



PAA Information for Mississinewa  
School Corporation

***Guaranteed Savings Report***  
***Guaranteed Energy Savings Presentation***

December 9, 2008

# Mississinewa Savings Presentation

*Shana Bradley, PAA*





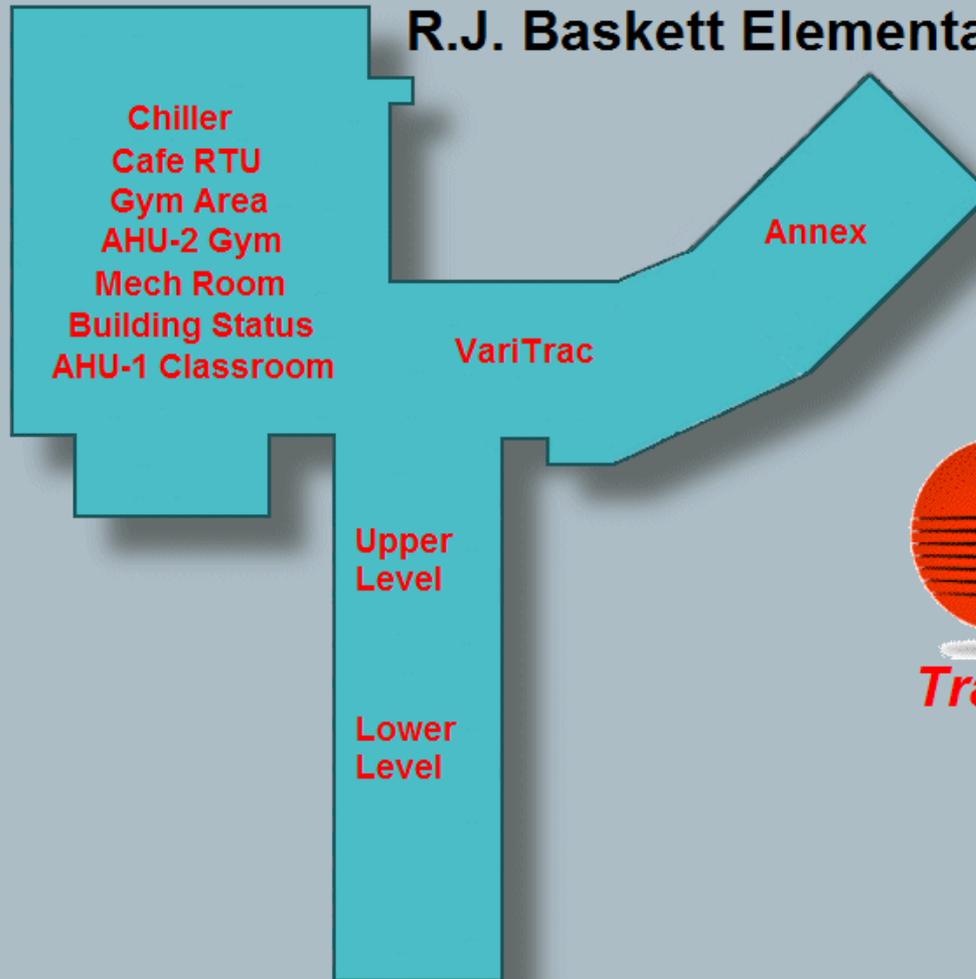
# Needs and Solutions – RJ Baskett Middle School



