00	65	75	Yes
Tue				
Wed				
Thu	23:59	65	75	No
Fri				
Sat				
Sun				

Building Description

Office			
Gross Floor Area	139700	Weekly Operating Hours	65
Number of Workers on Main Shift	321	Number of PCs	307
Office Air-Conditioned	50% or more	Office Heated	50% or more

Building Controls Information

Current Controls	
Controls Type	Direct Digital
Schedule Type	Time Clock
Air Delivery Method	Variable Air Volume
Air-Flow Modulation	Variable Frequency Drive

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
8/5/09	533537	\$52,859		\$0
9/5/09	514055	\$51,927		\$0
10/5/09	575613	\$56,309		\$0
11/5/09	556172	\$53,482		\$0
12/5/09	549195	\$52,955		\$0
1/5/10	648169	\$54,597		\$0
2/5/10	556575	\$48,505		\$0
3/5/10	611606	\$52,165		\$0
4/5/10	631045	\$67,182		\$0
5/5/10	565855	\$59,529		\$0
6/5/10	558012	\$61,606		\$0
7/5/10	518181	\$52,128		\$0
TOTAL:	6818015	\$663,245		\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
8/5/09 6073		\$6,155
9/5/09 9121		\$9,213
10/5/09 1022	9	\$10,323
11/5/09 1465	2	\$14,760
12/5/09 1756	3	\$14,593
1/3/10 1479	0	\$12,299
2/5/10 1298	1	\$10,803
3/5/10 1284	2	\$10,788
4/5/10 8273		\$6,974
5/2/10 6338		\$5,359
6/5/10 6687		\$5,649
7/5/10 5443		\$4,715
TOTAL:	124992	\$111,631

Commercial Energy Savings Assessment



Watt Buster



ASSESSMENT SITE

1029

ASSESSMENT PERFORMED BY

Control Contractors – Anchorage

5660 B Street

Anchorage, Alaska 99518



smart building solutions

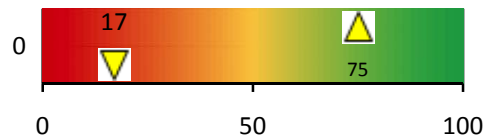


posi⊕iveENERGY

EXECUTIVE SUMMARY



Energy Use

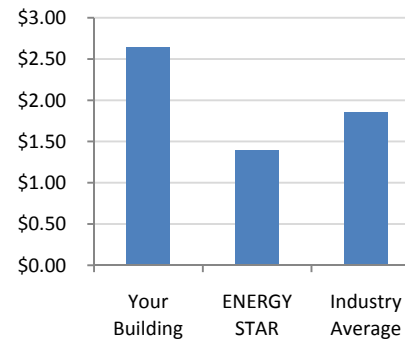


Your building's ENERGY STAR® Energy Performance Rating is 17. Its Energy Use Index is 131 kbtu per sq. ft.

Your building's ENERGY STAR score of 17 ranks you below average versus your peers, and falls well below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

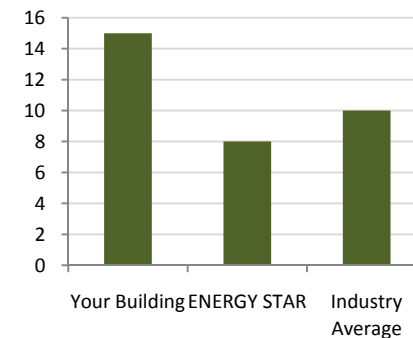


Your building's annual cost per square foot is \$2.65 per sq. ft. overall.

Your building's cost per square foot is \$0.80 more than the industry average. Your annual cost can be reduced by \$14,511 (30.2%) or \$72,555 over 5 years by achieving an ENERGY STAR score of 50.



Carbon Footprint



Your building's annual carbon footprint is 270 metric tons of CO2 or 15lbs per sq. ft.

Your building's carbon emissions are 43.6% more than the industry average, and can be reduced by 5lbs per sq. ft. by achieving an ENERGY STAR score of 50.

You could save up to **\$14,511** annually or **\$72,555** over 5 years by raising your ENERGY STAR score to the level of 50

While a detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR database.

How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

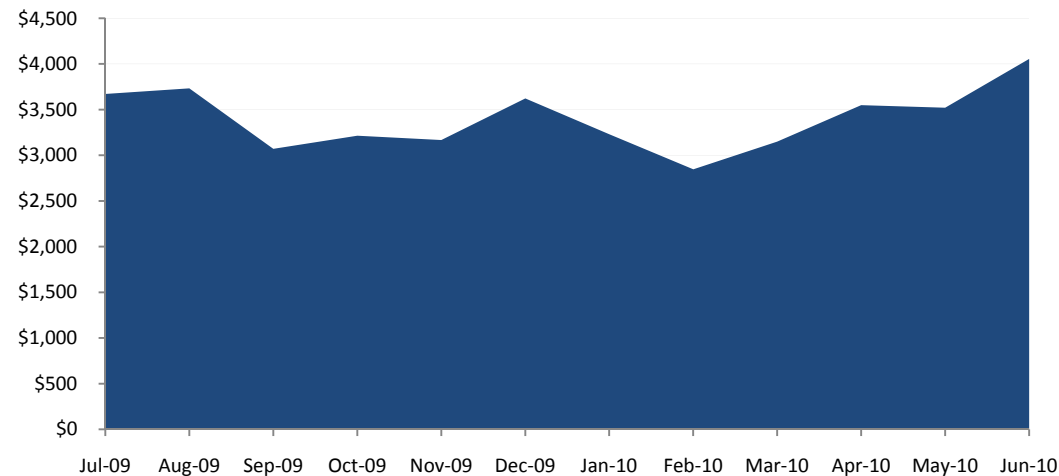


MONTHLY ELECTRICTY COST

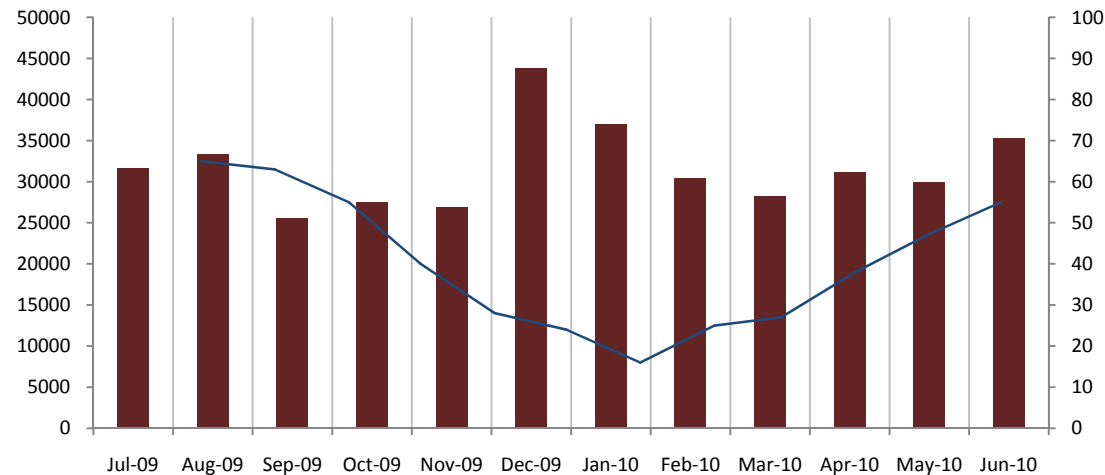
Utility Bill Analysis

Electricity Consumption

- Electricity comprises 81% of your total utility cost, and 55% of your total utility consumption.
- Your Total Spend on electricity is \$38,799, so when considering savings opportunities, remember you can only save some percentage of that total.



ELECTRICITY CONSUMPTION AND OUTSIDE AIRTEMPERATURE



How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

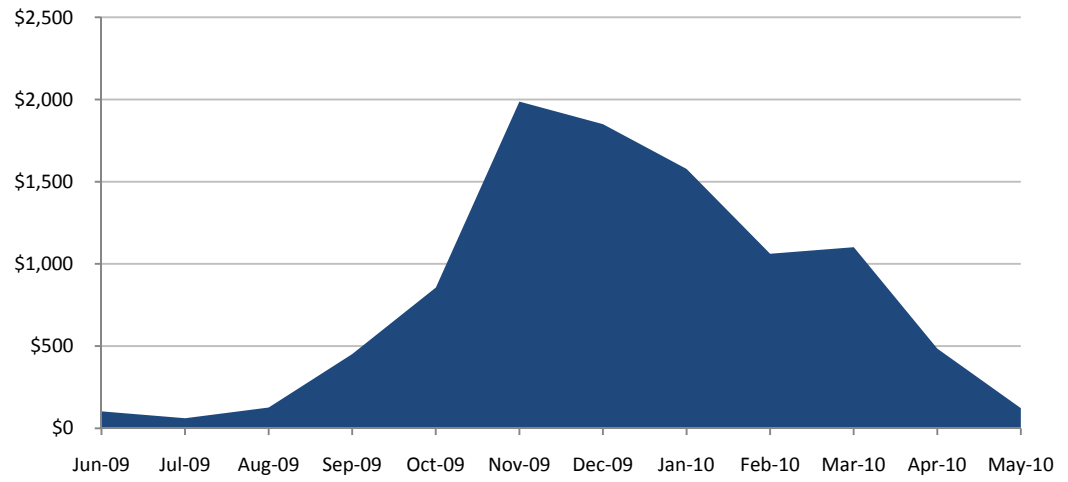
MONTHLY FUEL COST

Utility Bill Analysis

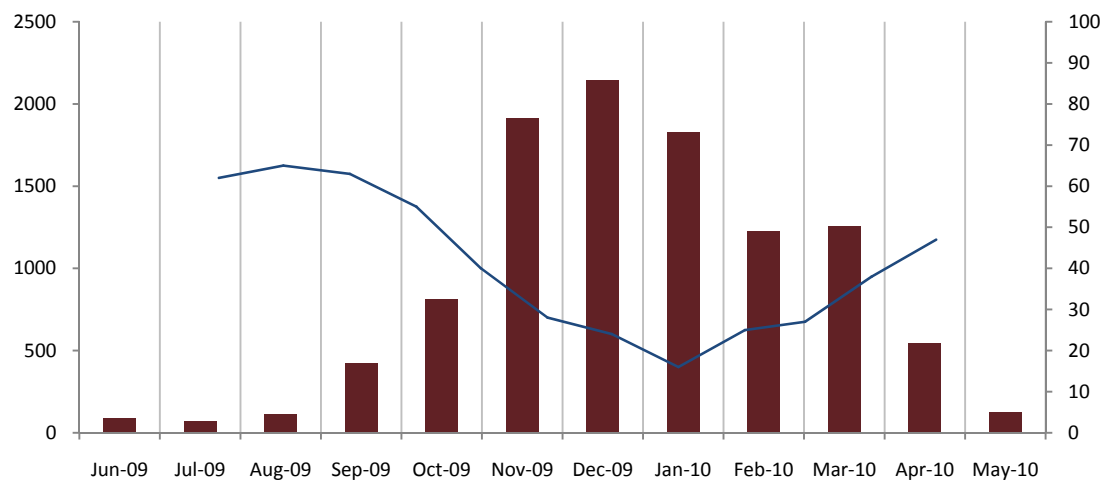
Fuel Consumption

- Fuel comprises 19% of your total utility cost, and 45% of your total utility consumption.

Your Total Spend on Fuel is \$9,792, so when considering savings opportunities, remember you can only save some percentage



FUEL CONSUMPTION AND OUTSIDE AIRTEMPERATURE

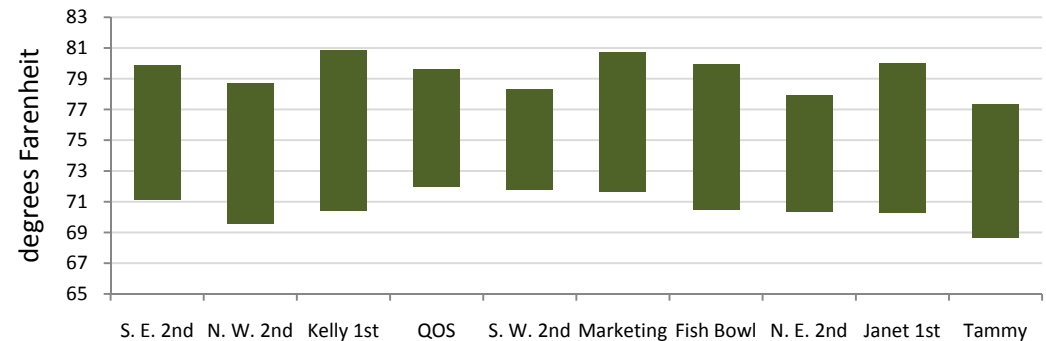


Building Comfort and Ventilation Analysis

This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

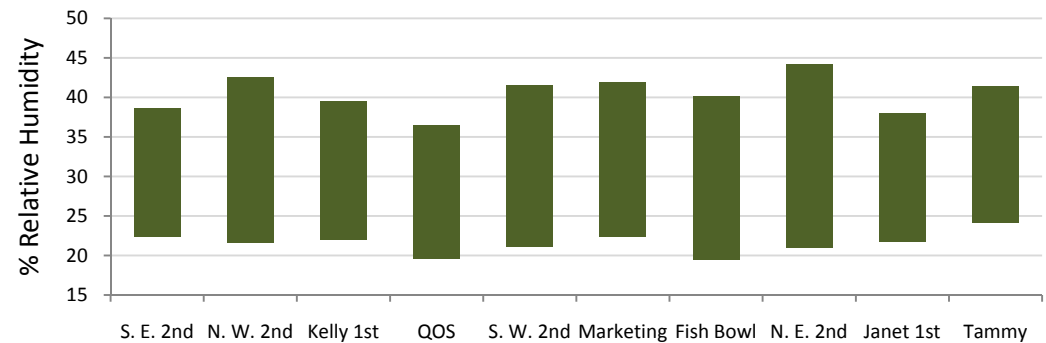
TEMPERATURE FINDINGS

- 6 space(s) were too warm at times
- 0space(s) were too cool at times
- 7 space(s) had excessive temperature variation



RELATIVE HUMIDITY

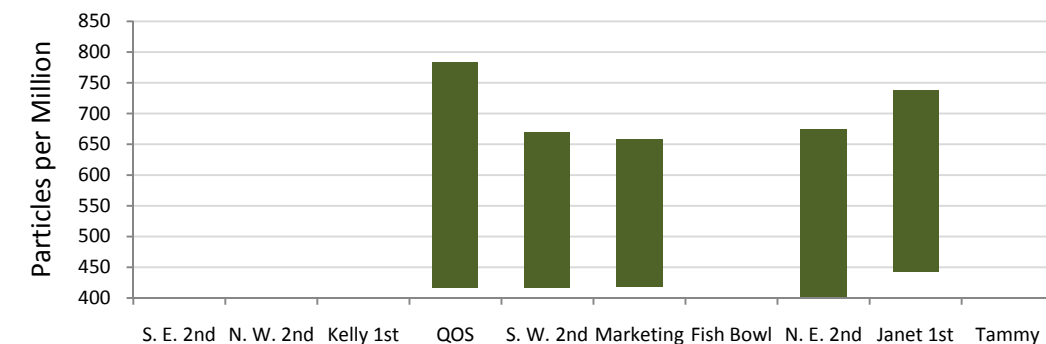
- 0space(s) had high relative humidity at times
- 10 space(s) had low relative humidity



CARBON DIOXIDE

Your building is over ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating setpoint and raising the cooling setpoint can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

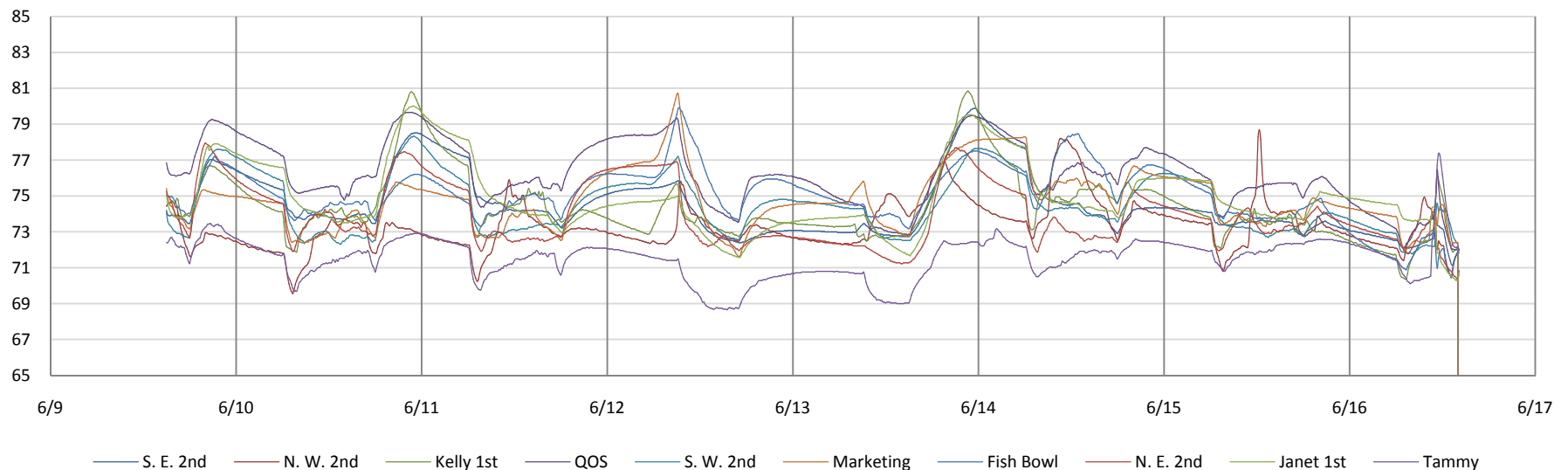
ENERGY SAVING OPPORTUNITIES

Our findings indicate there are several ways to save money by operating your building differently.

