Energy Use/ Buildings & Grounds Update

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Total Utility Costs



Energy Star Label



- Energy Performance Scale Assesses How Efficiently Buildings Use Energy Relative to Similar Buildings Nationwide
- 1 to 100 Scale
- 75 or Higher is Energy Star
- Label is Prior 12 Months Usage
- *Measures Usage, Not Expense
- Measures Electricity (kilo watts) and Natural Gas (Therms)

Energy Star 2014 1 – 100, 75 + is Energy Star Labeled

• Barrie Elementary

- In 2007: 75
- Currently: 90
- Actual \$45,602; if No Improvements \$54,723
 97% of 2014 Cost is Electric
- Luther Elementary
 - Currently: 64
 - Actual \$102,457
 - If Rating of 80, \$82,000



Energy Star 2014 1 – 100, 75 + is Energy Star Labeled

• Purdy Elementary:

- Currently: 91
- Actual \$73,930
- 98% Electric

• Rockwell Elementary:

- Currently: 91
- 2009: 88
- If 2014 was 88, expect additional \$1,300 in energy expense



Energy Star 2014 1 – 100, 75 + is Energy Star Labeled

Middle School:
Currently: 80
Actual: \$183,327
90 % Costs Electric
High School:
Actual: 75
Actual: \$559,531



• If Energy Star Rating of 80, \$530,000 in 2014



How Much Do We Pay?

• Electric and Gas Cost per Square Foot

- Purdy \$0.88
- Barrie \$ 0.93
- MS \$0.99
- Rockwell \$ 1.00
- Luther \$1.24
- HS \$2.14

Energy Observations

- HS, Luther and Middle School use Too Much Electricity
- Geothermal Lowers Cost of Gas, but Raises Cost of Electricity
 - Barrie Electric Cost in 2007 was \$29,000
 - Barrie Electric Cost in 2008 was \$35,000

Energy Observations

• Many Areas are Over Lit

• Luther Library 120 Candle Watt, 40 is Recommended



Rockwell Barrie Average sq ft 40200 49172 kBtu 1401341.8 1162809 kBtu/sq ft 28.93 70.3 28.50 kWh 358536 305022 kWh/ sq ft 6.6 7.29 7.59 Btu 99976.13 36977171.07 HDD 8388 8388 Btu/sq ft/HDD 6.8 0.00 0.11

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Partnering with Wisconsin utilities

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Purdy Luther Average sq ft 84400 82600 5410599.7 1944032.7 kBtu kBtu/sq ft 23.54 63.6 64.11 556007.9 kWh 548998.6 kWh/sqft 6.65 7.3 6.59 3512661292 110714565 Btu 8388 8388 HDD Btu/sq ft/HDD 5.6 4.96 0.16

FAMS Average sq ft 185500 kBtu 7463155.9 kBtu/sq ft 40.23 82.1 kWh 1431508 kWh/ sq ft 7.5 7.72 Btu 2324565970 HDD 8388 Btu/sq ft/HDD 7.8 1.49

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FAHS Average sq ft 261700 kBtu 21971934 kBtu/sq ft 83.96 85.2 kWh 1668912 kWh/ sq ft 6.38 8.7 Btu 16074561905 HDD 8388 Btu/sq ft/HDD 6.6 7.32

Future Energy Projects

• Focus on Lowering Electric Usage / Cost

- Get Demand Charge "Under Control"
 - Over 50% of Cost at Some Schools are Demand Charge
 - Highest Average kW in 15 min period
 - Working with ESI to Identify Times and Units
 Environmental Systems Inc.
 - Provide Analysis of Energy Usage Times and Equipment

Future Energy Projects Cont.

• Continue to Retrofit all Exterior Lights with

LED



Future Energy Projects Cont. • Expand the use of Occupancy Sensors • Continue with Expansion of Solar PV



Future Energy Projects Cont.

Capture Daylight

- Solar Tubes in Large Spaces. ie, Gyms, Commons
- Sensors to turn off lights in bright spaces. ie, stairwells at High School



Future Energy Projects Cont.

- Modulate HVAC controls in large spaces based on occupancy
- Focus projects on payback and improve learning environments
- Upgrade Swimming Pool Filters and Chemical Feed System – Save on Water and Chemicals
- Expand Pool Solar Heat to Domestic Hot Water

First 7 Months

Positive Culture, Student Centered
Well Maintained Buildings
Very Clean Buildings
Review all Contracts / Vendors
Inconsistency

Chemicals
Building Products. ie, Flooring
Staff Duties per Building

Moving Forward

Continue to Learn / Evolve
Clear Direction for B & G staff
Job Descriptions
Consistent Duties
Clear Expectations

Moving Forward Cont.

Masonry Repair Barrie and Rockwell in 2015





Moving Forward Cont.

- Continue with Roof Replacements
- Implement Rating System for All Space
 - Develop Yearly Plans Off of Rating System
- Focus on Improving Positive Learning Environments
- Implement Electronic Work Order System
- Develop Detailed HS Exterior Plan
- Develop Safety Study With Recommendations
 B & G Google Site

Spring Projects

Tile Repair, Sink Replacements
Pool Locker Replacements
Girls & Boys – 75 Total Lockers
Galvanized
Plastic Tray Bottom





Thank You, Contact Info

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