Outside Air Temperature 73.2 °F

Outside Air Humidity 6.6 %

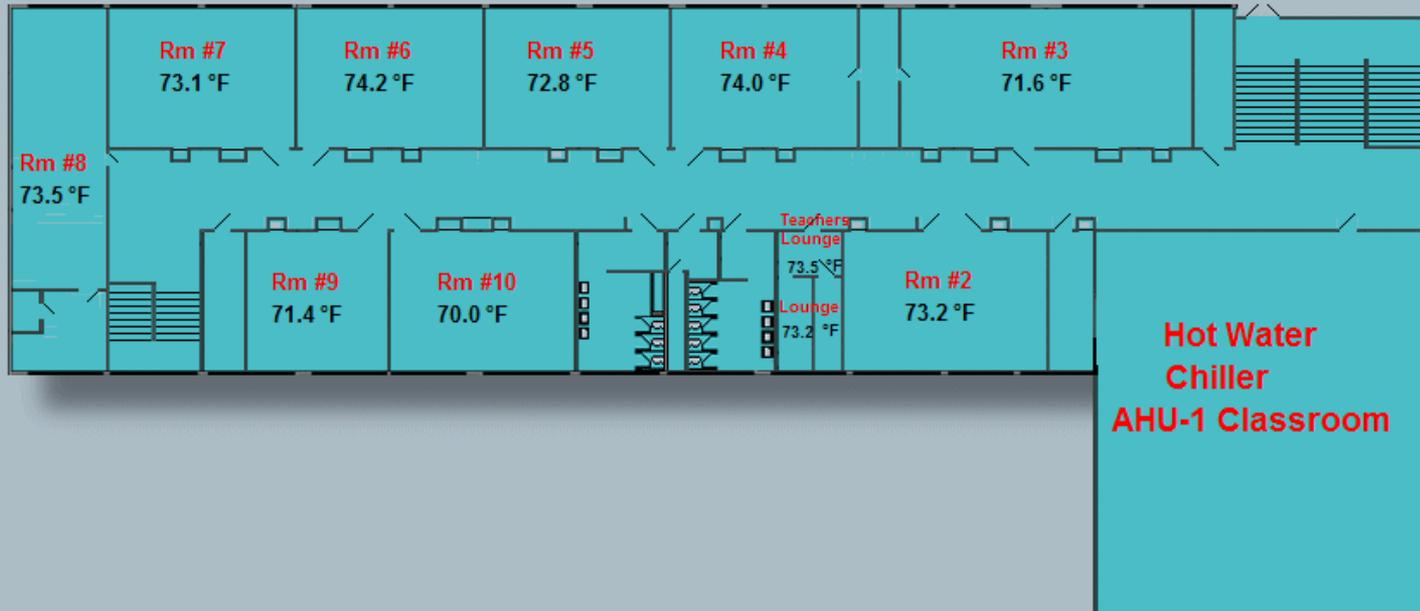
# R.J. Baskett Elementary



Outside Air Temperature 72.4 °F

Outside Air Humidity 6.5 %

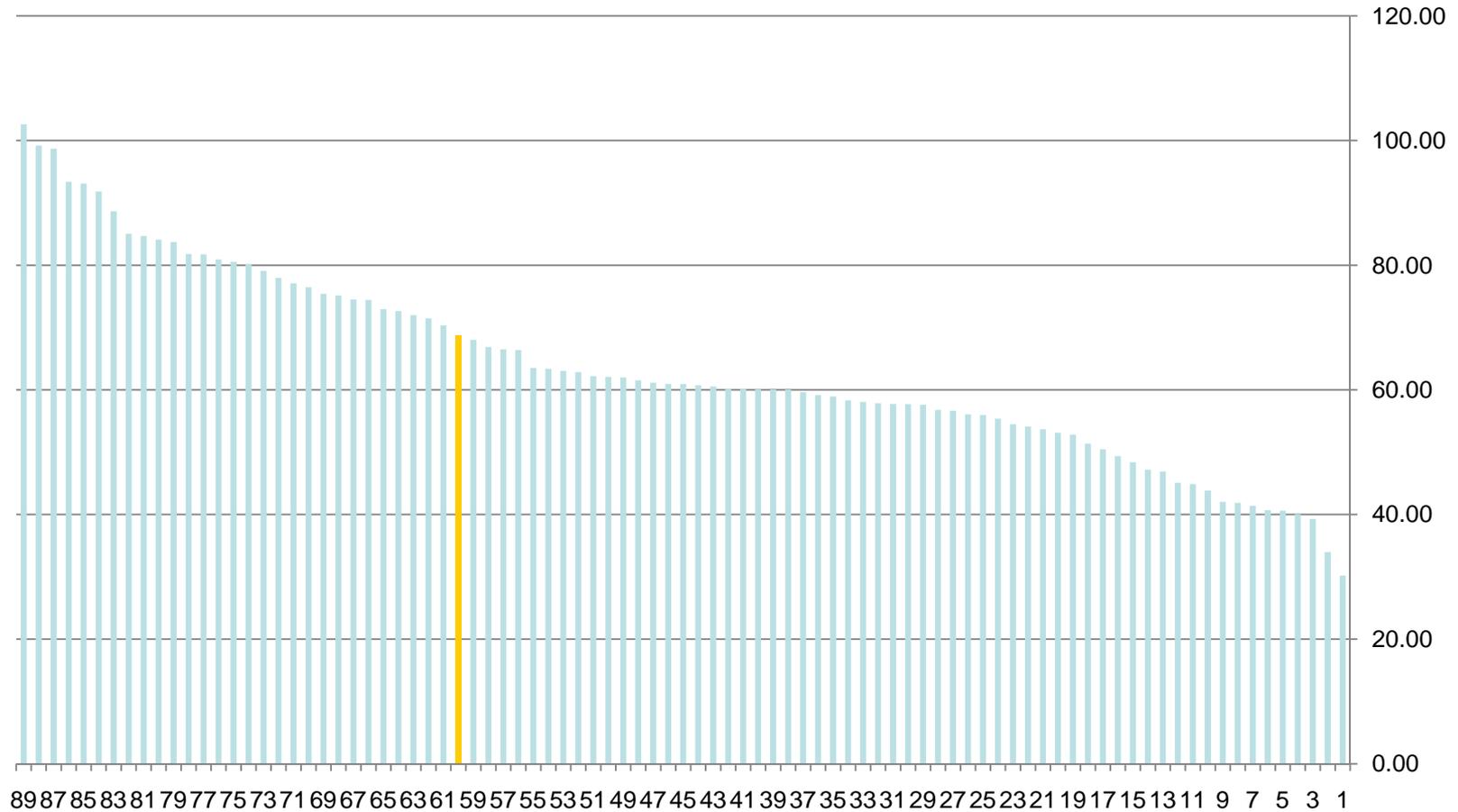
# Area A Lower Level



Main Floor  
Upper Level



# Building Portfolio – RJ Baskett





# Energy Index

Low Efficiency (80,000 BTU +)	Moderate (60,000 – 79,999)	High Efficiency (> 59,999)
	70,326	