Energy Recommendations based on Measurements

- Calibrate thermostats to reduce temperature variation
- Verify the control system is shutting the heat and cooling equipment off
- Move thermostats to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

TIME – TEMPERATURE



Relative-Humidity

Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

ANALYSIS AND RECOMMENDATIONS

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

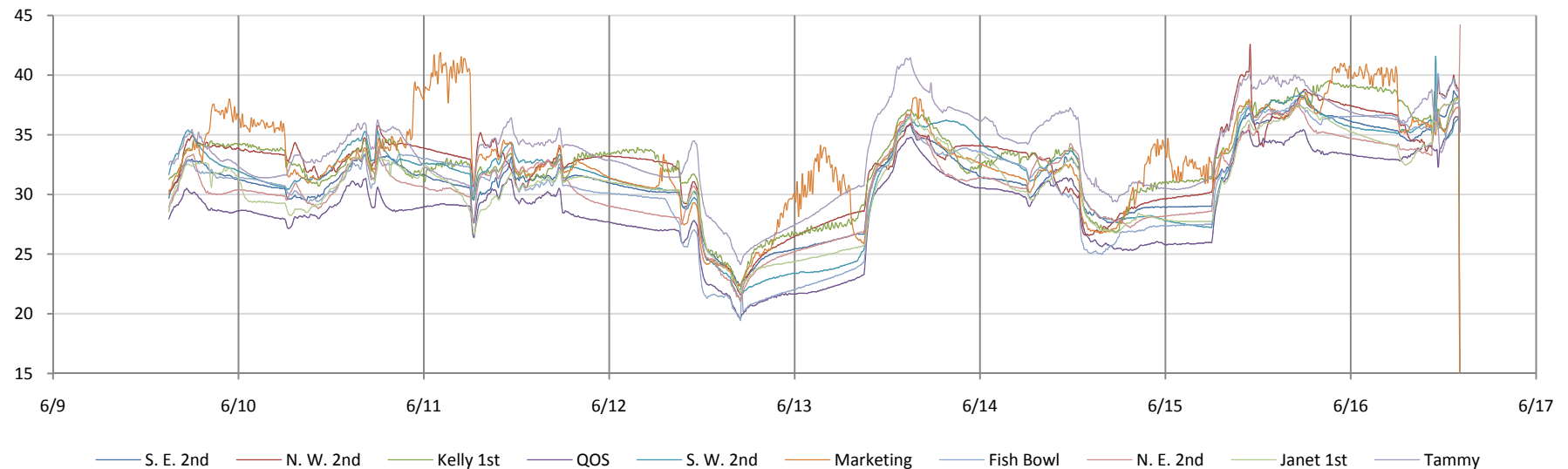
Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

- Add humidification system
- Improve ventilation control

TIME-RELATIVE HUMIDITY



Carbon Dioxide

Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

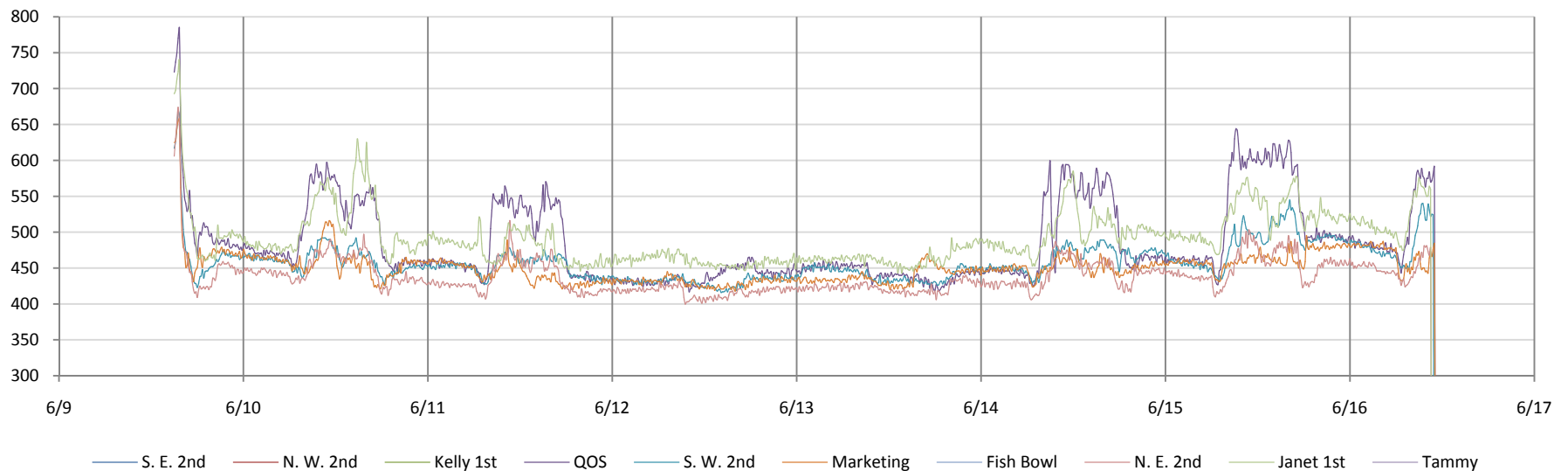
Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building different:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

TIME-CARBON DIOXIDE



Lighting

Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

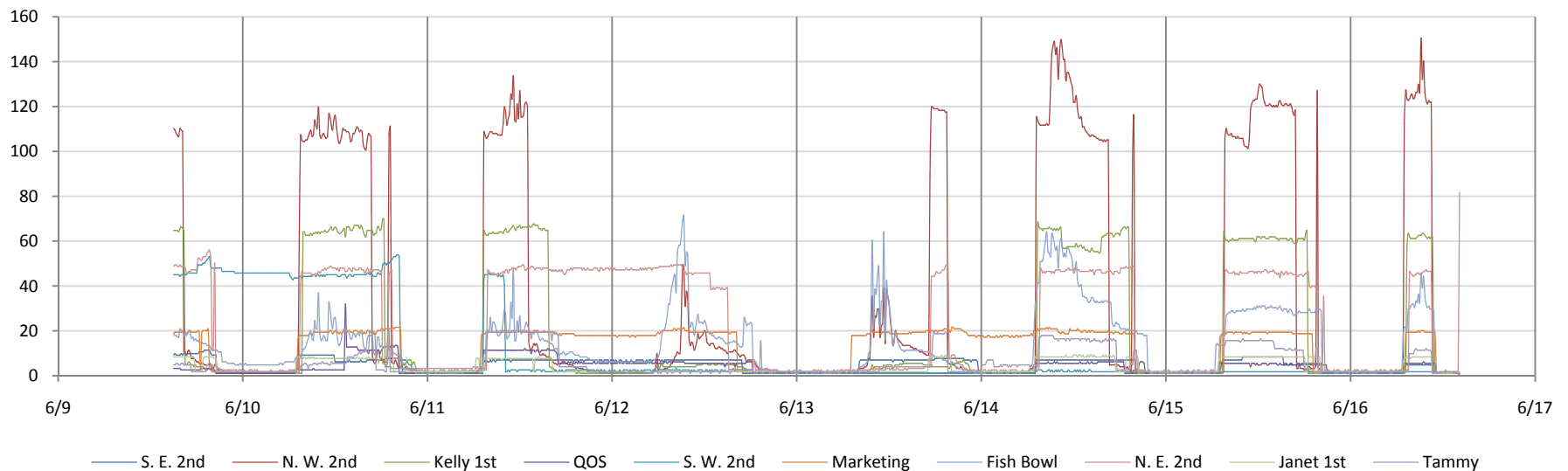
Sources: BOMA, ENERGY STAR, DOE

Energy Saving Opportunities

Energy Recommendations Based on Measurements

- Verify proper lighting levels in each area of the building

TIME LIGHTING





STATEMENT OF ENERGY PERFORMANCE 1029

Building ID: 2403332

For 12-month Period Ending: June 30, 2010¹

Date SEP becomes ineligible: N/A

Date SEP Generated: October 05, 2010

Facility

1029
1029
Anchorage, AK 99503

Facility Owner

N/A

Primary Contact for this Facility

N/A

Year Built: 1980**Gross Floor Area (ft²):** 17,712**Energy Performance Rating² (1-100)** 11**Site Energy Use Summary³**

Electricity - Grid Purchase(kBtu)	1,296,529
Natural Gas (kBtu) ⁴	1,072,843
Total Energy (kBtu)	2,369,372

Energy Intensity⁵

Site (kBtu/ft ² /yr)	134
Source (kBtu/ft ² /yr)	308

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	270
---	-----

Electric Distribution Utility

Chugach Electric Assn Inc

National Average Comparison

National Average Site EUI	86
National Average Source EUI	198
% Difference from National Average Source EUI	56%
Building Type	Office

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) or a Registered Architect (RA) 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 or RA 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	1029	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	Office	Is this an accurate description of the space in question?		☐
Location	1029, Anchorage, AK 99503	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		☐
Office (Office)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	17,712 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.		☐
Weekly operating hours	45 Hours	Is this the total number of hours per week that the Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		☐
Workers on Main Shift	20	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100. The normal worker density ranges between 0.3 and 5.3 workers per 1000 square feet (92.8 square meters)		☐
Number of PCs	25	Is this the number of personal computers in the Office?		☐
Percent Cooled	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐
Parking (Parking)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	23,000 Sq. Ft.	Is this the total square footage of the entire parking area (enclosed + nonenclosed + open floor area)?		☐

Enclosed Floor Area	0 Sq. Ft.	Is this the total square footage of the enclosed garage space? An enclosed garage is defined as having both sides and a roof.	☐
Non-Enclosed Floor Area (w/roof)	3,000 Sq. Ft.	Is this the total square footage of the nonenclosed garage space? This is typically defined as the portion of the garage above ground (contains no sides but is under a roof).	☐
Open Floor Area (w/o roof)	20,000 Sq. Ft.	Is this the total square footage of the nonenclosed parking area without a roof? This is typically defined as open parking lots or the very top level of an above ground parking garage.	☐
Weekly Hours of Access	168 Hours	Is this the total number of hours per week when it is possible for a vehicle to enter or exit?	☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Chugach Electric Assn Inc

Fuel Type: Electricity		
Meter: 3230 C Elec (kWh (thousand Watt-hours)) Space(s): Entire Facility Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
05/20/2010	06/18/2010	30,000.00
04/20/2010	05/20/2010	31,120.00
03/19/2010	04/20/2010	28,240.00
02/20/2010	03/19/2010	30,400.00
01/20/2010	02/20/2010	37,040.00
12/18/2009	01/20/2010	43,840.00
11/20/2009	12/18/2009	26,880.00
10/20/2009	11/20/2009	27,520.00
09/21/2009	10/20/2009	25,600.00
08/20/2009	09/21/2009	33,360.00
07/21/2009	08/20/2009	31,680.00
3230 C Elec Consumption (kWh (thousand Watt-hours))		345,680.00
3230 C Elec Consumption (kBtu (thousand Btu))		1,179,460.16
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		1,179,460.16
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☐
Fuel Type: Natural Gas		
Meter: 3230 C Gas (ccf (hundred cubic feet)) Space(s): Entire Facility		
Start Date	End Date	Energy Use (ccf (hundred cubic feet))
05/07/2010	06/07/2010	127.42
04/09/2010	05/07/2010	544.57
03/09/2010	04/09/2010	1,256.80
02/09/2010	03/09/2010	1,224.61
01/11/2010	02/09/2010	1,826.85
12/07/2009	01/11/2010	2,144.74
11/06/2009	12/07/2009	1,912.69
10/08/2009	11/06/2009	811.49
09/09/2009	10/08/2009	425.19
08/10/2009	09/09/2009	111.33
07/09/2009	08/10/2009	67.07

3230 C Gas Consumption (ccf (hundred cubic feet))	10,452.76
3230 C Gas Consumption (kBtu (thousand Btu))	1,075,589.00
Total Natural Gas Consumption (kBtu (thousand Btu))	1,075,589.00
Is this the total Natural Gas consumption at this building including all Natural Gas 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.	☐

On-Site Solar and Wind Energy	
Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.	☐

Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA 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

1029
1029
Anchorage, AK 99503

Facility Owner

N/A

Primary Contact for this Facility

N/A

General Information

1029	
Gross Floor Area Excluding Parking: (ft ²)	17,712
Year Built	1980
For 12-month Evaluation Period Ending Date:	June 30, 2010

Facility Space Use Summary

Office		Parking	
Space Type	Office	Space Type	Parking
Gross Floor Area(ft ²)	17,712	Gross Floor Area(ft ²)	23,000
Weekly operating hours	45	Enclosed Floor Area	0
Workers on Main Shift	20	Non-Enclosed Floor Area (w/roof)	3,000
Number of PCs	25	Open Floor Area (w/o roof)	20,000
Percent Cooled	50% or more	Weekly Hours of Access	168
Percent Heated	50% or more		

Energy Performance Comparison

Performance Metrics	Evaluation Periods		Comparisons		
	Current (Ending Date 06/30/2010)	Baseline (Ending Date 06/30/2010)	Rating of 75	Target	National Average
Energy Performance Rating	11	11	75	50	50
Energy Intensity					
Site (kBtu/ft ²)	134	134	65	86	86
Source (kBtu/ft ²)	308	308	150	197	198
Energy Cost					
\$/year	\$ 48,064.72	\$ 48,064.72	\$ 23,466.45	\$ 30,828.68	\$ 30,828.68
\$/ft ² /year	\$ 2.71	\$ 2.71	\$ 1.32	\$ 1.74	\$ 1.74
Greenhouse Gas Emissions					
MtCO ₂ e/year	270	270	132	173	173
kgCO ₂ e/ft ² /year	15	15	7	10	10

More than 50% of your building is defined as Office. 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.

Statement of Energy Performance

2010

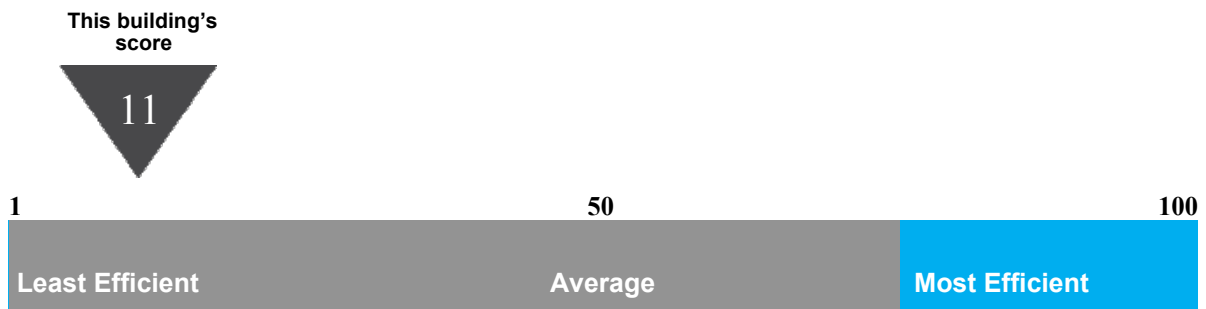
1029

1029

Anchorage, AK 99503

Portfolio Manager Building ID: 2403332

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit energystar.gov/benchmark.



