



## Midwest Energy Group

*Identify. Design. Implement.*

Church Presentation: Energy Efficiency  
March 5th, 2011



## Midwest Energy Group:

- Provide energy efficiency services to public and private entities.
- Evaluate and recommend solutions resulting in positive cash flows.
- Design and retrofit new and existing buildings for energy optimization.
- Facilitate financing options, incentives and rebates



## Midwest Team Support:

- Allied Mechanical Services
  - 47 Million dollar mechanical contractor with over 34 years experience
- ControlNET
  - Energy management and controls contractor
- Engineering Plus (EPI)
  - Engineering team with LEED professionals and PE licenses in most Midwest states



## Valued Clients:



## What our approach means to our clients:

2010

- Federal Tax Incentives - \$395,000
- Utility Rebate Dollars - \$438,000
- Energy Cost Savings - \$696,000
- kWh Savings - 6,757,000 kWh



## What is Energy Management?

•A definition from energylens.com... "energy management is the process of monitoring, controlling, and conserving energy in a building or organization."

• Energy Management is the ultimate form of stewardship of both your finances and your energy consumption.

• Energy Management is a mindset shift from...

**"Re-active Panic" to a "Pro-active Plan"**



## Three ways to attack energy management...

1. Conservation – largely behavioral...
2. Efficiency – largely technical...
3. Renewable Energy – largely expensive...

Primary focus of today:

1. Conservation
2. Efficiency
3. Renewable Energy



## The Process: PHASE 1 – Understand the Basics

### STEP 1: Understanding your utility bill...

\* How to read a utility bill

HOLLAND BOARD OF PUBLIC WORKS

HOLLAND, MI 49423-5342

30433650000007942654

Member Number	Member Name	Member Address	Member City	Member State	Member Zip	Member Phone	Member Email
0000001348	12473/2010	12473/2010	MI	49423	5342		
000001348	18/31/2010	18/31/2010	MI	49423	5342		
000001378	18/31/2010	18/31/2010	MI	49423	5342		
000192333	18/31/2010	18/31/2010	MI	49423	5342		

Usage History	Rate	Usage	Amount
10-10	1.00	100	100.00
11-10	1.00	100	100.00
12-10	1.00	100	100.00
01-11	1.00	100	100.00
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12-15	1.00	100	100.00
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11-29	1.00	100	100.00
12-29	1.00	100	100.00
01-30	1.0		



## The Process: PHASE 3 – Design a Plan

- **STEP 1** - Conduct a "Cost & Energy Analysis" on each opportunity, be it technological or behavioral.
  - All Cost & Energy Analysis' should include...
    - \$ amount project will cost to implement
    - Amount of kWh the project will save on a yearly basis
    - \$ amount project will save on a yearly basis
    - \$ amount of utility rebate dollars project will qualify for
    - Estimated pay back time period
- **STEP 2** - Create a "5 year Energy Goals" document for the church.
- **STEP 3** - Prioritize the opportunities for your church. (create a project checklist and timeline)
- **STEP 4** - Communicate your Goals and Plan with your congregation!



## The Process: PHASE 4 – Implement the Plan!

- Start at the top of your prioritized list and work your way down. When a project is finished, use the savings incurred to fund the next project! And so on, and so on, and so on... Use the "energy savings snowball" to your advantage!
- Remember to constantly evaluate and monitor how each of your systems are performing. It is so important for you and your congregation to KNOW that your plan is working and your goals are being achieved!



# WOW!

This is a lot of information, I need a break.

You've earned it, we will reconvene in 15 minutes... ☺



# Welcome Back!

Now that you have seen the process on paper, lets go through the process with two churches in town!

- Maple Ave. Ministries
- Central Ave. CRC



## Conservation Opportunities

Potential Conservation Opportunities:

- Temperature set-points



## Conservation Opportunities





## Conservation Opportunities

Potential Conservation Opportunities:

- Temperature set-points
- Lighting run times



## Conservation Opportunities



## Conservation Opportunities

Potential Conservation Opportunities:

- Temperature set-points
- Lighting run times
- Appliances



## Conservation Opportunities



## Conservation Opportunities

Potential Conservation Opportunities:

- Temperature set-points
- Lighting run times
- Appliances
- Pipe Insulation



## Conservation Opportunities





## Conservation Opportunities

### Potential Conservation Opportunities:

- Temperature set-points
- Lighting run times
- Appliances
- Pipe Insulation
- HVAC coasting
- Window seals
- Door seals
- Building penetrations
- Computer shutdown
- Boiler Tune-ups
- Roof-Top Tune-ups
- Etc.



## Efficiency Opportunities

### Potential Efficiency Opportunities:

- Lighting Systems
  - Indoor
  - Outdoor



## Efficiency Opportunities

### Indoor Lighting:



## Efficiency Opportunities

### Outdoor Lighting:



## Efficiency Opportunities

### Potential Efficiency Opportunities:

- Lighting Systems
- Mechanical Systems
  - Boilers
  - Air handlers
  - Controls



## Efficiency Opportunities

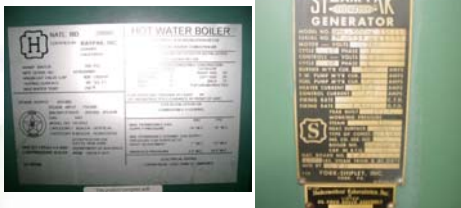
### Boiler/HW Systems:





## Efficiency Opportunities

Boiler/HW Systems:



## Efficiency Opportunities

Roof-Top Units/Controls:



## Efficiency Opportunities

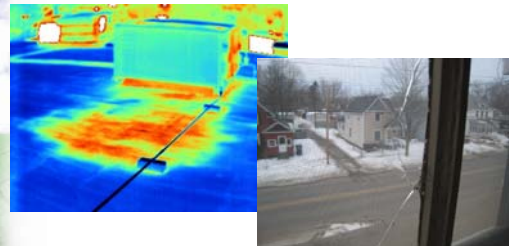
Potential Efficiency Opportunities:

- Lighting Systems
- Mechanical Systems
- Building Envelope
  - Windows
  - Roof Insulation
  - Wall Insulation



## Efficiency Opportunities

Building Envelope:



## Efficiency Opportunities

Potential Efficiency Opportunities:

- Lighting Systems
  - Indoor
  - Outdoor
- Mechanical Systems
  - Boilers
  - Air handlers
  - Controls
- Building Envelope
  - Windows
  - Roof Insulation
  - Wall Insulation
- Heat Recovery
  - Make-up Air
  - Boiler feed water
- New Systems
  - VAV vs. Constant Volume
  - Chillers vs. DX Cooling
  - Etc.



## How to Pay for Projects

- Utility Rebates
 

Beginning in 2009, the MPSC mandated the participation of utility companies in energy efficiency programs. Scheduled to continue until 2013.

  - Holland BPW
  - Semco Energy
  - Consumers Energy
  - DTE Energy



## How to Pay for Projects

- Other Financing Options
  - Performance Contract
  - Shared Savings Agreements
  - Short Term Lease Options
  - State/Federal Energy Grants



## Contact Information

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## Questions?