**RJ Baskett**

Gas reduced by 40%

6 Year Utility Bill Savings of \$81,269



# Needs and Solutions – Mississinewa High School

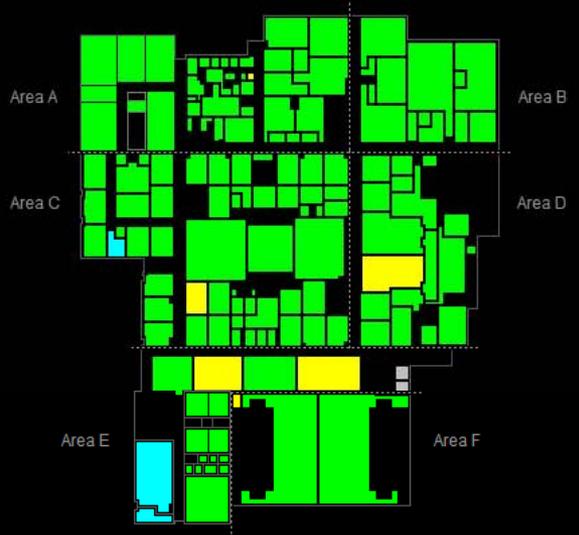


3:55 PM 9/16/2008 Tuesday

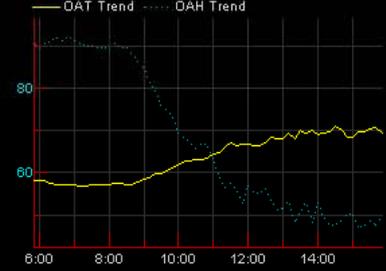
69.7 °F  
47.4 %rh

# High School

[To: District Overview](#)  
[To: Primary Equipment](#)



### Outdoor Air Conditions - OA Trend



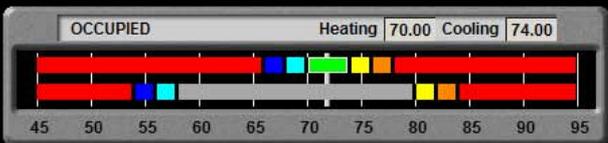
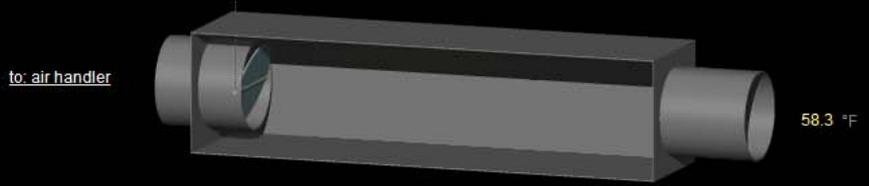
9:28 AM 9/17/2008 Wednesday

☀️ 58.9 °F  
☁️ 79.4 %rh

### C-160 (VAV C-19)

[To: Building Overview](#)  
[To: Primary Equipment](#)