This building uses 308 kBtu per square foot per year.*

*Based on source energy intensity for the 12 month period ending June 2010

Buildings with a score of 75 or higher may qualify for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at energystar.gov

Date of certification



Date Generated: 10/05/2010

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1030

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

CHUGACH
POWERING ALASKA'S FUTURE

CONTROL
CONTRACTORS

smart building solutions



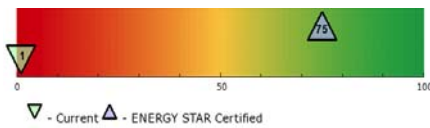
positiveENERGY

Executive Summary

Your Building's Energy Performance Benchmarks



Energy Use

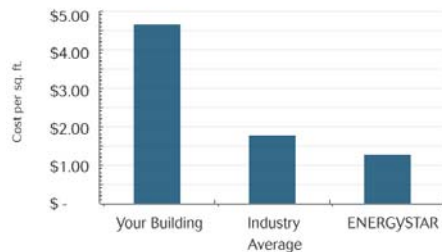


Your building's ENERGY STAR® Energy Performance Rating is **1**. Its Energy Use Index is **330 kbtu per sq. ft.**

Your building's ENERGY STAR score of 1 ranks you below average versus your peers, and falls well below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

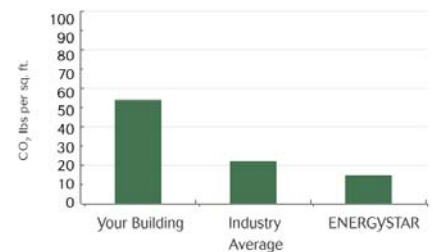


Your building's annual cost per square foot is **\$4.65 per sq. ft.** overall.

Your building's cost per square foot is \$2.88 more than the industry average. Your annual cost can be reduced by \$65,897 or 62.0% by achieving an ENERGY STAR score of 50.



Carbon Footprint



Your building's annual carbon footprint is **558 metric tons of CO₂** or **53.76 lbs per sq. ft.**

Your building's carbon emissions are 146.4% more than the industry average, and can be reduced by 32 lbs per sq. ft. by achieving an ENERGY STAR score of 50.

You could save up to **\$65,897** annually or **\$329,485** over 5 years by raising your ENERGY STAR score to the level of 50.

While a more detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR® database.

Key Findings

- Your building has some control issues in specific sections
- Your building is over-ventilated



How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

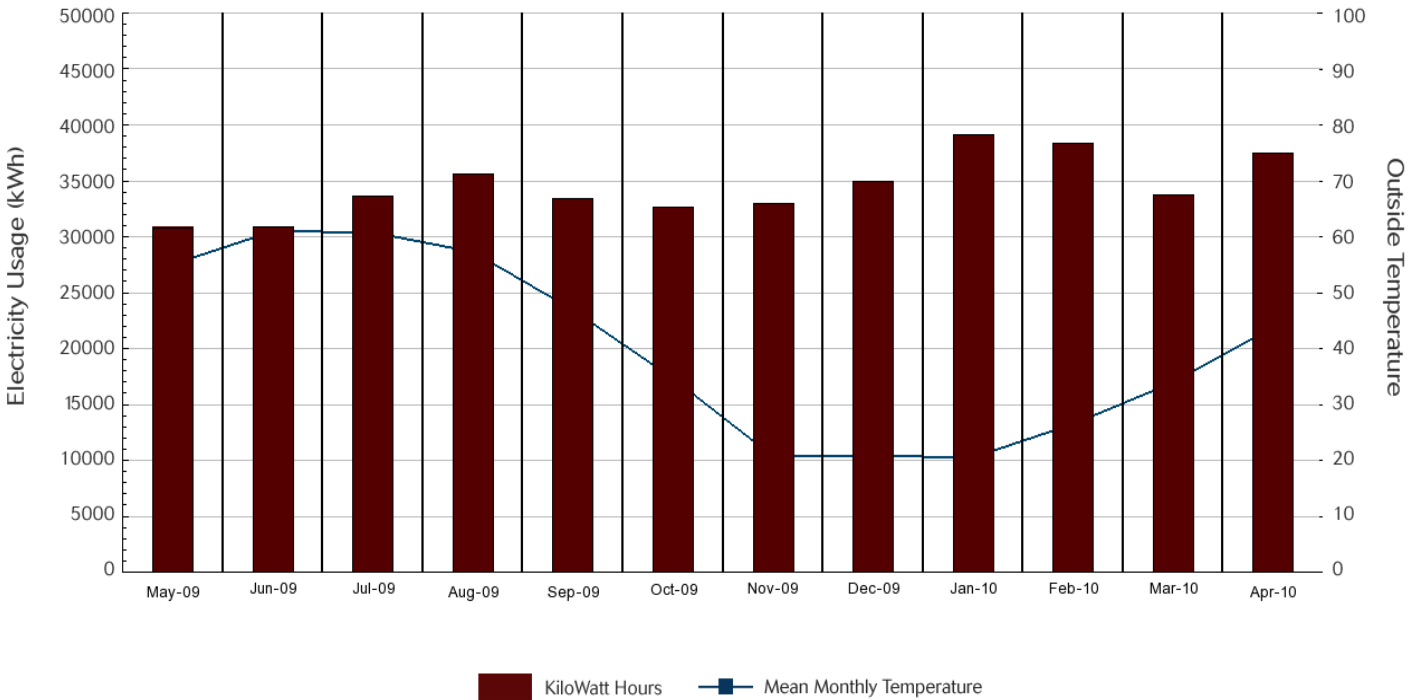
Electricity Consumption

- Electricity comprises 44.1% of your total utility cost, and 18.7% of your total utility consumption.
- Your Total Spend on electricity is \$46,880, so when considering savings opportunities, remember you can only save some percentage of that total.

Monthly Electricity Costs



Electricity Consumption And Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

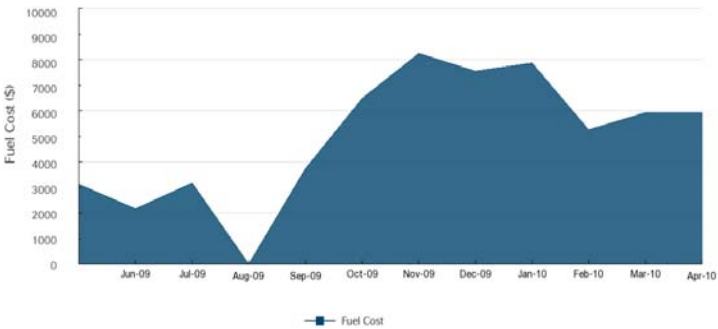


Monthly Fuel Costs

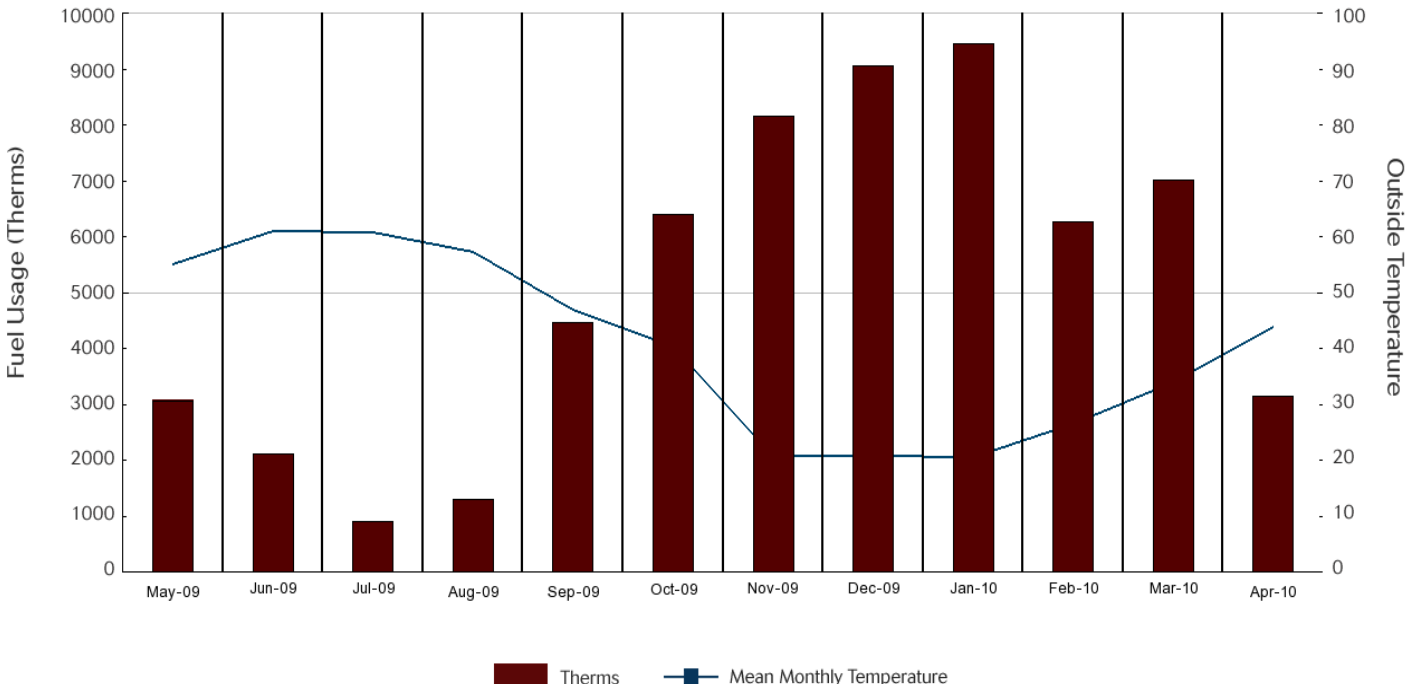
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 55.9% of your total utility cost, and 81.3% of your total utility consumption.
- Your Total Spend on Fuel is \$59,433, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption and Outside Air Temperature



Building Comfort and Ventilation Analysis

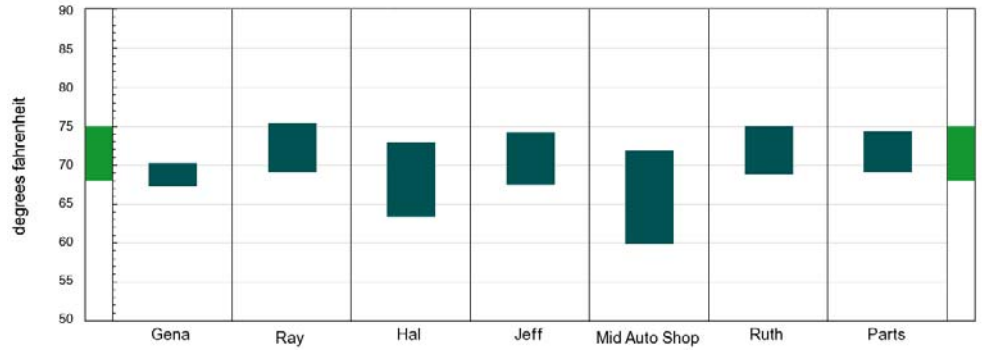
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building has some control issues in specific sections.

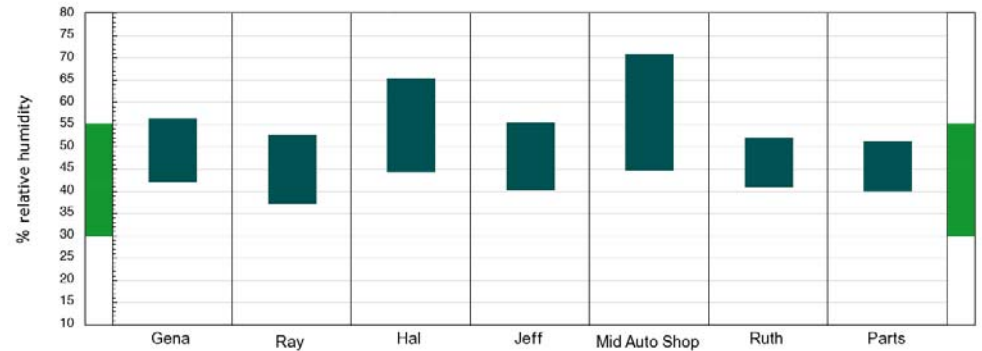
- 1 space(s) were too warm at times
- 3 space(s) were too cool at times
- 4 space(s) had excessive temperature variation



Relative Humidity Findings



- 2 space(s) had high relative humidity at times
- 0 space(s) had low relative humidity at times

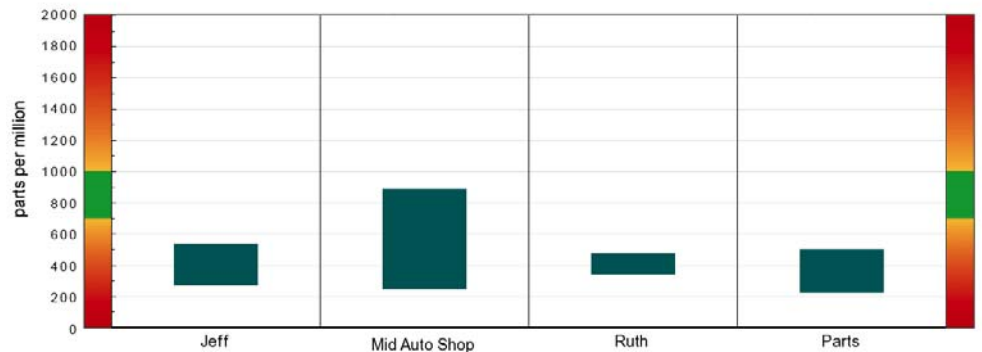


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 0 space(s) had elevated carbon dioxide levels
- 4 space(s) had low carbon dioxide levels



The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating set point and raising the cooling set point can save significant energy while maintaining a comfortable and productive working environment.



Monitor Statistics

Energy Savings Opportunities

Energy Recommendations Based on Measurements

- These statistics are for occupied times only.

Analysis and Recommendations

Monitor Statistics

Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

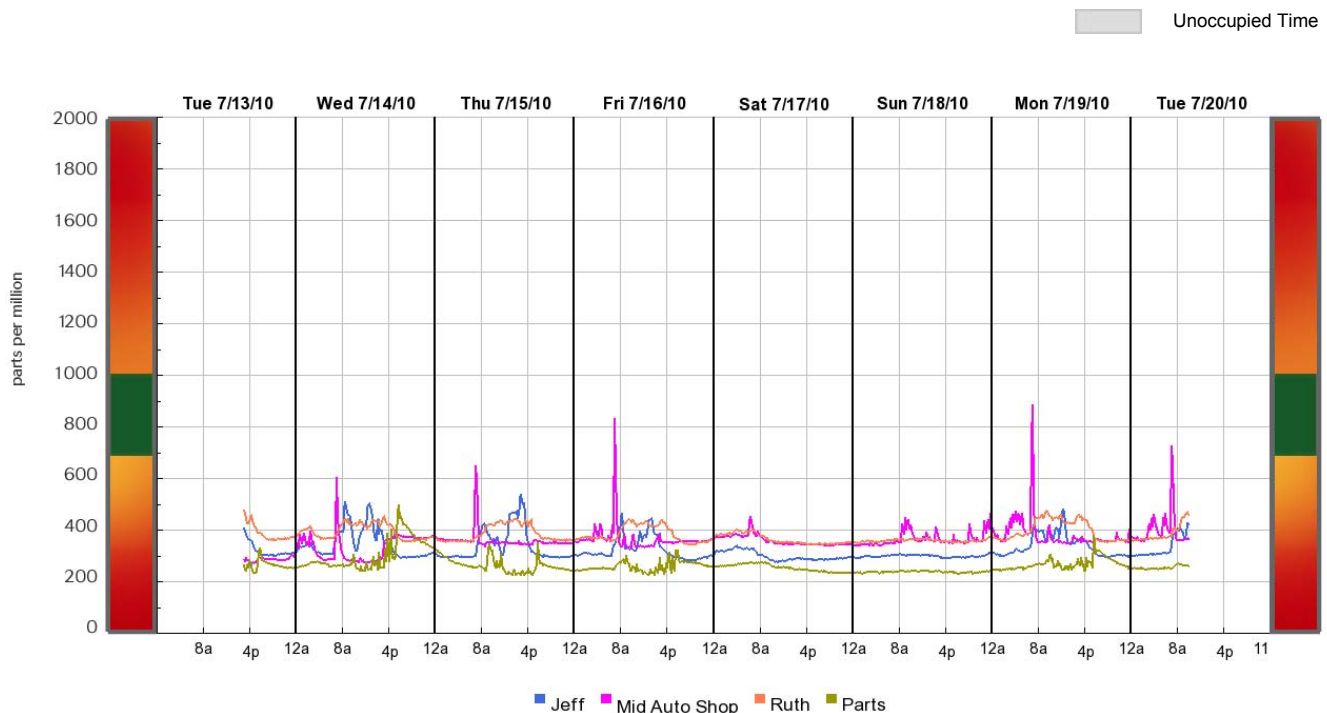
Comfort & Health Recommendations

- No recommendations at this time

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
Jeff		274	538	323	100%
Mid Auto Shop		250	887	357	100%
Ruth		342	476	381	100%
Parts		224	500	261	100%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 24 average occupied hours

Energy Savings Opportunities

Our findings indicate your building is not wasting energy on lights.

