APPLEBLOSSOM ENERGY
We make energy efficiency work.

800-606-1900 / 704-784-1000
www.abinsulators.com
Core Services

- Whole-House Energy Efficiency Retrofits
  - Single-family homes
  - Multi-dwelling units
  - Office buildings

- Certified BPI Energy Auditing
  - Reduce Energy Consumption and Energy Costs

- Blown Cellulose Insulation
  - And other thermal and radiant barrier materials

- Professional Job Training
  - For energy auditors and energy raters

- RESNET (HERS) & Energy Star Provider
  - For energy efficiency in new construction

- Installation of High Efficiency HVAC Systems and controls
What is an energy audit?

1. Inspection, testing, and measuring to choose which Energy Efficiency Retrofits are practical and cost effective.
2. Measurement, and verification of energy consumption.
Energy Audit Details

• Identify the type, size, condition, and rate of energy consumption for each major energy using device.

• Recommend appropriate energy conservation and maintenance procedures.

• Estimate cost for E.E. Retrofits
  – Labor
  – Materials
Energy Audit Details

- Computer modeling of the project, and the expected savings from the E.E. Retrofits.
- Identify potential health and safety problems and issues.
- Address human use habits, and behavior that impacts energy consumption and cost.
- Provide detailed report of audit conclusions, and recommendations and counter-measures, along with ROI.
For Full Service Hotels.

- A 10% reduction in energy cost for the average full service hotel is equal to increasing the Average Daily Rate by 2.6%, and increasing occupancy rate by 4.3%.

Per the US DOE and Energy Star
For Limited Service Hotels

• For the average limited service hotel, a 10% reduction in energy cost is equivalent to increasing Average Daily Rate by 1%, and increasing occupancy rate by 2.4%.

Per the US DOE and Energy Star
As a Baseline...

Energy Consumption in a Typical Home

- Heating and Cooling: 49%
- Water Heater: 13%
- Refrigerator: 5%
- Dishwasher: 2%
- Clothes Washer & Dryer: 6%
- Lighting: 10%
- Electronics: 7%
- Other*: 8%
Pre Audit Work and Client Interview

• Collecting one to two years of fuel-bills.
• Obtaining the heated square footage of the structure.
• Measure electrical loads
  Appliances, lighting, plug-loads
  Heating & cooling
• Reading a utility fuel bill history (1-2 years) is necessary to determine the heating and cooling consumption and determine the base-load.
Some Key Terms

• Base Load – Estimate of fuel consumption that does not include cooling or heating

• Shoulder Months – Fall and Spring months where little heating or cooling energy is used
Some Key Terms

• Degree Day – The difference between 65 ° and the outdoor average temperature for a given day. 78° for cooling – Balance Points

• The difference would be in Heating Degree Days (HDD) if the average temperature is less than 65 degrees.
Typical Base-load Inspection Issues

- Measure refrigerator electrical consumption and check temperatures that the fridge and freezer are set to: 0-5° Freezer & 36-40° for Fridge
- Look for leaks at sinks and hot water line leaks that could cause excessive base load
- Check DWH set temp. Should be 120°
- Find out if any lighting is left on 24/7
- Look for large energy users such as Hot Tubs, fish tanks, etc.
Fuel Bill, 1400 sq’ House heating with N. Gas, Hot Water and Cooking also N. Gas. Asheville degree days = 4042

Av for June-Aug = 44. 44x12 = 528 for Baseload. Total Therm's for year = 1974 Therm's. 1974-528 = 1446 Therm’s for heating @ $1.20 per therm = $1735.

BTUs/Sq’/DD
1446 Therm’s x 100,000=144,600,000Btu’s divided by 1400sq’= 103,285 divided by 4042 DD = Energy Factor of 25
# 36 KW Per Year Fridge

## Evolution of Refrigerators and Freezers

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<tr>
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Refrigerators and freezers are evolving toward the limits of current compressor and insulation technology.
Perform a “Partial” Audit Online
Results...

Home Energy Saver - Making It Happen

Energy Bill for Homes in Arapahoe, North Carolina
Based on the zip code you entered, here is a comparison of the energy costs (in $/year) of an average home and an energy-efficient home in your area.

Average Home $1594
Efficient Home $1003

Potential Savings $591

See greenhouse gas emissions and energy consumption What should I do next?
Energy Management/Monitoring

The Energy Detective and Google

Bypassing the Smart Meter...

knowledge is power
http://www.google.org/powermeter/
The Energy Detective

How much will you save?

Did you know that most households pay thousands of dollars a year for electricity? Thousands! The Energy Detective (TED) can easily help you save 10-20% on your electric bill - hundreds of dollars - and the more you save, the more you help your neighbors, the community, and protect our environment.

How exactly does TED help? It's really a simple concept - if you can measure it, you can manage it. That's what TED is all about. An
Installing MTU and clip-on CTs
Typical Combination Circuit Breaker Panel
There are many energy management systems available in the market.
Thank you.
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