actual 170 cfm  
setpoint 182 cfm  
damper position 19 %



72  
Occupied

MANUAL WARMER  
INFO COOLER

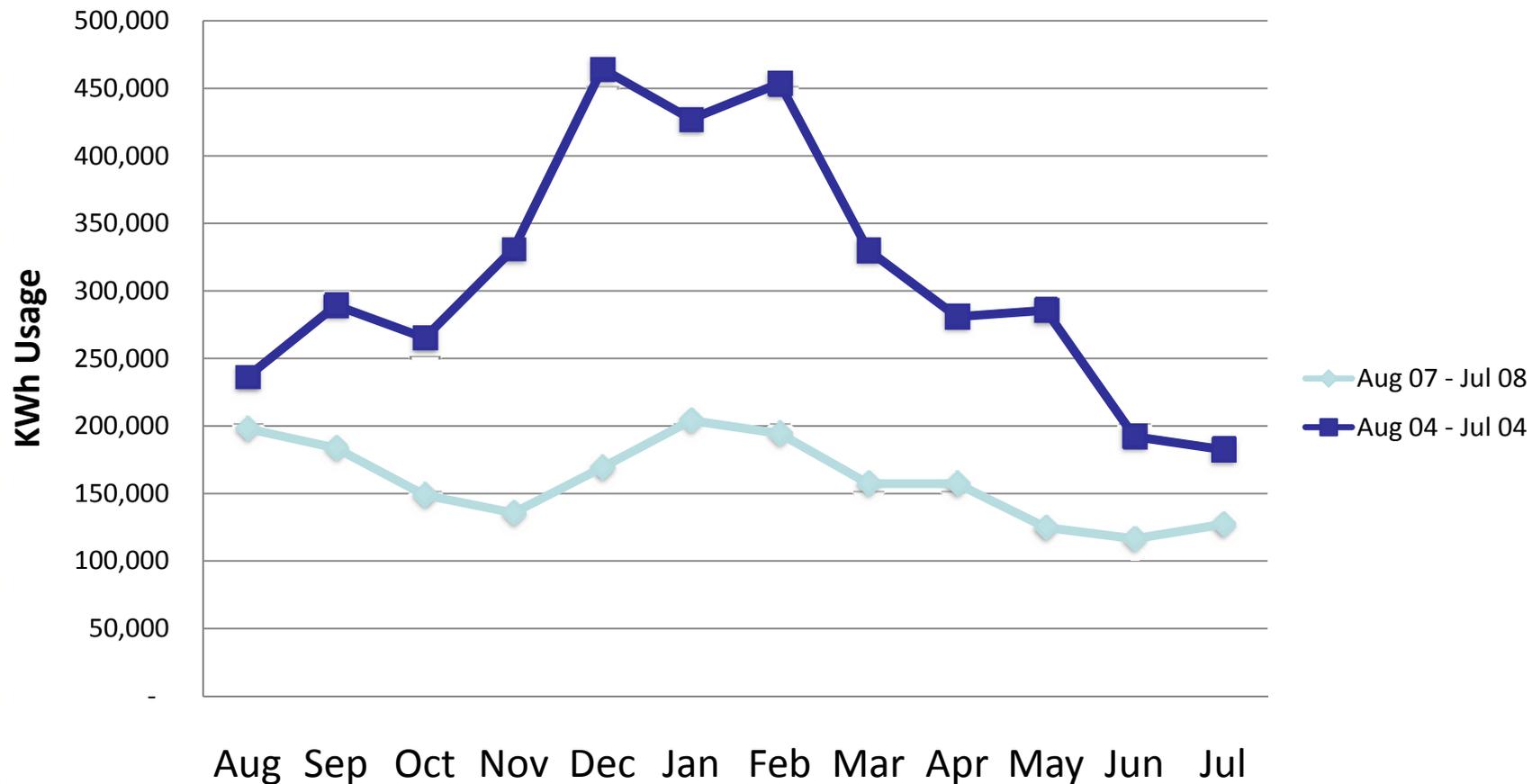
setpoint adj by -2.0  
Occupied until 4:00 PM