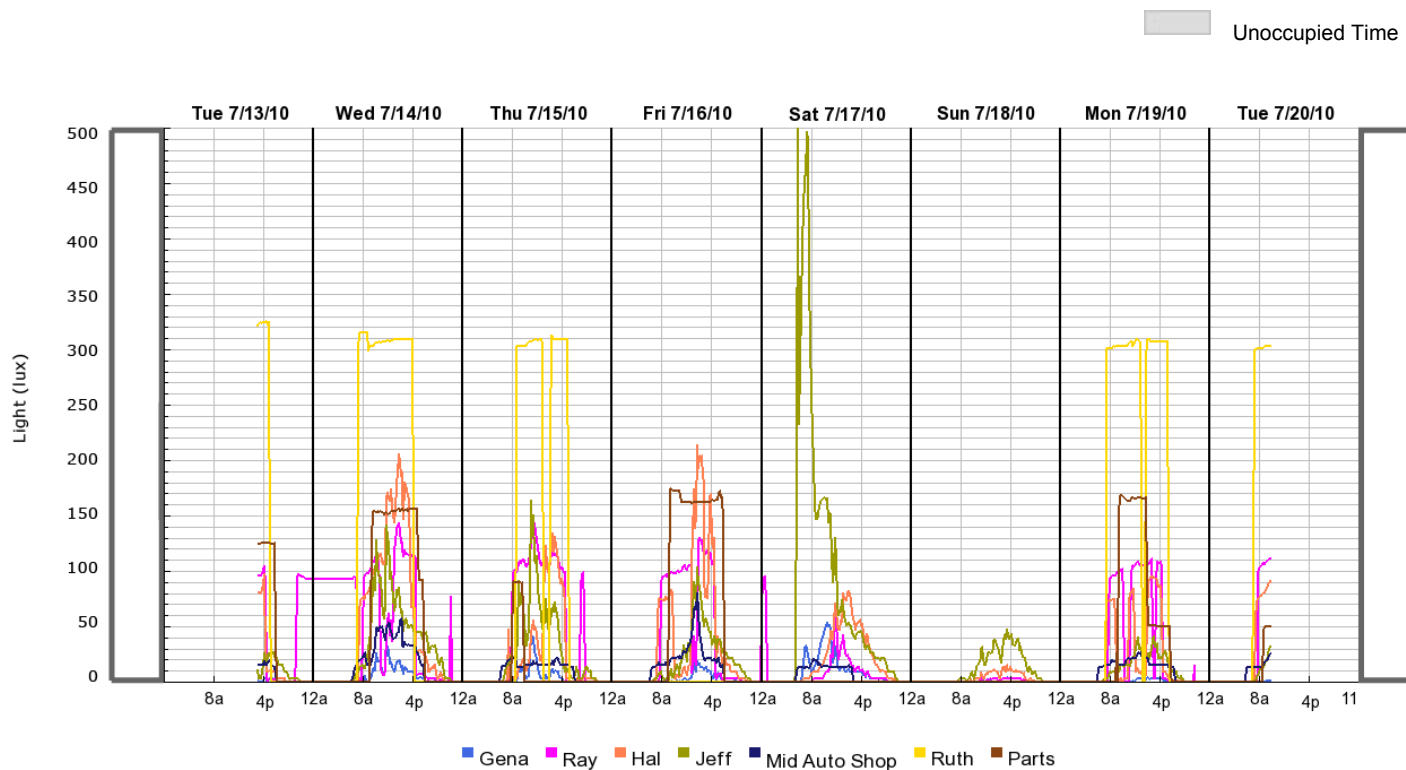
Energy Recommendations Based on Measurements

- No recommendations at this time.

Further Energy Recommendations

- No recommendations at this time.

Monitor	Alert Lvl	Measured On-Time
Gena		0.7 hrs
Ray		6.4 hrs
Hal		4.6 hrs
Jeff		0.9 hrs
Mid Auto Shop		5.5 hrs
Ruth		4.1 hrs
Parts		3.9 hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at: Anchorage, AK 99518

Outdoor Temperature

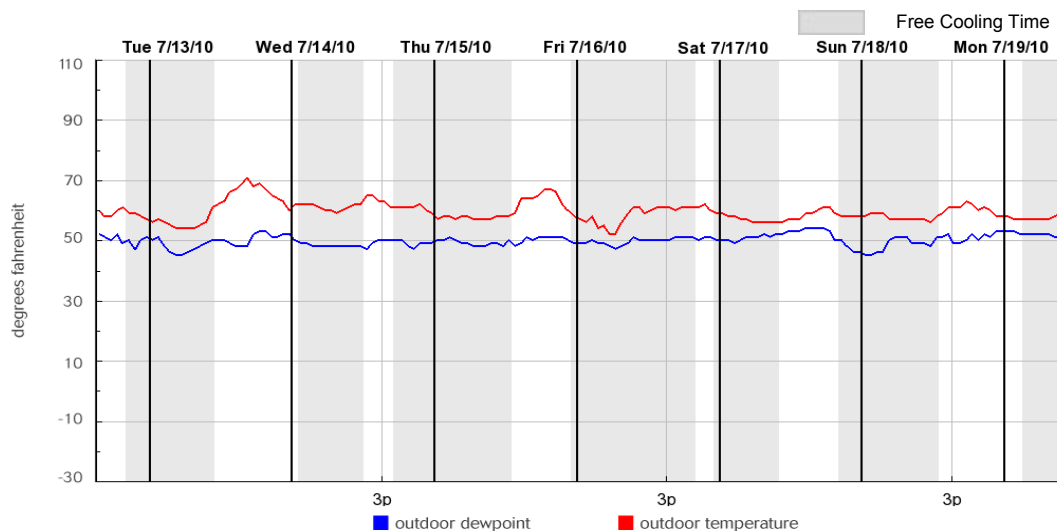
Test Period Avg: 7/13/10 – 7/20/10	Heating Degree Days	Cooling Degree Days
60 °F	5	0

Outdoor Temperature and Dew Point

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dew point during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	XXXX
Contact	XXX
Address	Anchorage, AK 99518
Building Information	
Building Background	Building Usage: Office Building Size (sq ft): 22876 # of Stories: 2 Building Status: Existing Construction type: Cement Block LEED Cert.: None Heating System: Boiler Domestic Hot Water: Gas or Other Fuel Economizer: Yes Cooling System: DX / Packaged Unit
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
Gina	20431
Ray	20420
Hal	20416
Jeff	20295
Mid Auto Shop	20293
Ruth	20289
Parts	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	00:00	60	75	Yes
Tue				
Wed	23:59	60	75	No
Thu				
Fri				
Sat				
Sun				

Building Description

Office			
Gross Floor Area	10076	Weekly Operating Hours	98
Number of Workers on Main Shift	22	Number of PCs	22
Office Air-Conditioned	50% or more	Office Heated	50% or more

Warehouse (Unrefrigerated)			
Gross Floor Area	12800	Number of Workers on Main Shift	8
Weekly Operating Hours	98	% Air-Conditioned	0
% Heated	100	Walk-in Refrigeration/Freezer Units	0

Parking			
Enclosed Floor Area	0	Non-Enclosed Floor Area (w/roof)	0
Open Floor Area (w/o roof)	10000	Weekly Hours of Access	168

Building Controls Information

Current Controls	
Controls Type	Pneumatic DDC Hybrid
Schedule Type	Time Clock
Air Delivery Method	Variable Air Volume
Air-Flow Modulation	Variable Frequency Drive

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
5/15/09	30800	\$4,195		\$0
6/15/09	30880	\$4,322		\$0
7/15/09	33680	\$3,951		\$0
8/15/09	35600	\$4,153		\$0
9/15/09	33440	\$3,893		\$0
10/15/09	32640	\$3,733		\$0
11/15/09	32960	\$3,685		\$0
12/15/09	34960	\$3,940		\$0
1/15/10	39120	\$3,880		\$0
2/15/10	38400	\$3,826		\$0
3/15/10	33760	\$3,426		\$0
4/15/10	37520	\$3,876		\$0
TOTAL:	413760	\$46,880		\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
5/15/09 3056		\$3,127
6/15/09 2101		\$2,171
7/15/09 910		\$3,169
8/15/09 1295		\$0
9/15/09 4463		\$3,732
10/6/09 6404		\$6,487
11/15/09 8159		\$8,247
12/15/09 9045		\$7,546
1/15/10 9443		\$7,876
2/15/10 6269		\$5,250
3/15/10 7005		\$5,915
4/15/10 3142		\$5,913
TOTAL:	61292	\$59,433

Commercial Energy Savings Assessment



Watt Buster



ASSESSMENT SITE

1031

ASSESSMENT PERFORMED BY

Control Contractors – Anchorage

5660 B Street

Anchorage, Alaska 99518



smart building solutions

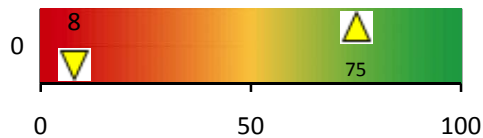


posi⊕iveENERGY

EXECUTIVE SUMMARY



Energy Use

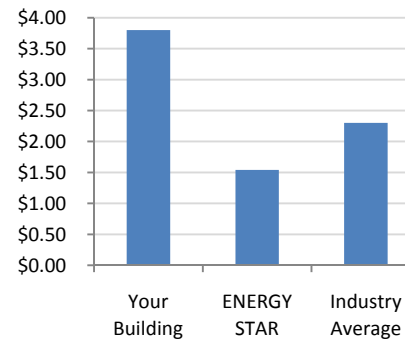


Your building's ENERGY STAR® Energy Performance Rating is 8. Its Energy Use Index is 218 kbtu per sq. ft.

Your building's ENERGY STAR score of 8 ranks you below average versus your peers, and falls well below the minimum rating of 75 that is required for ENERGY STAR certification.



Cost

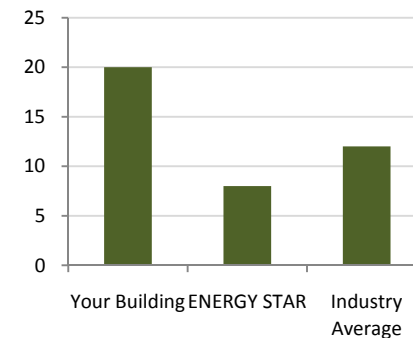


Your building's annual cost per square foot is \$3.8 per sq. ft. overall.

Your building's cost per square foot is \$1.5 more than the industry average. Your annual cost can be reduced by \$99,426 (39.6%) or \$497,130 over 5 years by achieving an ENERGY STAR score of 50.



Carbon Footprint



Your building's annual carbon footprint is 1319 metric tons of CO2 or 20lbs per sq. ft.

Your building's carbon emissions are 65.5% more than the industry average, and can be reduced by 8 lbs per sq. ft. by achieving an ENERGY STAR score of 50.

You could save up to **\$99,426** annually or **\$497,130** over 5 years by raising your ENERGY STAR score to the level of 50

While a detailed energy audit is required to quantify actual savings, the savings potential can be estimated by comparing the performance of your building to the ENERGY STAR database.

How Does Your Building Use Electricity Today?

This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

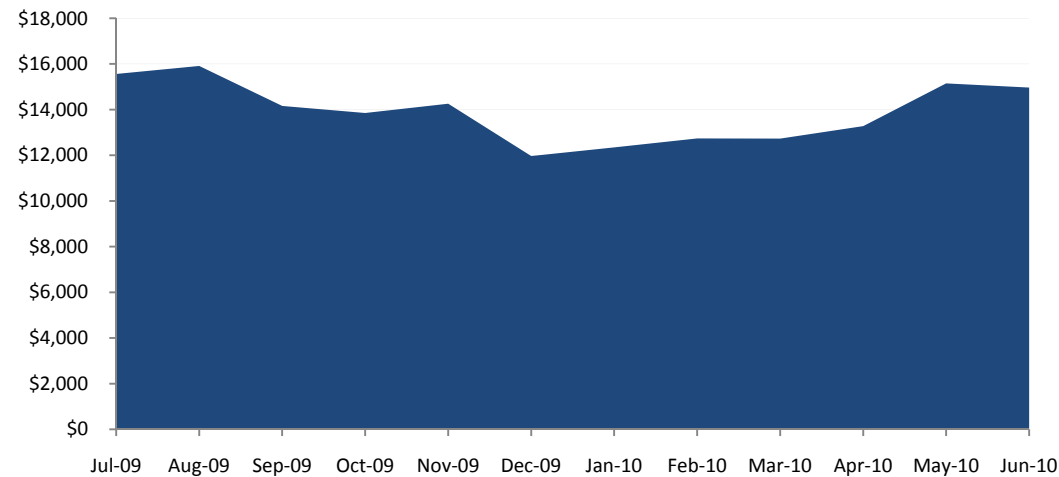


MONTHLY ELECTRICTY COST

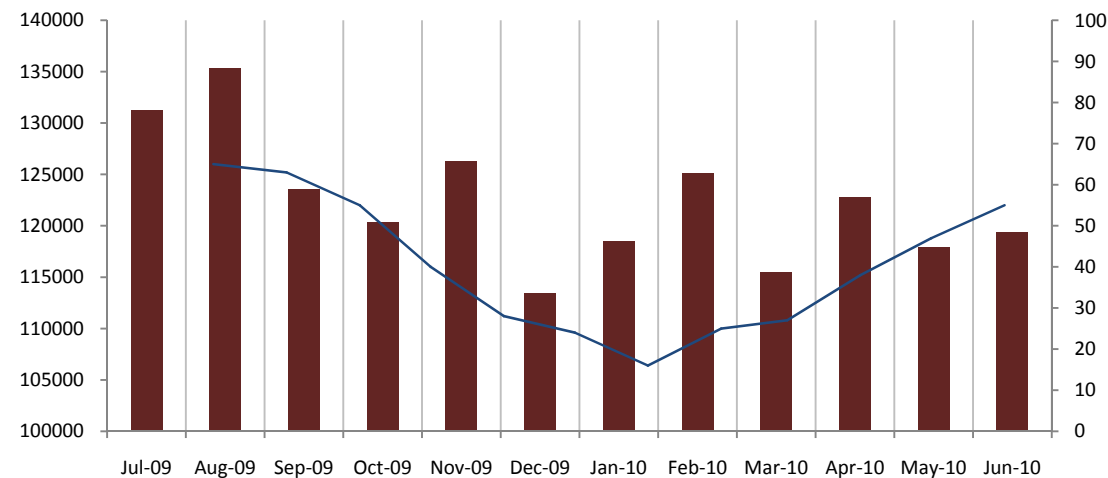
Utility Bill Analysis

Electricity Consumption

- Electricity comprises 66.0% of your total utility cost, and 35.0% of your total utility consumption.
- Your Total Spend on electricity is \$166,973, so when considering savings opportunities, remember you can only save some percentage of that total.



