“ENERGY CANNOT BE CREATED OR DESTROYED, IT CAN ONLY CHANGE FROM ONE FORM TO ANOTHER”

Albert Einstein
ENERGY COMES IN MANY DIFFERENT FORMS
THE ENERGY AUDIT

• WHAT COULD POSSIBLY HAPPEN WHEN PLANNING IS NOT CONSIDERED?
THE ENERGY AUDIT

- The Energy Audit strives to achieve a basic understanding of the dynamics of energy usage of its subject.
THERE ARE MANY WAYS TO QUANTIFY ENERGY

- BTU
- KWH
- KW
- THERMS
- HORSEPOWER

IN THE ENERGY AUDIT, THESE ARE THE MOST COMMON CONVERSIONS.
THE BRITISH THERMAL UNIT

MR BTU
THE COMMERCIAL ENERGY AUDIT CONSIDERS SYSTEMS WHICH CONSUME ENERGY
SYSTEMS INCLUDE
BUILDING ENVELOPE
HVAC SYSTEM-PEOPLE COMFORT
HOT WATER SYSTEM-DOMESTIC
LAUNDRY FACILITIES
LIGHTING
MOTORS
ENERGY CONSUMPTION IS STUDIED

ELECTRICAL USAGE

KILOWATT HOUR

MMBTU NATURAL GAS

MMBTU
ANNUAL TEMPERATURES ARE CONSIDERED

HEATING DEGREE DAYS

COOLING DEGREE DAYS
ESTIMATES OF WHERE THE ENERGY IS BEING CONSUMED

- Kitchen Equipment: 14%
- Compressors & Motors: 28%
- Interior Lighting: 10%
- Exterior Lighting: 25%
- Water Heaters: 23%
# RECOMMENDATIONS ARE PROVIDED

<table>
<thead>
<tr>
<th>RECOMMEND</th>
<th>Pg</th>
<th>EXISTING MMBTU USAGE</th>
<th>PROPOSED MMBTU USAGE</th>
<th>MMBTU SAVINGS</th>
<th>DOLLAR SAVINGS</th>
<th>COST</th>
<th>PAYBACK YEARS</th>
<th>EXPECTED LIFE CYCLE (YEARS)</th>
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<tr>
<td>WATER PUMP VFD</td>
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<td>73</td>
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<td>ROOF HVAC SYSTEMS</td>
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<td>BOILER REPLACEMENT</td>
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<td>DOMESTIC HOT WATER HEATING</td>
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<td>ADDENDA #1: REPLACE WALL AC UNITS</td>
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<td>51.2</td>
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<td>ADDENDA #2: ADD R-9.8 TO PERIMETER MECHANICAL</td>
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<td>73</td>
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PLAN OF ACTION IS RECOMMENDED TO OWNER/ MANAGER
BIDS ARE OBTAINED FROM CONTRACTORS
FUNDING SOURCES ARE SECURED

- PACE LOW INTEREST FINANCING
- OWNER INVESTMENT
- BANKER
- GRANTS
- TIF
- TAX CREDITS
- UTILITY REBATES
GOING TO WORK
Parkwood Place
Mountain Lake MN
Hospital Remodeled Into Multi Family
Atmospherically Vented Boilers
Condensing 95% Boiler Replacement
Atmospherically Vented Domestic Water Heaters
Domestic Water Heater Supplyed From The Boiler
Mechinical Room Insulated With 1 1/2” Non-Combustable Rigid Insulation
Variable-Speed Water Pump
Boiler Efficiency Exceeds The AFUE DOE Range Of Efficiency
1970s Rooftop Heating and Air Conditioning
Replaced Rooftops With High Efficiency Split System
Halls And Apartments Retrofit With LED Lighting
PROJECTS ARE COMPLETED

Energy Saving just ahead
What is PACE?

• *Financing tool* used to assist commercial and industrial businesses (including agri-business) with improvements to *existing* facilities that substantially increase energy efficiency.

• Costs for the improvements are paid back through a special assessment on their taxes.

• The improvements are considered a permanent fixture to the property and remain with the property through ownership changes.
PACE Program Objectives

- Increase energy efficiency
- Decrease energy demand
- Increase property value
- Promote job growth in the clean energy sector
- Gives businesses the ability to make capital improvements without up-front out-of-pocket expense
PACE Program Requirements

• Commercial or Industrial
• Legal owner of the property.
• Located in the RMEB 18 county Area
• Current on all mortgages.
• Not in bankruptcy
• No federal or state income liens.
• Energy Audit by approved energy auditor.
• Must show significant cost savings.
PACE Loan Details

• PACE Loans- Minimum $5,000, Maximum $100,000 (must not exceed 20% of the assessed property value)
• Maximum of 20 years to repay loan. Loan term must not exceed estimated life expectancy of improvement
• Interest rate determined by RMEB PACE Committee
Contact information

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