# IMPACT on Utility Bills

Mississinewa 2007-2008

## KWh Reduction



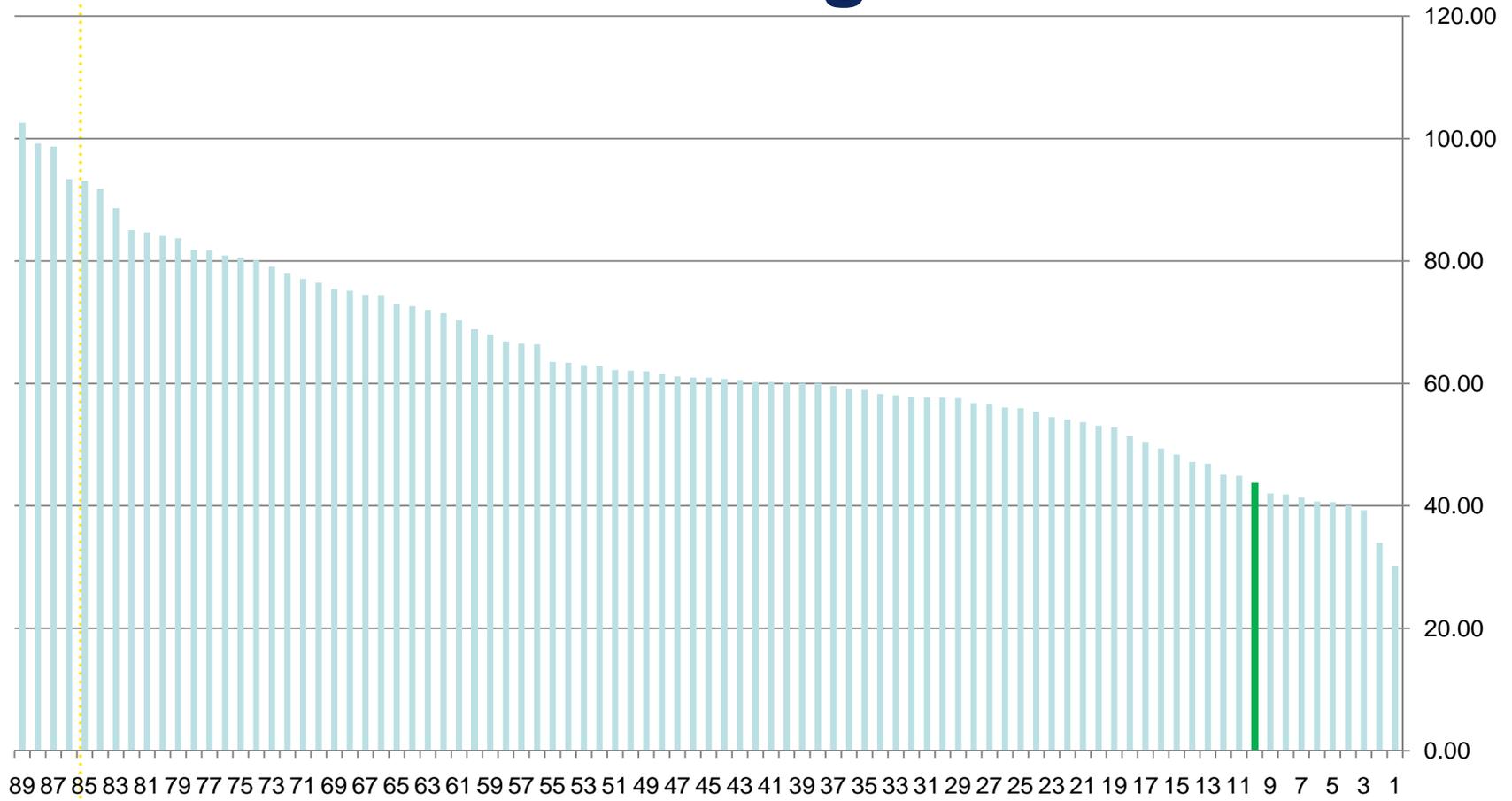
**3,768,000 KWh Saved**



**2.7 metric tons of greenhouse gas**



# Building Portfolio – Mississinewa High School





# Energy Index

Low Efficiency (80,000 BTU +)	Moderate (60,000 – 79,999)	High Efficiency (> 59,999)
		49,905



**Mississinewa High School**

Electric Usage reduced by 50%

2 Year Utility Bill Savings of \$202,095



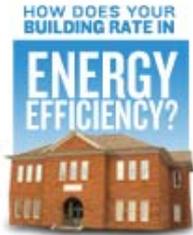
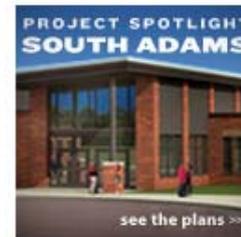
[\[watch video\]](#)

When you realize it's  
**more about**  
seeing kids live up to  
*their potential*

1 2 3 4

### Welcome to Performance Services!

We are a Design-Build engineering and construction company specializing in creating optimal learning and working environments. By valuing relationships and workmanship over change orders and shortcuts, Performance Services strives to earn a 100% Customer Satisfaction rating.



[Click here to find out!](#)



HOW DOES YOUR  
BUILDING RATE IN

# ENERGY EFFICIENCY?

## 4. YOUR ENERGY EFFICIENCY ESTIMATE



Your current energy usage is: **High Efficiency**

Energy Use Index: **49,905** Btu/ft<sup>2</sup>/yr

Estimated Annual Savings: **\$0.00**

Estimated 10-Year Savings: **\$0.00**

 [Contact Us](#)

 [Print your Results](#)

The Energy Use Index is given in British Thermal Units per square foot per year (Btu/ft<sup>2</sup>/yr) and the range of efficiency calculation is based on Performance Services' portfolio of customer accounts and the actual and planned energy usage performance achieved.

For comparison purposes, Performance Services considers an Elementary School building with an Energy Use Index greater than 70,000 Btu/ft<sup>2</sup>/yr to be low efficiency and with good potential for 20% or more savings. A Middle or High School building with an Energy Use Index greater than 80,000 Btu/ft<sup>2</sup>/yr is also considered to be low efficiency and with good potential for energy savings. This is based on the actual performance of our buildings portfolio.

**Disclaimer:** Energy savings are estimates only and results will vary based on the dynamics of your building. If you have an all-electric building or a building that burns fuel oil, please contact us for an estimate.