ELECTRICITY CONSUMPTION AND OUTSIDE AIRTEMPERATURE



How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

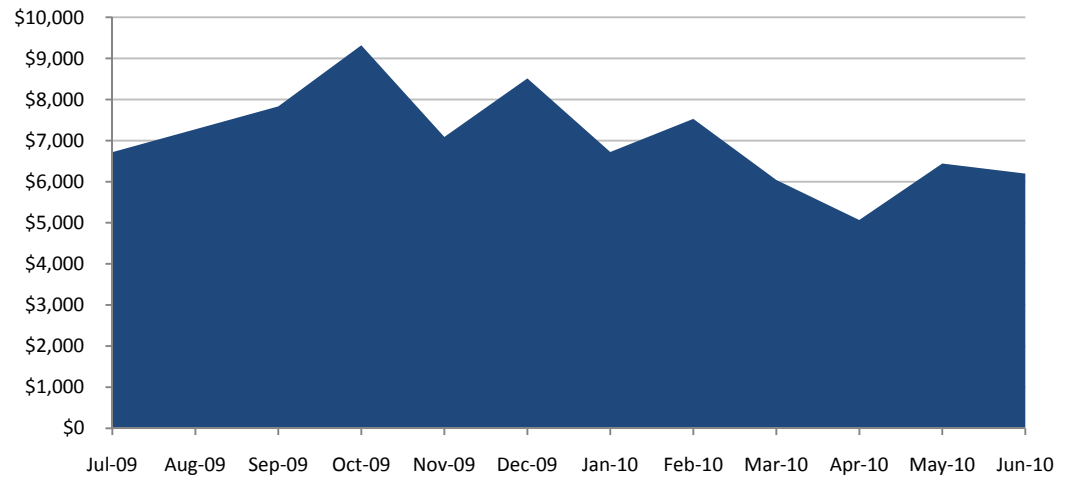
MONTHLY FUEL COST

Utility Bill Analysis

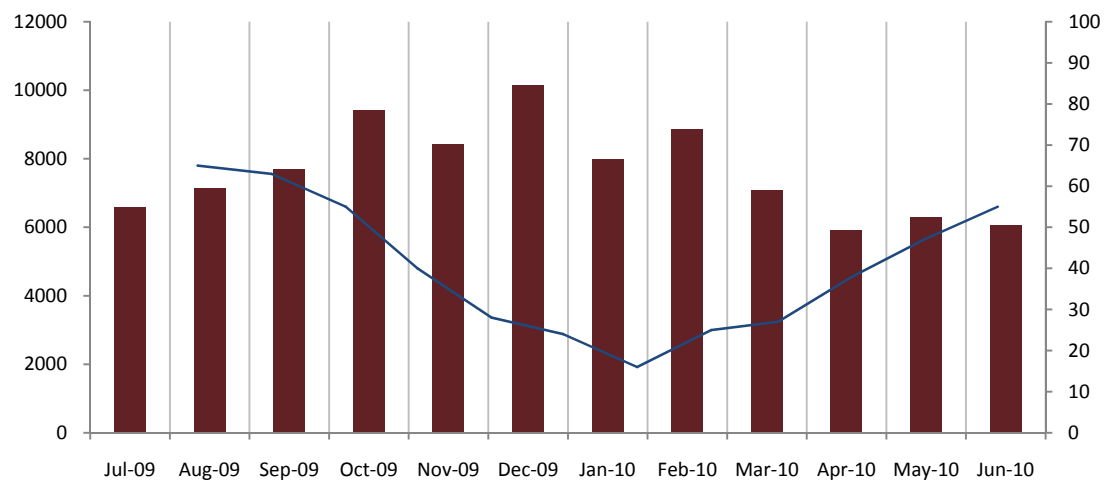
Fuel Consumption

- Fuel comprises 34.0% of your total utility cost, and 65.0% of your total utility consumption.

Your Total Spend on Fuel is \$84,777, so when considering savings opportunities, remember you can only save some percentage



FUEL CONSUMPTION AND OUTSIDE AIRTEMPERATURE

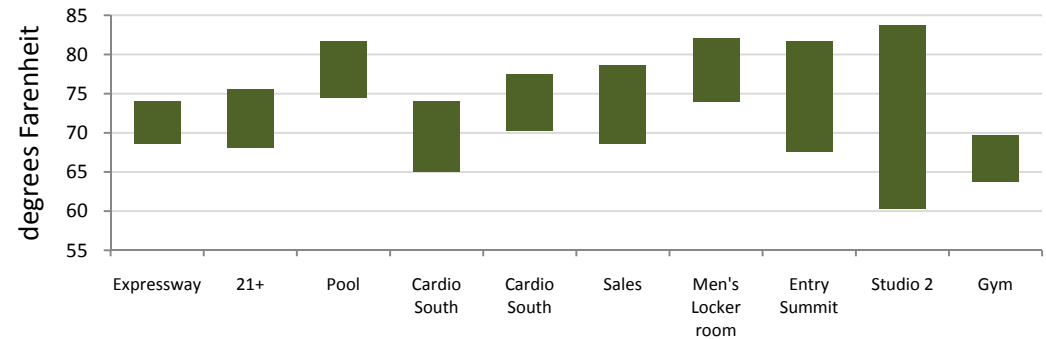


Building Comfort and Ventilation Analysis

This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

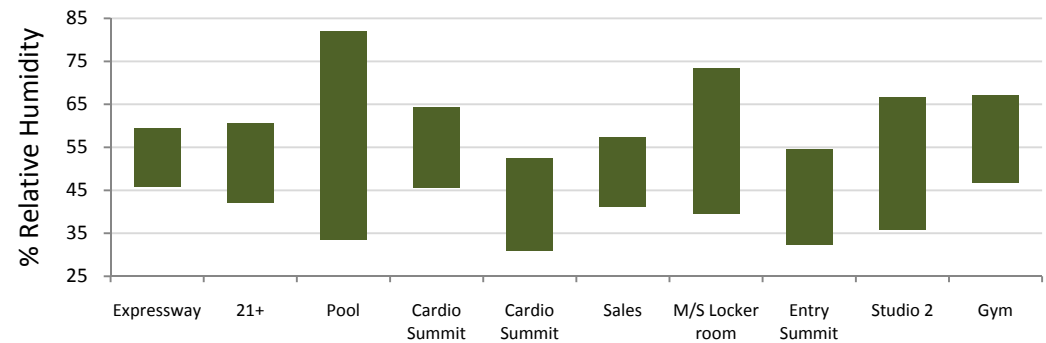
TEMPERATURE FINDINGS

- 3 space(s) were too warm at times
- 0 space(s) were too cool at times
- 4 space(s) had excessive temperature variation



RELATIVE HUMIDITY

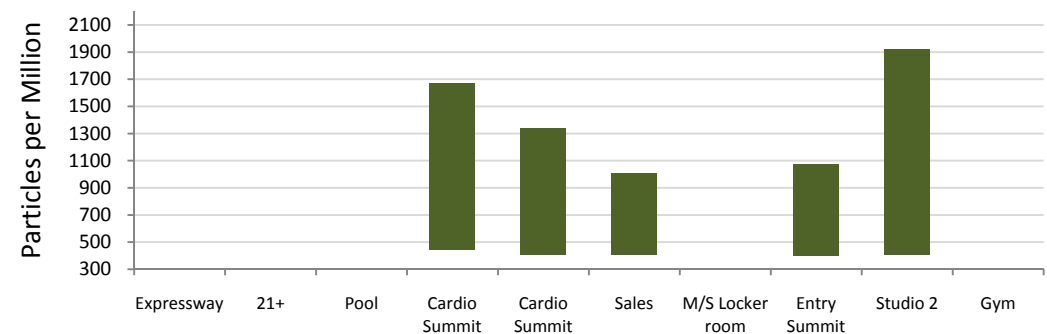
- 4 space(s) had high relative humidity at times
- 2 space(s) had low relative humidity



CARBON DIOXIDE

Your building is over ventilated and can save energy by reducing the overall amount of outside air ventilation

- 1 space(s) had elevated carbon dioxide levels
- 5 space(s) had low carbon dioxide levels



Temperature

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating setpoint and raising the cooling setpoint can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

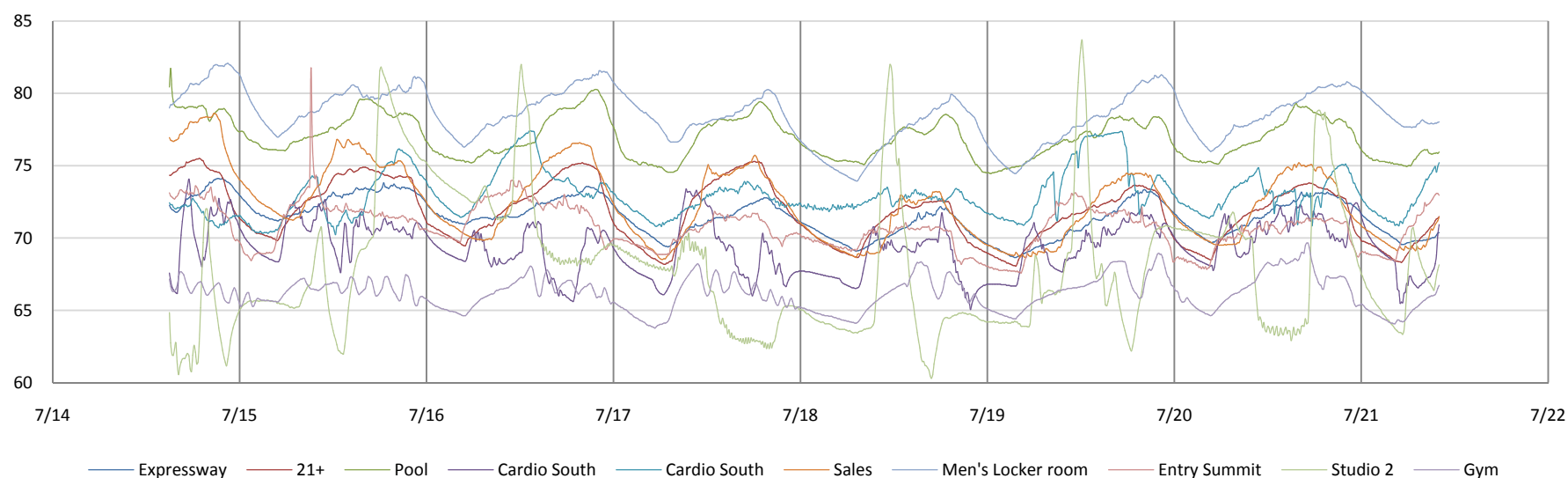
ENERGY SAVING OPPORTUNITIES

Our findings indicate there are several ways to save money by operating your building differently.

Energy Recommendations based on Measurements

- Calibrate thermostats to reduce temperature variation
- Verify the control system is shutting the heat and cooling equipment off
- Move thermostats to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

TIME – TEMPERATURE



Relative-Humidity

Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

ANALYSIS AND RECOMMENDATIONS

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

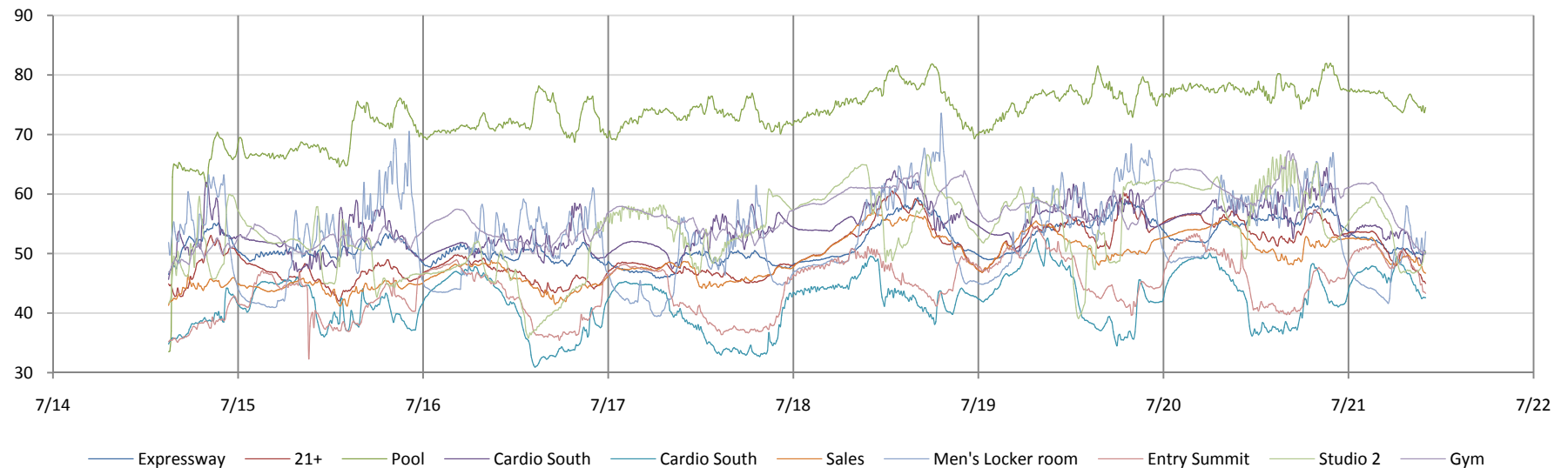
Possible Causes

- No humidification system present
- Excessive ventilation during some periods

Recommended Actions

- Add humidification system
- Improve ventilation control

TIME-RELATIVE HUMIDITY



Carbon Dioxide

Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

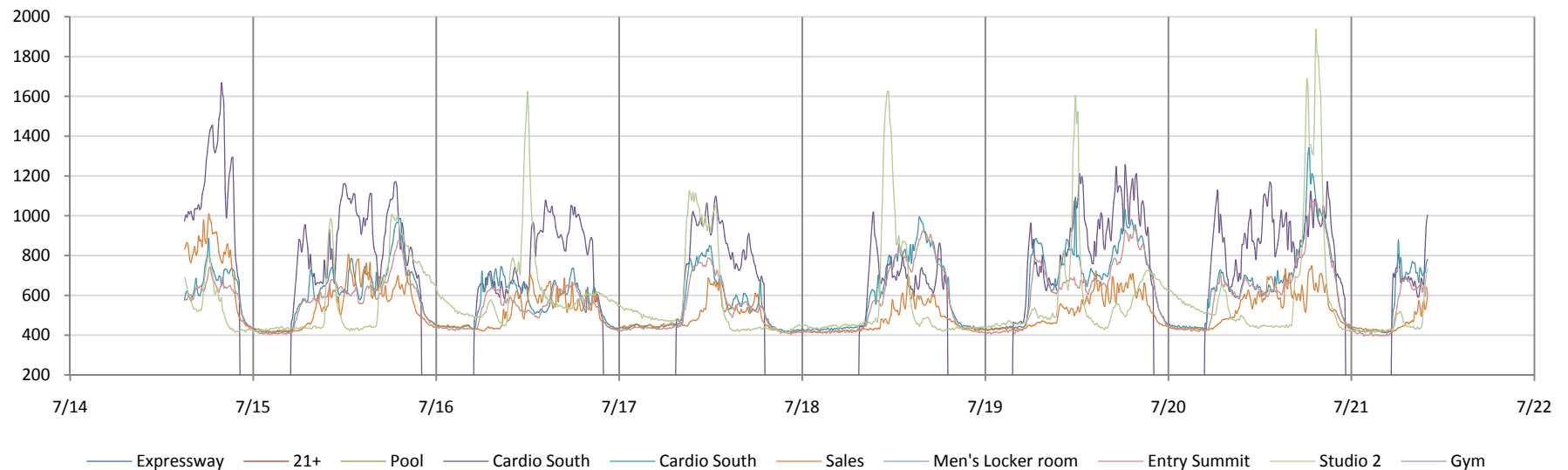
Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building different:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

