

Energy Savings in Government Buildings

Ramsey County Library
Shoreview, MN
September 27, 2017



Metropolitan Energy Coalition

Hennepin County Metropolitan Airports Commission Metropolitan Council Ramsey County Sherburne County Washington County



Welcome

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Agenda

1. Case study of one facility and implications for future work in the county
2. Successes and mistakes
3. Q and A and open discussion to share your experience with low-cost/no-cost energy projects
4. Tour library
5. Lunch and informal conversations



Nickels and Dimes

Add Up to Dollars and Good Sense

Gary Mrachek, Clete Luberts,
Mary T’Kach

September 27, 2017

Results Three Years In

- Reduced energy use by 35%
- Reduced CO₂ by 46%
- Invested \$26,000; saved \$185,000
- Avoided cost of \$1,220,000 when normalized for weather, demand charges and pricing changes
- 2017 on track to be “flat-lined”



Law Enforcement Center

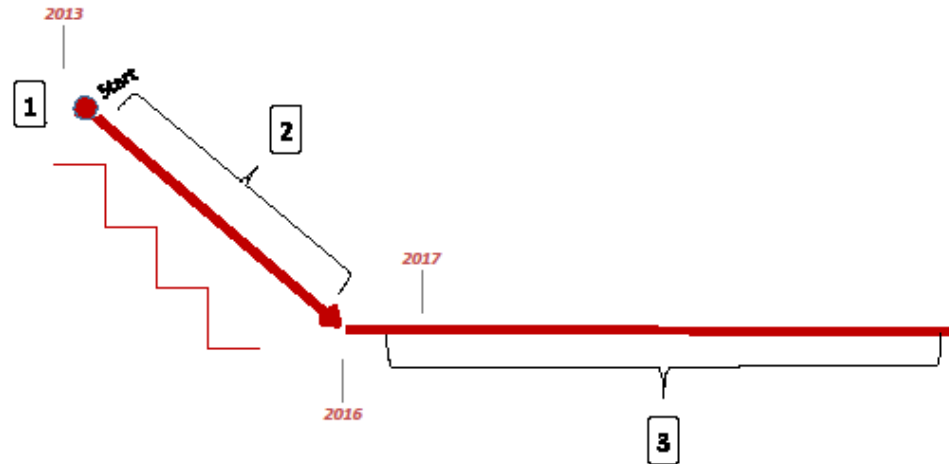
Saving “Nickels and Dimes” from re-focusing on operations

- 14 years old, runs 24/7 and 365
- The project ran for three years (2013-15) and continues today
- We thought this was a well run building





Property Management Energy Reduction Initiative



- 1** Benchmark/Starting Point
- Establish benchmark for each facility and property management department

*BAS = Building Automation System
PTO = Power Take Off*

- 2** Reduction Steps
- | | |
|--------------|--|
| 1 - 6 months | <ul style="list-style-type: none"> • Temperature Guidelines • BAS Optimization • Training |
|--------------|--|

- | | |
|---------------|--|
| 6 - 12 months | <ul style="list-style-type: none"> • Low and no cost changes • Expand PTO to all facilities • Energy Monitoring • Energy Reporting |
|---------------|--|

- | | |
|----------------|--|
| 12 - 24 months | <ul style="list-style-type: none"> • Real Time Data • Timeline will vary |
|----------------|--|

- 3** Sustain Reduction
- Energy Monitoring
 - Energy Reporting
 - Training
 - Low and no cost changes
 - Timeline will vary
 - Capital Investment

Results Without Capital Investments

- ✓ Commitment up front and get facility staff on board
 - ownership in the process
 - engage all team members with responsibilities and accountabilities
 - share the challenges, victories and defeats together
 - encourage recognition
 - ✓ Commitment to learning: room for failure and success
 - ✓ Understand how a building works (people, structure and mechanics)
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Results Without Capital Investments

- ✓ Changed facility management thinking and activities - No “set and forget”
 - ✓ Questioned every part of our control sequences
 - Temperature and humidity guidelines
 - Looked at BAS and what we do there
 - ✓ Created the culture where people see that “nickels and dimes” add up
 - ✓ Created optimization log
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- ✓ Rolling comparison – baseline should be a moving target
 - year to year - not 3, 5, or 10 year look back
- ✓ Find everything and then find more



Lessons Learned

- “Train to Sustain” and Accountability
 - On-going education and targeted technical training is key to helping staff do their jobs better.
 - Not everyone is ready for a 15 second interval report.
 - Reorganization of staff resources allowed us to create an Energy and Tech Team.
 - Communication with tenants is critical.
 - Monthly meeting all managers provide update.
 - Optimization log is a simple, useful tool.
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Summary

1. Sustained energy savings come from a focused approach to building operations.
 2. Keep data gathering and reporting as simple as possible.
 3. Change your thinking and change your staff's thinking as you refocus on operations.
 4. "Train to sustain."
 5. Commit to continuous improvement.
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Next three years

Employee education, engagement and buy-in

- Temperature guideline...policy
 - Plug loads
 - Facility staff are changing the environment of tenants – need to inform and educate tenants before-hand
 - Daytime cleaning
 - Importance of facility hours of operation
 - Space planning
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Summary and Group Discussion

What are you doing?
How are you doing it?
What are the challenges?
Successes?



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Slides at <http://www.mepec-mn.org>

Thank you.

Gary Mrachek, Clete Luberts,
Mary T’Kach
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THANK YOU.



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