**Mississinewa Community School  
Corporation**

Gas City, Indiana

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***Guaranteed Savings Results***

Year 2 – Quarter 4 Review

August 1, 2007 – July 31, 2008

*Phase 2*

Mississinewa High School

## Annual Guaranteed Savings Report Summary

*Year 2 - Quarter 4 (August 1, 2007 - July 31, 2008)*

Description	Guaranteed Savings	Actual Savings	Net Difference
<b>ENERGY SAVINGS</b>			
<b>Mississinewa High School</b>			
* Electric	111,389	150,769	39,381
* Gas	(45,448)	(56,910)	(11,462)
	<b>65,941</b>	<b>93,859</b>	<b>27,918</b>
<b>OPERATIONAL SAVINGS</b>			
<b>Mississinewa High School</b>			
* HVAC Renovation	281,781	281,781	-
* Lighting Replacement	58,689	58,689	-
* Water Heater Replacement	4,394	4,394	-
	<b>344,864</b>	<b>344,864</b>	-
<b>SAVINGS</b>	<b>410,805</b>	<b>438,723</b>	<b>27,918</b>

**NOTE:**

- The operational savings are expenditures that the School Corporation would have incurred had they not addressed their repair and replacement needs under this contract. Operational savings are impossible to accurately track after the equipment is replaced because it is impossible to know when the equipment would have failed or required repairs. Therefore, the operational savings were agreed to as part of the contract and have been averaged over the ten year term. This is why the actual and guaranteed operational savings are the same value.

School Corporation: **Mississinewa Community School Corporation**

Buildings: **Weather Adjusted Utility Bill Savings**  
(Excludes all adjustment less weather)

**Mississinewa High School**

**ELECTRIC**

Timeframe			Utility: Gas City Utilities Meter # 101-37800-13								
Base Year	Current Year	Month	Current Year			Base Year			Savings		
			Usage (kWh)	Rate (\$ / kWh)	Raw Costs (\$)	Raw Usage (kWh)	Rate (\$ / kWh)	Raw Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Savings (\$)
2004	2007	Aug	198,000	\$ 0.0679	\$ 13,438	236,400	\$ 0.0568	\$ 13,422	38,400	\$ 0.0679	\$ 2,606
2004	2007	Sep	183,600	\$ 0.0681	\$ 12,496	289,200	\$ 0.0568	\$ 16,420	105,600	\$ 0.0681	\$ 7,187
2004	2007	Oct	148,800	\$ 0.0679	\$ 10,100	265,200	\$ 0.0568	\$ 15,057	116,400	\$ 0.0679	\$ 7,901
2004	2007	Nov	135,600	\$ 0.0671	\$ 9,103	331,200	\$ 0.0568	\$ 18,805	195,600	\$ 0.0671	\$ 13,131
2004	2007	Dec	169,200	\$ 0.0670	\$ 11,338	464,400	\$ 0.0568	\$ 26,370	295,200	\$ 0.0670	\$ 19,781
2003	2008	Jan	204,000	\$ 0.0742	\$ 15,145	427,200	\$ 0.0568	\$ 24,258	223,200	\$ 0.0742	\$ 16,570
2003	2008	Feb	194,400	\$ 0.0694	\$ 13,493	453,600	\$ 0.0568	\$ 25,757	259,200	\$ 0.0694	\$ 17,991
2004	2008	Mar	157,200	\$ 0.0694	\$ 10,905	330,000	\$ 0.0568	\$ 18,738	172,800	\$ 0.0694	\$ 11,987
2004	2008	Apr	157,200	\$ 0.0758	\$ 11,910	280,800	\$ 0.0568	\$ 15,945	123,600	\$ 0.0758	\$ 9,364
2004	2008	May	124,800	\$ 0.0776	\$ 9,688	285,600	\$ 0.0568	\$ 16,217	160,800	\$ 0.0776	\$ 12,483
2004	2008	Jun	116,400	\$ 0.0702	\$ 8,170	192,000	\$ 0.0568	\$ 10,901	75,600	\$ 0.0702	\$ 5,307
2004	2008	Jul	127,200	\$ 0.0736	\$ 9,367	182,400	\$ 0.0568	\$ 10,356	55,200	\$ 0.0736	\$ 3,005
<b>Total</b>			<b>1,916,400</b>	<b>\$ 0.0705</b>	<b>\$ 135,155</b>	<b>3,738,000</b>	<b>\$ 0.0568</b>	<b>\$ 212,246</b>	<b>1,821,600</b>	<b>\$ 0.0705</b>	<b>128,374</b>