TIME-CARBON DIOXIDE



Lighting

Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

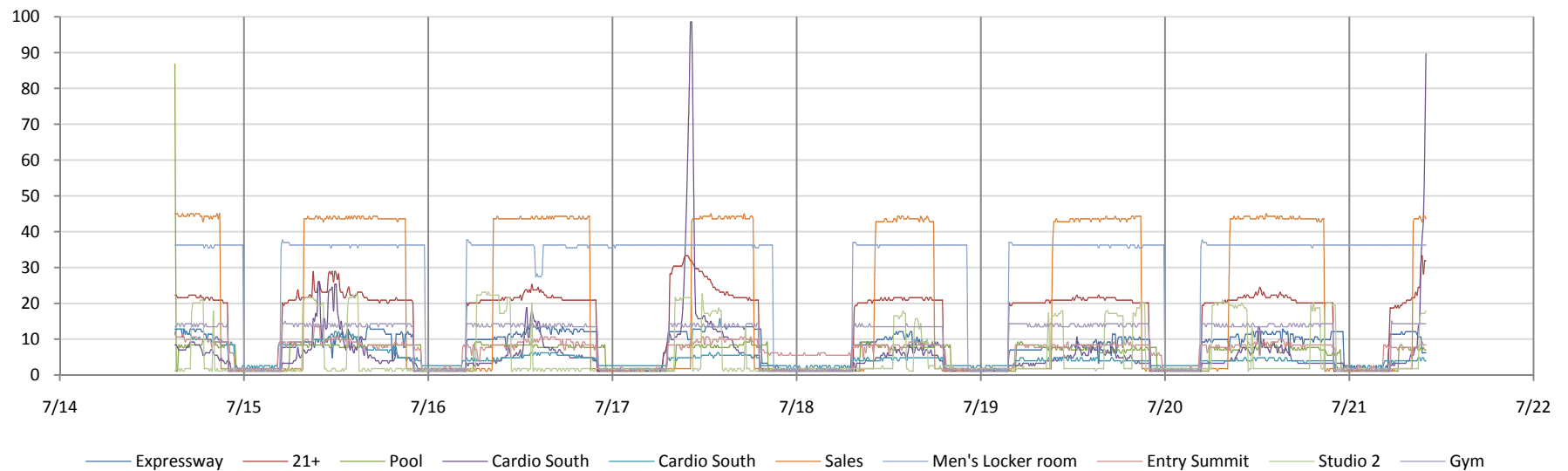
Sources: BOMA, ENERGY STAR, DOE

Energy Saving Opportunities

Energy Recommendations Based on Measurements

- Verify proper lighting levels in each area of the building

TIME LIGHTING



Building and Monitor Placement Information

General Information

Contact Information	
Building Name	
Contact	
Address	1002
Building Information	
Building Background	Building Usage: Office Building Size (sqft): 66,045 # of Stories: Building Status: Existing Construction type: Cement Block LEED Cert.: None Heating System: Boiler Domestic Hot Water: Electric Resistance Economizer: Yes Cooling System: Chiller - Cooling Tower
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
34	Expressway
35	21+
36	Pool
37	Cardio South
38	Cardio South
39	Sales
40	Men's Locker room
41	Entry Summit
42	Studio 2
43	Gym



STATEMENT OF ENERGY PERFORMANCE

1031

Building ID: 2402073

For 12-month Period Ending: June 30, 2010¹

Date SEP becomes ineligible: N/A

Date SEP Generated: October 05, 2010

Facility

1031
1031
Anchorage , AK 99515

Facility Owner

N/A

Primary Contact for this Facility

N/A

Year Built: 1995**Gross Floor Area (ft²):** 66,045**Energy Performance Rating² (1-100)** 8**Site Energy Use Summary³**

Electricity - Grid Purchase(kBtu)	4,990,961
Natural Gas (kBtu) ⁴	9,389,187
Total Energy (kBtu)	14,380,148

Energy Intensity⁵

Site (kBtu/ft²/yr)	218
Source (kBtu/ft²/yr)	401

Emissions (based on site energy use)

Greenhouse Gas Emissions (MtCO ₂ e/year)	1,319
---	-------

Electric Distribution Utility

Chugach Electric Assn Inc

National Average Comparison

National Average Site EUI	132
National Average Source EUI	242
% Difference from National Average Source EUI	66%
Building Type	Medical Office

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) or a Registered Architect (RA) 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 or RA 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	1031	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	Medical Office	Is this an accurate description of the space in question?		☐
Location	1031, Anchorage , AK 99515	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		☐
Main (Medical Office)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	66,045 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.		☐
Number of Workers	30	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100.		☐
Weekly operating hours	99 Hours	Is this the total number of hours per week that the Medical Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		☐
Percent Cooled	100 %	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?		☐
Parking (Parking)				
CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☒
Gross Floor Area	55,000 Sq. Ft.	Is this the total square footage of the entire parking area (enclosed + nonenclosed + open floor area)?		☐
Enclosed Floor Area	0 Sq. Ft.	Is this the total square footage of the enclosed garage space? An enclosed garage is defined as having both sides and a roof.		☐
Non-Enclosed Floor Area (w/roof)	0 Sq. Ft.	Is this the total square footage of the nonenclosed garage space? This is typically defined as the portion of the garage above ground (contains no sides but is under a roof).		☐

Open Floor Area (w/o roof)	55,000 Sq. Ft.	Is this the total square footage of the nonenclosed parking area without a roof? This is typically defined as open parking lots or the very top level of an above ground parking garage.	☐
Weekly Hours of Access	168 Hours	Is this the total number of hours per week when it is possible for a vehicle to enter or exit?	☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Chugach Electric Assn Inc

Fuel Type: Electricity		
Meter: 1-28036553 (kWh (thousand Watt-hours)) Space(s): Entire Facility Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
05/04/2010	06/03/2010	79,681.00
04/01/2010	05/03/2010	84,000.00
03/02/2010	04/01/2010	79,200.00
01/29/2010	03/02/2010	85,120.00
12/30/2009	01/29/2010	79,440.00
12/01/2009	12/30/2009	76,080.00
10/30/2009	12/01/2009	86,080.00
09/30/2009	10/30/2009	82,720.00
08/31/2009	09/30/2009	84,160.00
07/31/2009	08/31/2009	91,280.00
07/01/2009	07/31/2009	89,520.00
1-28036553 Consumption (kWh (thousand Watt-hours))		917,281.00
1-28036553 Consumption (kBtu (thousand Btu))		3,129,762.77
Meter: 4-95255822 (kWh (thousand Watt-hours)) Space(s): Entire Facility Generation Method: Grid Purchase		
Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
05/03/2010	06/02/2010	38,240.00
04/01/2010	05/03/2010	38,800.00
03/02/2010	04/01/2010	36,240.00
01/29/2010	03/02/2010	40,000.00
12/31/2009	01/29/2010	39,040.00
12/01/2009	12/30/2009	37,360.00
10/30/2009	12/01/2009	40,240.00
09/30/2009	10/30/2009	37,600.00
08/31/2009	09/30/2009	39,440.00
07/31/2009	08/31/2009	44,080.00
07/01/2009	07/31/2009	41,760.00
4-95255822 Consumption (kWh (thousand Watt-hours))		432,800.00
4-95255822 Consumption (kBtu (thousand Btu))		1,476,713.60
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		4,606,476.37

Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☐
Fuel Type: Natural Gas		
Meter: 6154 (ccf (hundred cubic feet)) Space(s): Entire Facility		
Start Date	End Date	Energy Use (ccf (hundred cubic feet))
05/28/2010	06/27/2010	3,900.00
04/30/2010	05/27/2010	3,899.16
04/01/2010	04/30/2010	4,926.59
03/01/2010	04/01/2010	5,854.77
02/01/2010	03/01/2010	5,158.64
12/31/2009	02/01/2010	6,600.54
11/30/2009	12/31/2009	5,390.66
10/29/2009	11/30/2009	6,156.57
09/30/2009	10/29/2009	4,787.10
08/31/2009	09/30/2009	4,309.60
07/31/2009	08/31/2009	4,241.19
06/30/2009	07/31/2009	3,845.51
6154 Consumption (ccf (hundred cubic feet))		59,070.33
6154 Consumption (kBtu (thousand Btu))		6,078,336.96
Meter: 139689 (ccf (hundred cubic feet)) Space(s): Entire Facility		
Start Date	End Date	Energy Use (ccf (hundred cubic feet))
06/01/2010	06/30/2010	2,397.00
05/01/2010	05/31/2010	2,011.61
04/01/2010	04/30/2010	2,150.26
03/01/2010	04/01/2010	3,003.77
02/01/2010	03/01/2010	2,816.25
12/31/2009	02/01/2010	3,537.92
11/30/2009	12/31/2009	3,024.23
10/29/2009	11/30/2009	3,245.00
09/30/2009	10/29/2009	2,896.94
08/31/2009	09/30/2009	2,819.66
07/31/2009	08/31/2009	2,330.96
06/30/2009	07/31/2009	2,204.81
139689 Consumption (ccf (hundred cubic feet))		32,438.41
139689 Consumption (kBtu (thousand Btu))		3,337,912.39
Total Natural Gas Consumption (kBtu (thousand Btu))		9,416,249.35
Is this the total Natural Gas consumption at this building including all Natural Gas 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.	☐

On-Site Solar and Wind Energy

Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.



Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA 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

1031
1031
Anchorage , AK 99515

Facility Owner

N/A

Primary Contact for this Facility

N/A

General Information

1031	
Gross Floor Area Excluding Parking: (ft ²)	66,045
Year Built	1995
For 12-month Evaluation Period Ending Date:	June 30, 2010

Facility Space Use Summary

Main		Parking	
Space Type	Medical Office	Space Type	Parking
Gross Floor Area(ft ²)	66,045	Gross Floor Area(ft ²)	55,000
Number of Workers	30	Enclosed Floor Area	0
Weekly operating hours	99	Non-Enclosed Floor Area (w/roof)	0
Percent Cooled	100	Open Floor Area (w/o roof)	55,000
Percent Heated	100	Weekly Hours of Access	168

Energy Performance Comparison

Performance Metrics	Evaluation Periods		Comparisons		
	Current (Ending Date 06/30/2010)	Baseline (Ending Date 04/30/2010)	Rating of 75	Target	National Average
Energy Performance Rating	8	7	75	50	50
Energy Intensity					
Site (kBtu/ft ²)	218	220	88	132	132
Source (kBtu/ft ²)	401	404	162	242	242
Energy Cost					
\$/year	\$ 251,106.90	\$ 254,031.36	\$ 101,501.48	\$ 151,681.35	\$ 151,681.35
\$/ft ² /year	\$ 3.80	\$ 3.85	\$ 1.54	\$ 2.30	\$ 2.30
Greenhouse Gas Emissions					
MtCO ₂ e/year	1,319	1,327	533	797	797
kgCO ₂ e/ft ² /year	20	20	8	12	12

More than 50% of your building is defined as Medical Office. 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.

Statement of Energy Performance

2010

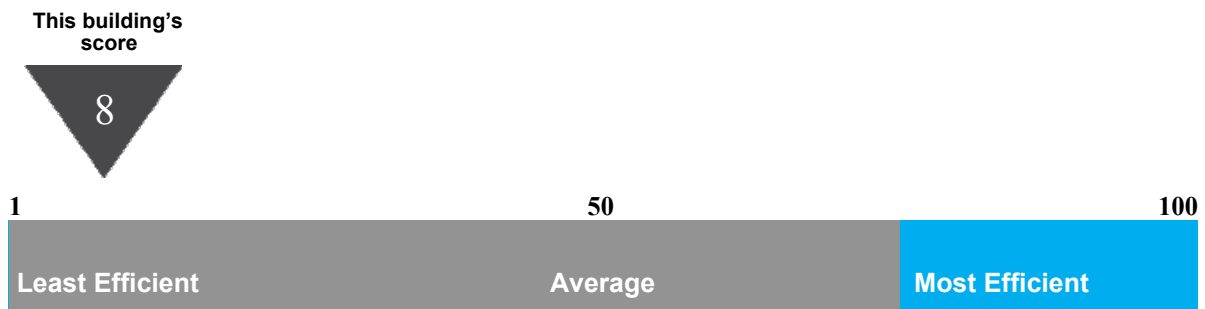
1031

1031

Anchorage , AK 99515

Portfolio Manager Building ID: 2402073

The energy use of this building has been measured and compared to other similar buildings using the Environmental Protection Agency's (EPA's) Energy Performance Scale of 1–100, with 1 being the least energy efficient and 100 the most energy efficient. For more information, visit energystar.gov/benchmark.



This building uses 401 kBtu per square foot per year.*

*Based on source energy intensity for the 12 month period ending June 2010

Buildings with a score of 75 or higher may qualify for EPA's ENERGY STAR.

I certify that the information contained within this statement is accurate and in accordance with U.S. Environmental Protection Agency's measurement standards, found at energystar.gov

Date of certification



Date Generated: 10/05/2010

Commercial Energy \$avings Assessment



Watt Buster



ASSESSMENT SITE
1032

ASSESSMENT PERFORMED BY
Control Contractors – Anchorage
5660 B Street
Anchorage, Alaska 99518

CHUGACH
POWERING ALASKA'S FUTURE

CONTROL
CONTRACTORS

smart building solutions



positiveENERGY

Executive Summary

This Building Service Assessment is designed to help key stakeholders understand the opportunities for improving building performance.

Findings and Opportunities for Improvement:

We performed a survey using diagnostic monitoring equipment and visual inspection to identify the opportunities for improving the energy and comfort performance of this building.

Benchmarks:

- Your building's Energy Usage Index is 278.75 kBtu/ft²
- Your building's Cost Per Square foot is \$8.03 \$/sqft
- Your building's Carbon Emissions are 0 lbs/sqft

Opportunities for Improvement:

- Boiler reset controller
- Propain and Electrical Sub metering
- Outside air ventilation system

	Assessment	What we Tested and Found	Areas of Interest
Comfort		Temperature (T) 7 of 7 spaces measured had excessive deviations from the optimum comfort range. Relative Humidity (RH) 1 of 7 spaces measured had excessive deviations from the optimum comfort range.	• Conf (RH,T) • Bar (T) • Restaurant B (T) • Shop (T) • Restaurant A (T) • Admin (T) • Front Desk (T)

	Assessment	What we Tested and Found	Areas of Interest
Ventilation		Carbon Dioxide (CO₂) space(s) had elevated carbon dioxide levels space(s) had low carbon dioxide levels	• Admin (CO₂) • Front Desk (CO₂)

How Does Your Building Use Electricity Today?

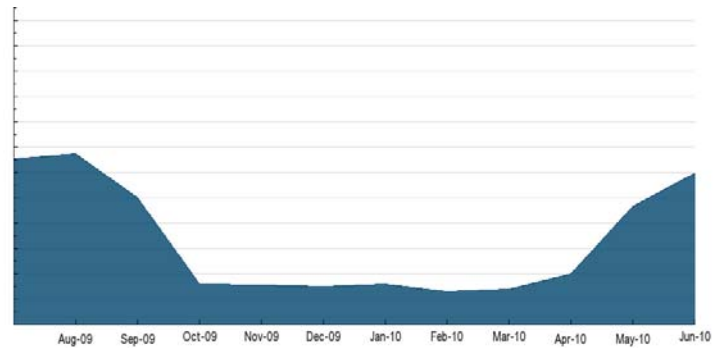
This page shows how electricity use in your building compares to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating or cooling equipment operating in your building. Overall flat consumption can be indicative of 1) simultaneous heating and cooling, 2) extended fan operation, 3) extensive reheat, and 4) an inefficient lighting system. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

Utility Bill Analysis

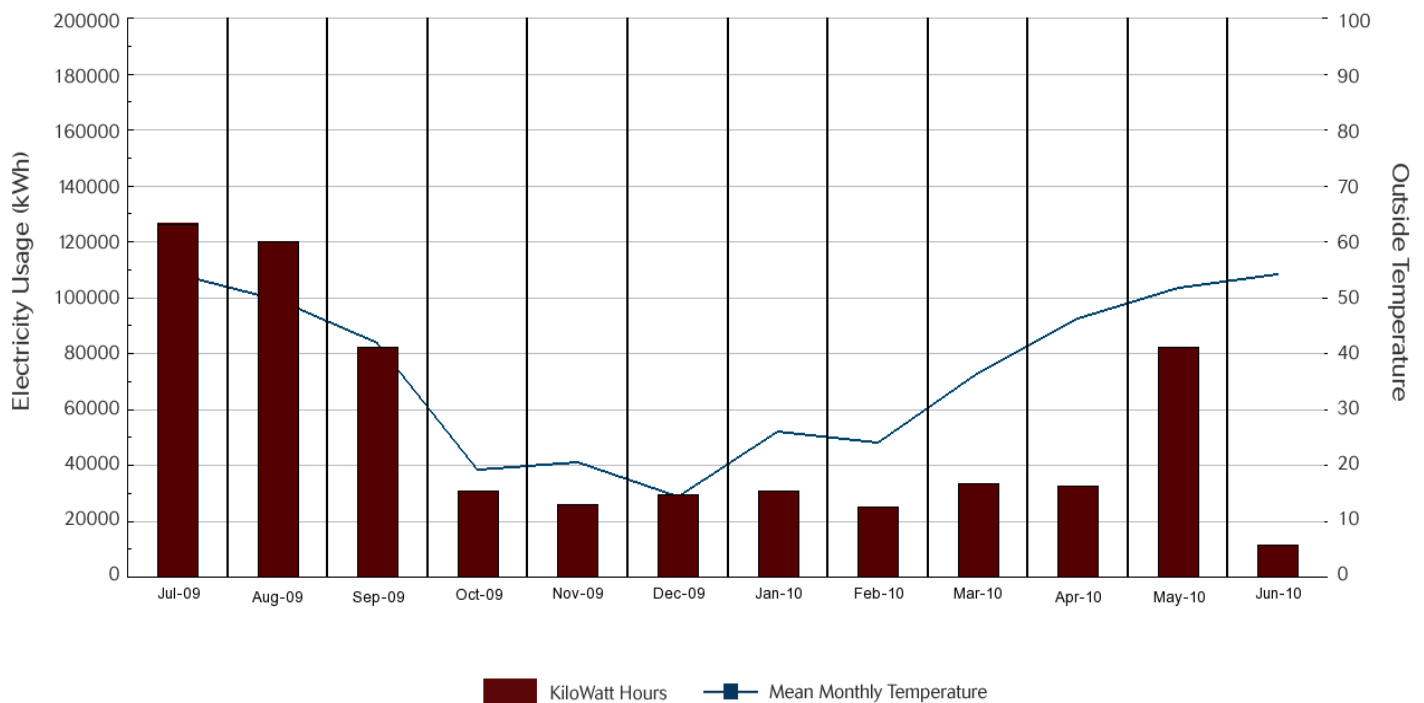
Electricity Consumption

- Electricity comprises 60.1% of your total utility cost, and 46.6% of your total utility consumption.
- Your Total Spend on electricity is \$79,693, so when considering savings opportunities, remember you can only save some percentage of that total.
- Demand costs are included in overall electricity costs.