\$ 0.0705

**GAS**

Timeframe			Utility: Vectren Meter # N1084283												
Base Year	Current Year	Month	Current Year				Base Year				Savings				
			Weather (HDD)	Usage (Therms)	Rate (\$ / Therm)	Raw Costs (\$)	Weather (HDD)	Raw Usage (Therms)	Rate (\$ / Therm)	Raw Costs (\$)	Weather Adjustment	Adj. Usage (Therms)	Usage (Therms)	Rate (\$ / Therm)	Savings (\$)
2004	2007	Aug	-	233	\$ 1.2820	\$ 299	20	144	\$ 1.0305	\$ 148	1.00	144	(89)	\$ 1.2820	\$ (115)
2004	2007	Sep	19	370	\$ 1.0838	\$ 401	19	174	\$ 0.9840	\$ 171	1.00	174	(196)	\$ 1.0838	\$ (212)
2004	2006	Oct	179	507	\$ 0.9912	\$ 503	280	184	\$ 1.0680	\$ 197	0.64	190	(317)	\$ 1.0680	\$ (339)
2004	2006	Nov	639	1,333	\$ 0.9689	\$ 1,292	538	188	\$ 1.1779	\$ 221	1.19	186	(1,148)	\$ 1.1779	\$ (1,352)
2004	2006	Dec	952	3,362	\$ 0.9540	\$ 3,208	1,024	247	\$ 0.8609	\$ 213	0.93	244	(3,119)	\$ 0.9540	\$ (2,975)
2003	2008	Jan	1,118	1,276	\$ 1.0424	\$ 1,330	1,335	267	\$ 0.8921	\$ 238	0.84	256	(1,020)	\$ 1.0424	\$ (1,063)
2003	2008	Feb	1,015	12,103	\$ 0.9684	\$ 11,720	1,105	240	\$ 0.9140	\$ 219	0.92	237	(11,866)	\$ 0.9684	\$ (11,491)
2004	2008	Mar	755	4,338	\$ 1.0150	\$ 4,403	604	144	\$ 0.9465	\$ 136	1.25	130	(4,208)	\$ 1.0150	\$ (4,271)
2004	2008	Apr	342	2,416	\$ 1.1226	\$ 2,713	469	227	\$ 0.9153	\$ 208	0.73	220	(2,197)	\$ 1.1226	\$ (2,466)
2004	2008	May	179	944	\$ 1.2611	\$ 1,191	77	164	\$ 0.9795	\$ 161	2.32	116	(828)	\$ 1.2611	\$ (1,044)
2004	2008	Jun	-	431	\$ 1.7621	\$ 759	8	78	\$ 1.1042	\$ 86	1.00	78	(353)	\$ 1.7621	\$ (621)
2004	2008	Jul	-	339	\$ 1.8068	\$ 613	3	151	\$ 1.0142	\$ 153	1.00	151	(188)	\$ 1.8068	\$ (340)
<b>Total</b>			<b>5,179</b>	<b>27,654</b>	<b>\$ 1.0281</b>	<b>28,431</b>	<b>5,443</b>	<b>2,208</b>	<b>\$ 0.9745</b>	<b>2,152</b>	<b>0.95</b>	<b>1,807</b>	<b>(25,529)</b>	<b>\$ 1.0298</b>	<b>(26,290)</b>

\$ 1.0281



# Performance Assurance Group

The mission of our group is to help schools operate their buildings in the most cost effective and environmentally sound manner possible.



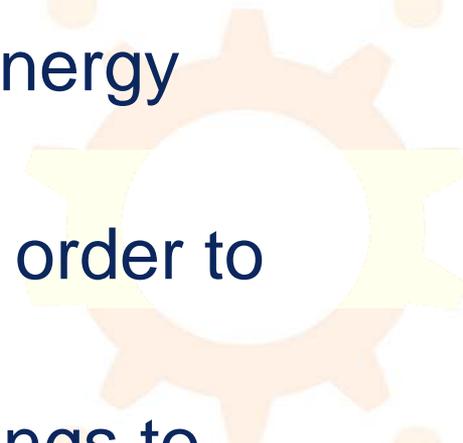
**PERFORMANCE ASSURANCE**



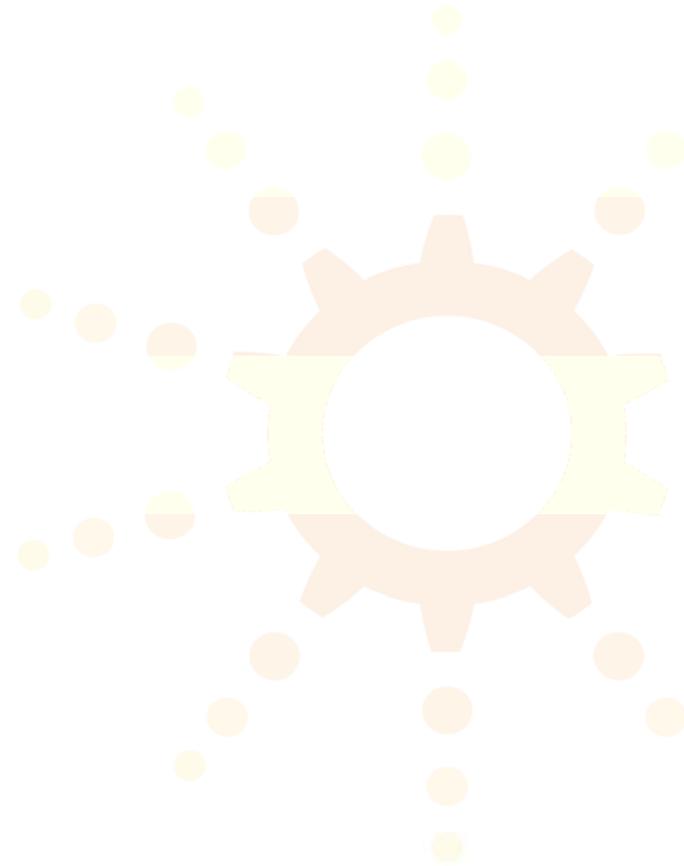
# Performance Services

## How we help:

- ✓ Find new ways to increase energy efficiency
- ✓ Help staff schedule usage in order to reduce operating costs
- ✓ Communicate monetary savings to taxpayers
- ✓ Quantify environmental and cost impact to the school and community