Monthly Electricity Costs



Electricity Consumption and Outside Air Temperature





How Does Your Building Use Fuel Today?

This page shows how Fuel is used in your building relative to outside weather and helps identify performance issues in the building. Typically your consumption should track the weather pattern for the type of heating equipment operating in your building. Overall excessive consumption can be indicative of 1) simultaneous heating and cooling, 2) extensive reheat, and 3) heating in warmer months. Be aware, some variation can be caused by estimated meter readings which are “fixed” the next time the meter is actually read

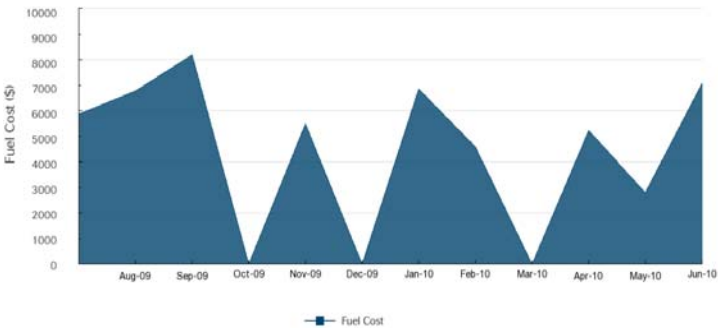


Monthly Fuel Costs

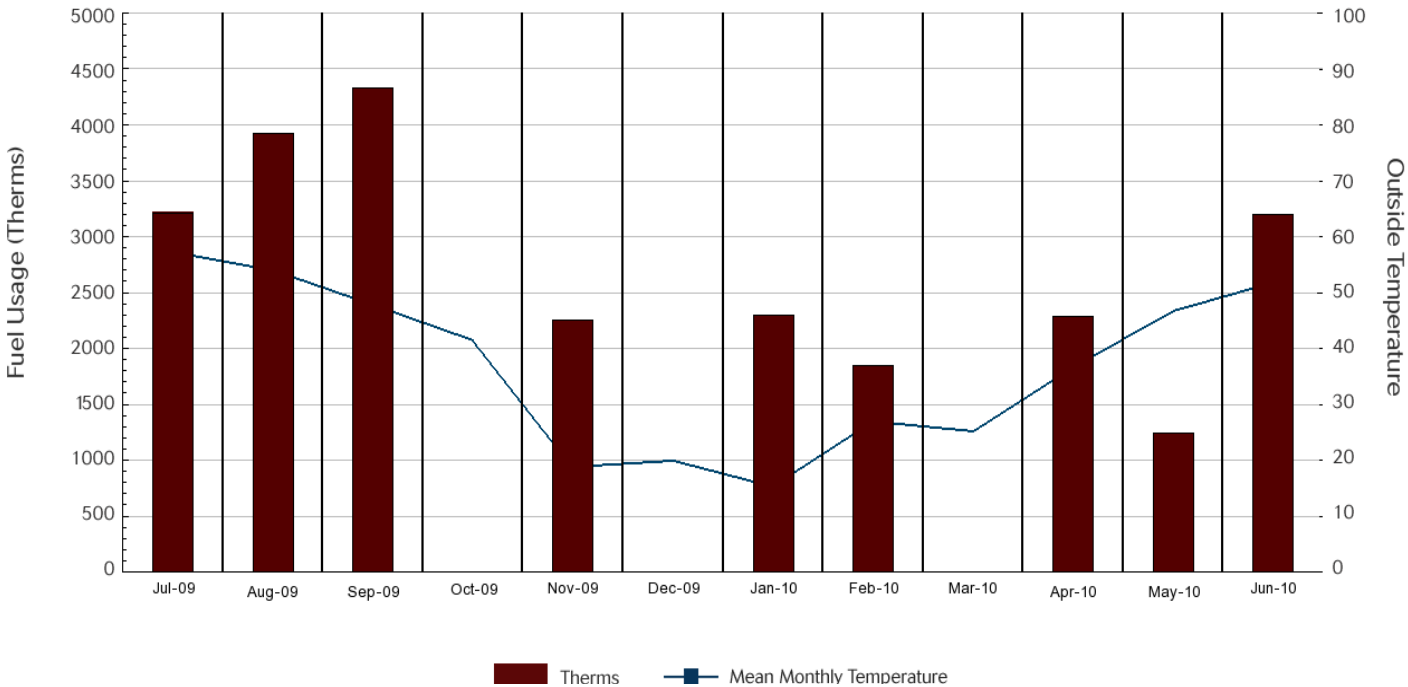
Utility Bill Analysis

Fuel Consumption

- Fuel comprises 39.9% of your total utility cost, and 53.4% of your total utility consumption.
- Your Total Spend on Fuel is \$52,896, so when considering savings opportunities, remember you can only save some percentage of that total.



Fuel Consumption and Outside Air Temperature



Building Comfort and Ventilation Analysis

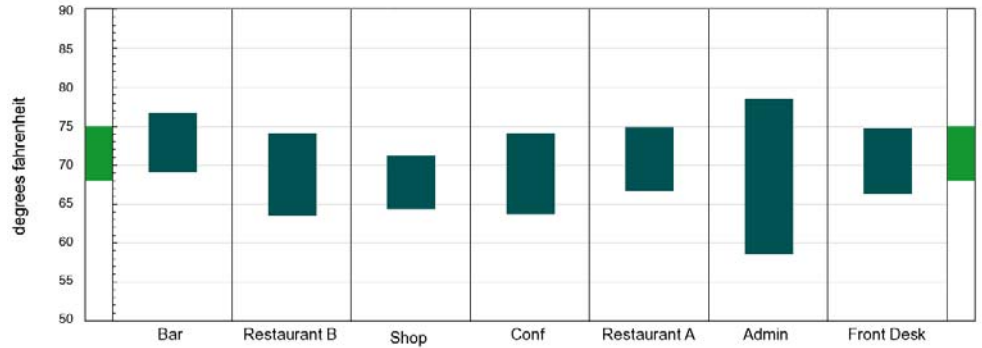
This page shows the min/max range of temperature, humidity, and carbon dioxide levels measured during occupied periods. Reducing the range is critical to achieving a building under control that is properly ventilated which allows tenants to be comfortable and productive. The action ratings are based on the worst case found when comparing measured data during occupied hours against established industry guidelines (ENERGY STAR, BOMA, ASHRAE, DOE).

Temperature Findings



Your building is out of control with ample opportunity to save energy.

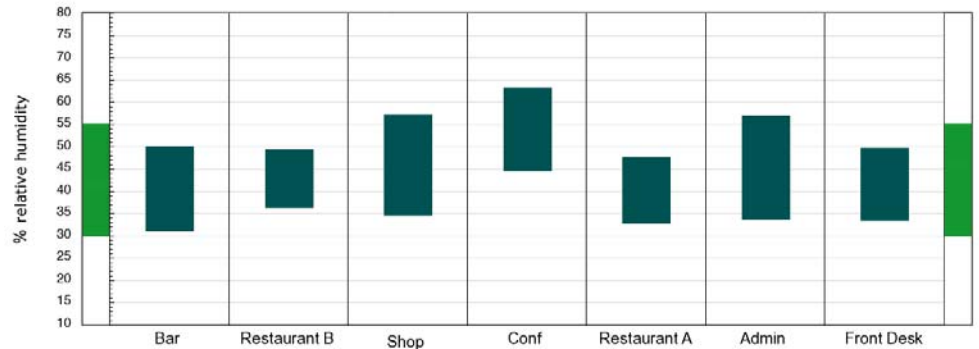
- 2 space(s) were too warm at times
- 6 space(s) were too cool at times
- 7 space(s) had excessive temperature variation



Relative Humidity Findings



- 1 space(s) had high relative humidity at times
- 0 space(s) had low relative humidity at times

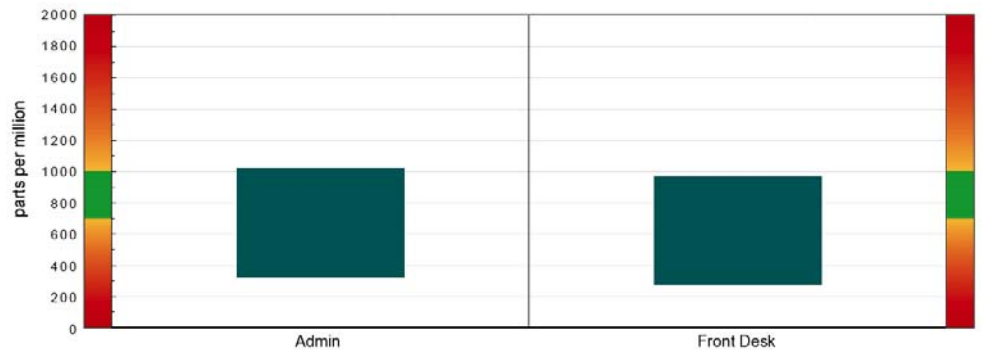


Carbon Dioxide Findings



Your building is over-ventilated and can save energy by reducing the overall amount of outside air ventilation

- 1 space(s) had elevated carbon dioxide levels
- 2 space(s) had low carbon dioxide levels



Temperature



[Sensor Range: 32 to 100 °F; Resolution: 0.1 °F; Calibration Accuracy: ± 1°F]

The ideal temperature is between 68 °F and 75 °F during the heating season and 72 °F and 78 °F during the cooling season, with variation of less than 3 °F. Lowering the heating setpoint and raising the cooling setpoint can save significant energy while maintaining a comfortable and productive working environment.

Sources: ASHRAE Standard 55 – 1992, BOMA, ENERGY STAR, DOE

Alert Lvl	
	Occupied/Unoccupied Heating Setpoint is 68 / 68
	Occupied/Unoccupied Cooling Setpoint is 80 / 80

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Calibrate thermostat(s) to reduce temperature variation
- Verify the controls system is shutting the heating & cooling equipment off
- Move thermostat(s) to reduce temperature variation
- Balance air flow within duct system to reduce temperature variation

Further Comfort & Energy Recommendations

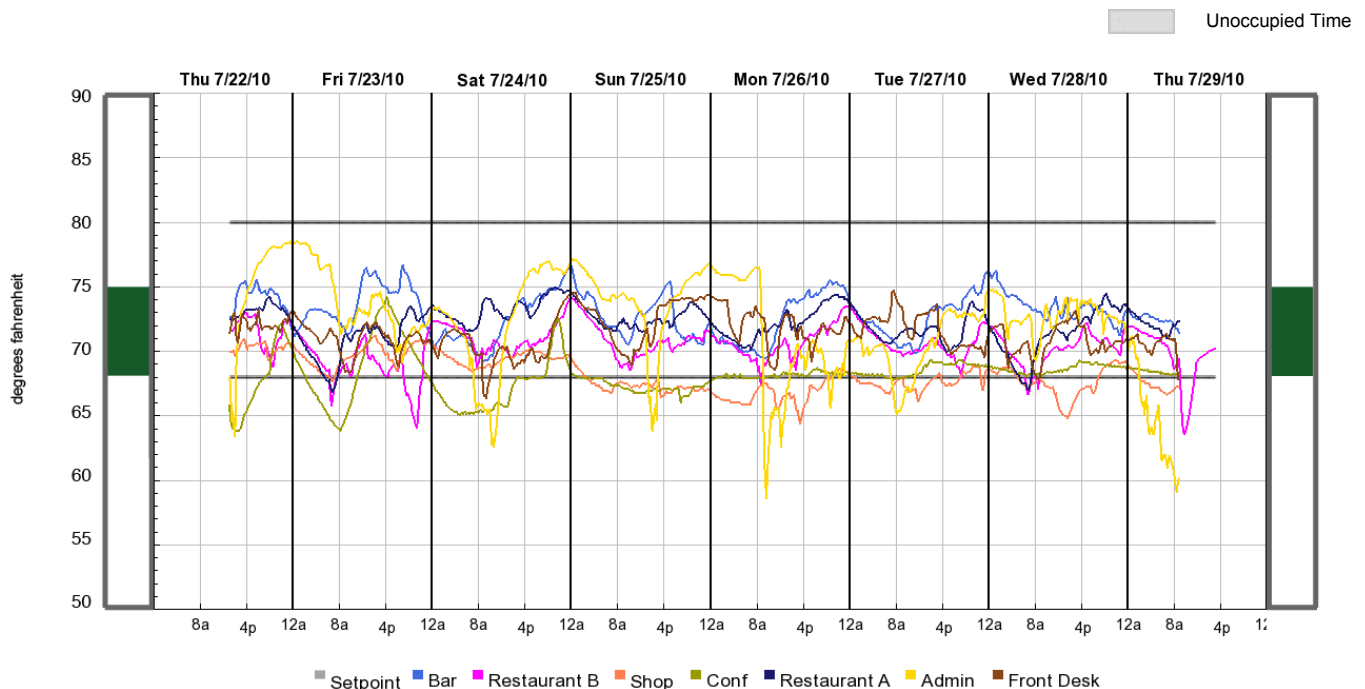
- Increase the amount of heating set back possible during the unoccupied times

Monitor Statistics

Monitor	Alert Lvl	Min °F	Max °F	Avg °F	%ToR*	SV†
Bar		69	76	73	11%	5
Restaurant B		65	74	70	6%	8
Shop		65	71	68	51%	3
Conf		64	74	68	43%	6
Restaurant A		67	75	72	3%	5
Admin		60	78	72	40%	18
Front Desk		67	74	71	1%	5

These statistics are for occupied times only.

* % Time out of Range † Spread Value



Relative Humidity

[Sensor Range: 10 to 95 %; Resolution: 1%; Calibration Accuracy: $\pm 5\%$]



Optimum comfort and health is achieved when relative humidity is maintained between 30% and 55%. Readings outside these boundaries may indicate ventilation issues which contribute to an increase of energy used to condition the space.

Sources: ASHRAE Standard 55 – 1992, American Lung Association, Indoor Air Quality Association, BOMA, ENERGY STAR, DOE

Analysis and Recommendations

Our findings indicate areas in your building that may have issues worth investigating for possible energy savings, and especially if there are comfort complaints.