# Thank You





Mississinewa Community School  
Corporation  
Gas City, Indiana

***Guaranteed Savings Results***  
Year 2 – Quarter 4 Review  
August 1, 2007 – July 31, 2008

*Phase 2*  
Mississinewa High School

October 14, 2008



October 14, 2008

Jill Morpew  
Mississinewa Community School Corporation  
424 East South "A" Street  
Gas City, In 46933

RE: Year 2 – Quarter 4 Review

Dear Ms. Morpew:

We have enclosed the Year 2 – Quarter 4 Review for the Mississinewa Community School Corporation Guaranteed Energy Savings Contract Phase 2 for Mississinewa High School. This report covers the months of August 2007 through July 31, 2008.

Please call me should you wish to discuss this report after you have reviewed it.

Sincerely,

Shana Lopez  
Performance Assurance Analyst



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## OVERVIEW

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This Year 2 – Quarter 4 Guarantee Report contains the savings results for the period of time between August 1, 2007 and July 31, 2008. This report is intended to provide an update on the savings performance to date and help uncover potential operating problems.

### **ENERGY SAVINGS:**

Actual energy savings for the second guarantee year exceeded guaranteed energy savings by \$27,918 after adjusting for utility rate changes, operating schedule variations, and Owner overrides. Guaranteed energy savings for this period is \$65,941 with the actual energy savings being \$93,859. The Guarantee is based on a combination of measured, verified and calculated savings that are the most accurate methods of determining actual savings.

### **OPERATIONAL SAVINGS:**

Operational savings were estimated and agreed to up-front as part of the Guarantee. Therefore, the operational savings estimated as part of the Guarantee have been used in this Guarantee Report and will be used in each of the following Annual Guaranteed Reports.

### **LEARNING ENVIRONMENT:**

We have optimized the HVAC systems to provide consistent and appropriate comfort, humidity and indoor air quality levels. All temperatures are within 2 degrees F of setpoint (each teacher can adjust their room temperature setpoint from 70 F to 74 F). Humidity is being maintained at acceptable levels. Indoor air quality as measured by CO2 levels is maintained below 1000 PPM. Overall, the HVAC systems are providing your students a good learning environment.

### **NEXT REPORT:**

We will provide the Year 3 – Quarter 1 Guarantee Report December 2008. Please feel free to contact us at 888-390-2700 with any questions or comments.

### **CONTACTS:**

- Shana Lopez, Performance Assurance Analyst
- Rich Bradley, Senior Project Manager
- Chris Rainey, Engineering Manager
- Scott Morris, Operations Vice President
- Tim Thoman, President
- Office: 888-390-2700



<b>Annual Guaranteed Savings Report Summary</b> <i>Year 2 - Quarter 4 (August 1, 2007 - July 31, 2008)</i>			
Description	Guaranteed Savings	Actual Savings	Net Difference
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	<b>344,864</b>	<b>344,864</b>	<b>-</b>
<b>SAVINGS</b>	<b>410,805</b>	<b>438,723</b>	<b>27,918</b>

**NOTE:**

- 1 The operational savings are expenditures that the School Corporation would have incurred had they not addressed their repair and replacement needs under this contract. Operational savings are impossible to accurately track after the equipment is replaced because it is impossible to know when the equipment would have failed or required repairs. Therefore, the operational savings were agreed to as part of the contract and have been averaged over the ten year term. This is why the actual and guaranteed operational savings are the same value.



<b>Utility Bill Comparison</b> <i>Year 2 - Quarter 4 (August 1, 2007 - July 31, 2008)</i>				
Description	Utility Bill Savings	Increased Fresh Air & Air-conditioning Adjustments	Owner Override Impact	Anticipated Utility Bill Change
<b>ENERGY SAVINGS</b>				
<b>Mississinewa High School</b>				
* Electric (weather adjusted)	128,374	9,156	3,196	140,725
* Gas (weather adjusted)	(26,290)	-		(26,290)
<b>SAVINGS</b>	<b>102,084</b>	<b>9,156</b>	<b>3,196</b>	<b>114,435</b>

**NOTE:**

1

Actual savings are calculated as defined in the Performance Guarantee Agreement, not based on raw utility data. Raw utility data is not used to measure actual energy savings because it is inaccurate and very time consuming. However, we feel it is important to compare raw utility data to the actual savings in the first year as a cross check. Therefore, we have provided raw utility data with this report. After adjusting for utility rate changes, weather, increased fresh air, air-conditioning additional areas and owner overrides the raw utility data corresponds to within 24% or \$20,924 of the actual savings.