Possible Causes

- Excessive sources of humidity

Recommended Actions

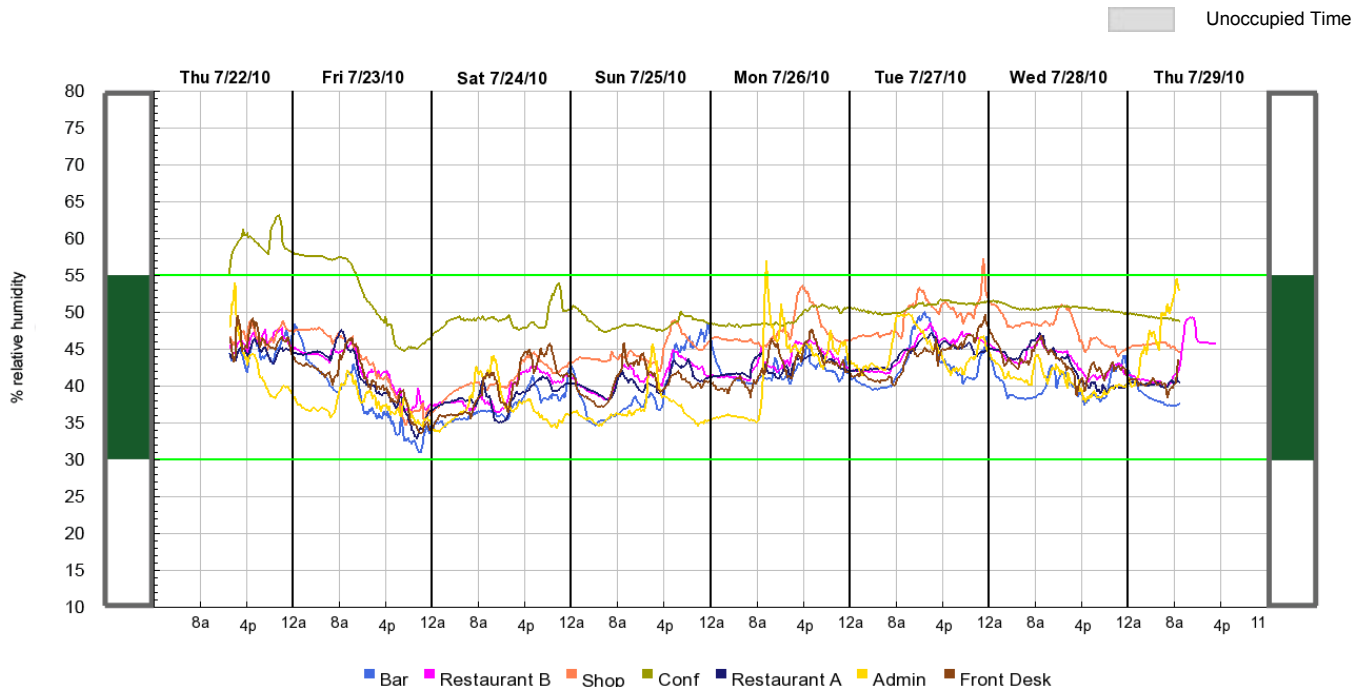
- Eliminate sources of humidity or install direct exhaust equipment in affected area

Monitor Statistics

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
Bar		31	50	40	0%
Restaurant B		36	49	43	0%
Shop		35	57	46	0%
Conf		45	63	51	13%
Restaurant A		33	48	42	0%
Admin		34	57	40	0%
Front Desk		34	50	42	0%

These statistics are for occupied times only.

* % Time out of Range



Carbon Dioxide

[Sensor Range: 0 to 2000 ppm; Resolution: 10 ppm; Calibration Accuracy: ± 100 ppm]



Monitoring carbon dioxide levels is an important aspect of ensuring a comfortable, healthy and energy efficient indoor environment. At levels above 1000 ppm, air becomes stale and less comfortable to breathe. Levels well below 1000 ppm may indicate excessive outside air, resulting in higher than necessary energy costs due to the need for conditioning of this additional outside air.

Sources: ASHRAE Standard 62-2001, U.S. Green Building Council, Indoor Air Quality Association, Health Canada, BOMA, ENERGY STAR, DOE

Monitor Statistics

Energy Savings Opportunities

Our findings indicate there are several ways to save money by operating your building differently:

Energy Recommendations Based on Measurements

- Verify dampers are not stuck open or leaky
- Reduce the amount of outside air ventilation
- Install demand control ventilation

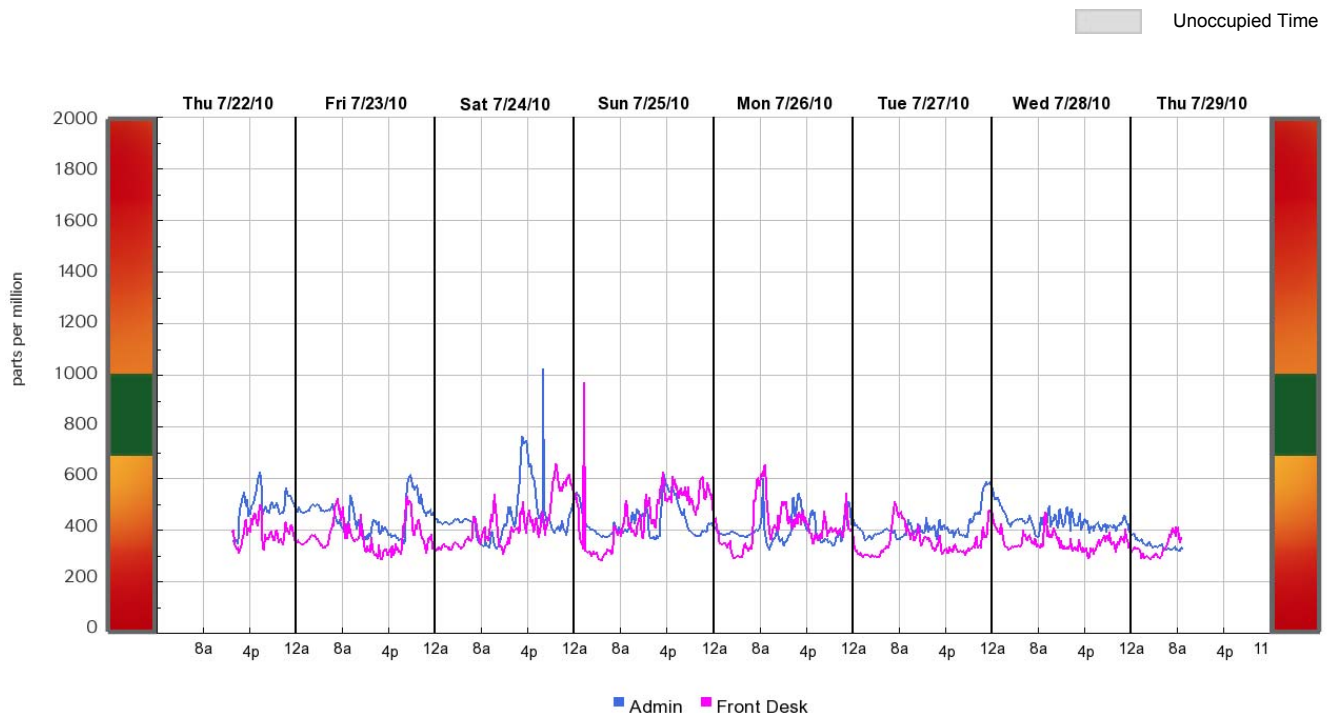
Comfort & Health Recommendations

- Increase the amount of ventilation into the building.

Monitor	Alert Lvl	Min	Max	Avg	% ToR*
Admin		320	1023	429	99%
Front Desk		281	970	390	100%

These statistics are for occupied times only.

* % Time out of Range



Lighting



Lighting controls and scheduling are some of the easiest low and no cost investments in energy efficiency. Controlling the artificial lights with occupancy or daylight controls and replacing inefficient bulbs can significantly reduce your electrical energy spend. In the graph below, artificial lights are represented by the sharp on/off of the curve, natural daylight by a gradual increase, and direct sunlight by the large spikes.

Sources: BOMA, ENERGY STAR, DOE

Stated Schedule: 24 average occupied hours

Energy Savings Opportunities

Our findings indicate your building is not wasting energy on lights.

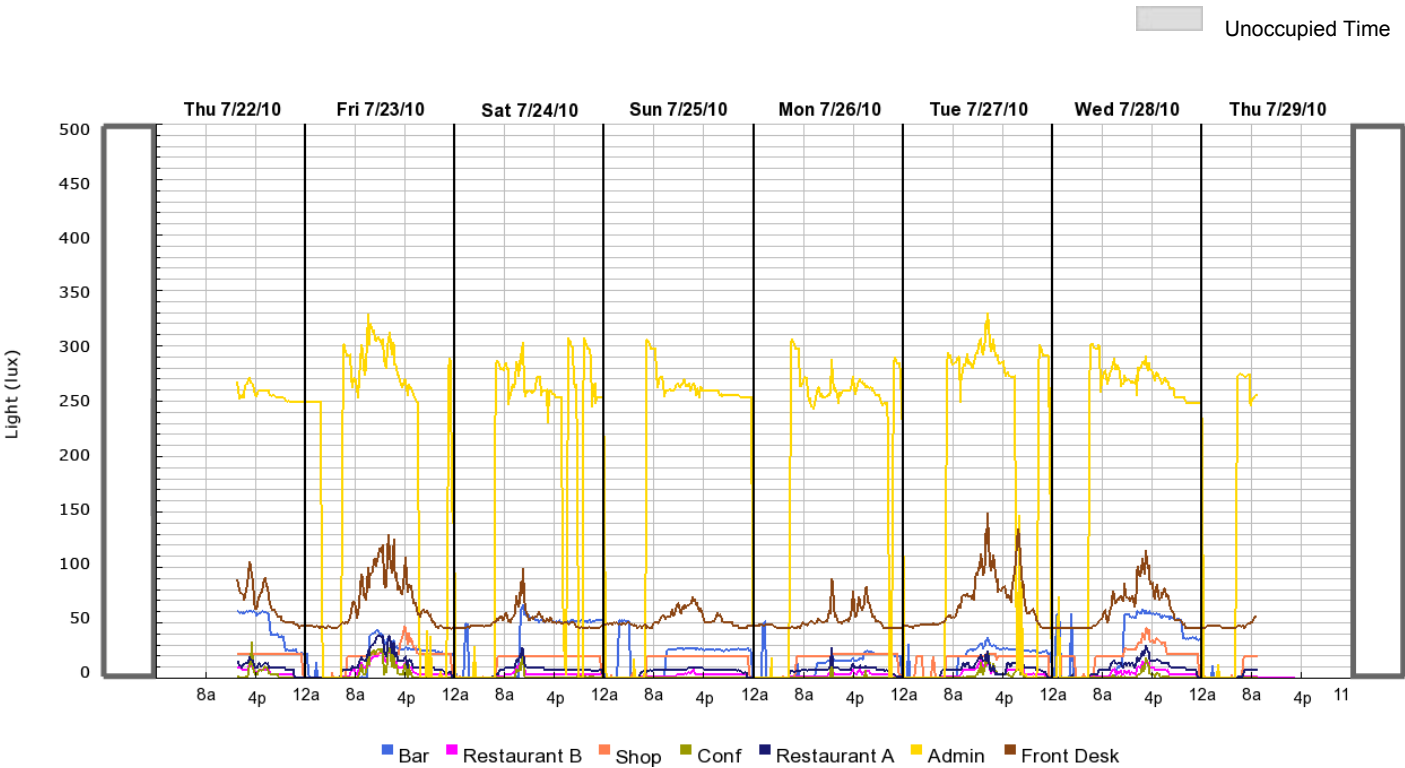
Energy Recommendations Based on Measurements

- No recommendations at this time.

Further Energy Recommendations

- No recommendations at this time.

Monitor		Alert Lvl	Measured On-Time
	Bar		12. hrs
	Restaurant B		0.2 hrs
	Shop		14. hrs
	Conf		1.0 hrs
	Restaurant A		3.9 hrs
	Admin		16. hrs
	Front Desk		12. hrs



Outdoor Conditions

Outdoor conditions recorded during the test period are included as part of this report.

The outdoor data included in this report was recorded at:

Outdoor Temperature

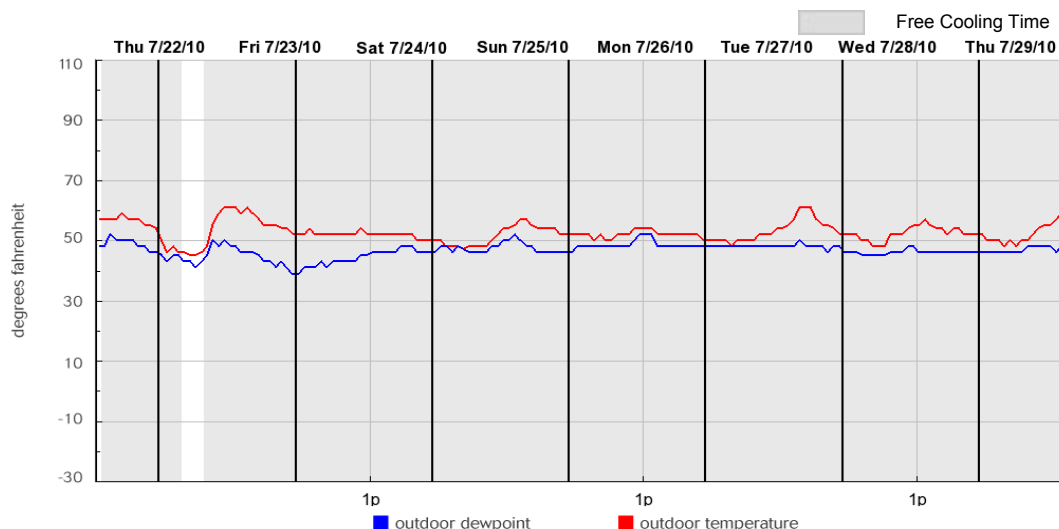
Test Period Avg: 7/22/10 – 7/29/10	Heating Degree Days	Cooling Degree Days
53 °F	12	0

Outdoor Temperature and Dewpoint

A major factor in the total cost of heating and cooling a building is the heat lost (during heating season) or gained (during cooling season) due to the difference between indoor and outdoor temperatures. The amount of energy consumed to compensate for the difference between outdoor temperature and the desired indoor temperature is driven by three primary factors:

- Heat lost or gained due to conduction through walls, ceilings, and windows.
- Energy required to heat, cool, and dehumidify outside air entering the building, either through infiltration or mechanical ventilation.
- Heat gain due to solar load.

This chart shows the outdoor temperature and dewpoint during the test period at the test location.



More aggressive temperature setbacks during unoccupied periods may provide energy savings with no impact on occupant comfort. Proper ventilation control and use of an economizer for free cooling may also contribute significantly to energy savings.

Building and Monitor Placement Information

General Information

Contact Information	
Building Name	
Contact	
Address	
Building Information	
Building Background	Building Usage: Hotel Building Size (sq ft): 16520 # of Stories: 2 Building Status: Existing Construction type: Wood Frame LEED Cert.: None Heating System: Boiler Domestic Hot Water: Gas or Other Fuel Economizer: No Cooling System: None
Additional Systems	Humidification: No Demand Control Ventilation: No Dehumidification: No

Monitor Placement

Building Area	Monitor Serial #
Bar	20431
Restaurant B	20420
Shop	20418
Conf	20416
Restaurant A	20415
Admin	20293
Front Desk	20288

Temperature Control Schedule

	Time	Heating	Cooling	Occupied
Mon	00:00	68	80	Yes
Tue	23:59	68	80	No
Wed				
Thu				
Fri				
Sat				
Sun				

Building Controls Information

Current Controls	
Controls Type	Thermostat
Schedule Type	On/Off (Auto fan)
Air Delivery Method	Constant Volume (CV)
Air-Flow Modulation	N/A

Building Utility Information

Electric Utility Information

Date	Electric Usage		Electric Demand	
	kWh	Cost	KW	Cost
7/29/09	126000	\$13,052		\$0
8/29/09	120000	\$13,444		\$0
9/29/09	82200	\$9,976		\$0
10/29/09	30600	\$3,229		\$0
11/29/09	25800	\$3,158		\$0
12/29/09	29400	\$2,974		\$0
1/29/10	30600	\$3,229		\$0
2/18/10	25200	\$2,578		\$0
3/31/10	33600	\$2,803		\$0
4/30/10	32400	\$3,987		\$0
5/31/10	82200	\$9,327		\$0
6/30/10	11400	\$11,936		\$0
TOTAL:	629400	\$79,693		\$0

Fuel Utility Information

Date	Fuel Usage	
	Usage	Cost
7/1/09 3208		\$5,877
8/1/09 3918		\$6,777
9/1/09 4325		\$8,187
10/1/09 0		\$0
11/1/09 2250		\$5,487
12/1/09 0		\$0
1/1/10 2299		\$6,864
2/1/10 1841		\$4,593
3/1/10 0		\$0
4/1/10 2287		\$5,234
5/1/10 1247		\$2,813
6/1/10 3199		\$7,064
TOTAL:	24574	\$52,896