

## CONSERVATION AND ALTERNATIVE ENERGY GROUP

### TEMPLATE FOR RETROFITTING EXISTING BUILDINGS

For all of us the question is, "How can we best improve our energy use?"

The cheapest way to save energy is to **SIT IN THE DARK and FREEZE!**

But most of us can't do that for long. So, what is the proven method for saving energy?

59% OF ENERGY USE IN NORTHEAST HOMES IS FROM HEATING SPACES AND THE REMAINING USAGE IS FOR ELECTRICITY (25%) FOLLOWED BY DOMESTIC HOT WATER (16%).

#### No- or Low-Cost Ways of Saving Energy:

- ✓ Shower with a friend! Or take shorter showers & install low flow devices
- ✓ Let in the sun in the winter and keep the sun out in the summer
- ✓ Kill phantom loads (wasted electricity from plugged in devices)
- ✓ Shut off lights and change to Compact Fluorescents - a risk free return of over 2,000%! (See [blog.thesietch.org/2007/03/27/top-ten-low-cost-ways-to-reduce-energy-use-in-your-home](http://blog.thesietch.org/2007/03/27/top-ten-low-cost-ways-to-reduce-energy-use-in-your-home))
- ✓ Lower your hot water temperature, even by a couple degrees
- ✓ Lower your thermostat in winter and put on a sweater; use more fans and less AC in the summer; and/or install a programmable one
- ✓ Wash and rinse clothes with cold water
- ✓ Get your heating systems and appliances cleaned and serviced regularly
- ✓ Check out [www.kentdrive.org](http://www.kentdrive.org), the town of Kent's Energy website
- ✓ Also check out the following websites, all of which offer people strategies/incentives/rebates for alternative energy options:
  - [www.alliance-energy.net](http://www.alliance-energy.net), a multi-regional, turn-key Energy Services Company (ESCO) headquartered in Oxford, Connecticut
  - [www.ctcleanenergy.com](http://www.ctcleanenergy.com) CT Clean Energy Fund offers financial incentives and educational programs to encourage homeowners, companies, municipalities, and other institutions to support renewable energy
  - [www.oilfreenow](http://www.oilfreenow) whose goal is to supply their clients with comprehensive energy assessments, well designed, well installed geothermal heating systems, sensible solar products, wind power and emerging energy- saving technology
  - [www.dsireusa.org](http://www.dsireusa.org) DSIRE is a comprehensive source of information on state, local, utility and federal incentives and policies that promote renewable energy and energy efficiency, constantly updated.

#### People want RESULTS, a Return on Investment:

- ✓ Sealing the Building Shell can gain up to 30% energy savings
- ✓ Mechanical Equipment sizing and upgrades can give you 20% to 40% savings
- ✓ And then there's changing us human's wasteful habits - the best return of all: zero \$'s invested, 100% savings!

#### First ASSESS the Air Leakage, starting with the Attic, then Basement, then In-Between:

- ✓ Determine building leakage with a smoke puffer and, sometimes, a blower door: assess insulation, partition gaps, duct gaps, windows, doors - and wherever you see spider webs (because they = air flow!)
- ✓ Decide if the building is ok, too loose, or too tight
- ✓ Check the quality of construction
- ✓ Do a Combustion Safety Test
- ✓ Figure ventilation needs if building is too tight
- ✓ Estimate natural infiltration rates

- ✓ Use the CL&P offer of an energy audit for only \$75 ([cl-p.com/Home/SaveEnergy/Rebates.aspx](http://cl-p.com/Home/SaveEnergy/Rebates.aspx), the CL&P site for energy home services and rebates)
- ✓ See [www.bpi.org](http://www.bpi.org) a leading developer of technical standards for home performance and weatherization retrofit work that are recognized across North America.

### Why start with AIR SEALING?

- ✓ First Law of “Building Science”: Stuff moves from more to less (heat, air, water). See [www.buildingscience.com](http://www.buildingscience.com), the national organization at the cutting edge of innovative energy-saving construction, working with Habitat for Humanity.
- ✓ Air sealing stops drafts and reduces noise
- ✓ Helps eliminate pests like spiders, cluster flies and ladybugs
- ✓ Reduces the size requirements of the heating system
- ✓ Helps improving indoor air quality
- ✓ Helps the home maintain a healthy humidity level
- ✓ Dramatically increases comfort
- ✓ Usually a good bang for the buck investment-wise
- ✓ Helps pay for less profitable measures
- ✓ [www.goodlifeenergysavers.com](http://www.goodlifeenergysavers.com) offers effective retrofit insulation solutions, providing added comfort, savings, and energy efficiency.
- ✓ [www.spraytechfoaminsulation.com](http://www.spraytechfoaminsulation.com) is a Connecticut based company with over 40 years of experience in the residential and commercial insulation

### Then ASSESS the Systems:

- ✓ **Test for spillage, draft and Carbon Monoxide**
- ✓ Evaluate size of HVAC systems, and re-size appropriately, and add zones for greater control
- ✓ Ducts can be sealed, balanced, and provide great comfort
- ✓ Replace old appliances with Energy Star appliances
- ✓ [www.nesea.org](http://www.nesea.org) The Northeast Sustainable Energy Association is a resource committed to promoting sustainable energy solutions in the northeast
- ✓ [www.usgbc.org](http://www.usgbc.org) The U.S. Green Building Council is a non-profit community of leaders setting the standard for green buildings nation-wide through LEED

### Finally, Re-evaluate the Air Barrier:

- ✓ See if improvements can still be made
- ✓ Infrared Scanning can be a good tool here, but it can be expensive and depends on operator skill (See [cbpca.org/documents/Shell\\_Standards.pdf](http://cbpca.org/documents/Shell_Standards.pdf))

### Other Energy-Saving ideas:

- ✓ Plant deciduous trees south of the building to let winter sun in and keep summer sun out
- ✓ Add removable storm windows over existing, rather than replacing all older windows with new - return on investment for new windows can be surprisingly long
- ✓ Collect rain runoff from downspouts into barrels to use for garden watering
- ✓ Decrease the amount of lawn, which sucks up huge amounts of energy with mowing, watering, & fertilizing, and replace it with ground-covers that self-propagate and require little upkeep
- ✓ [www.greendepot.com](http://www.greendepot.com) A source for environmentally friendly products for any building, both construction, design and maintenance
- ✓ [www.greencourage.com](http://www.greencourage.com) specializes in bringing stylish, sustainable & smart product choices for today's home
- ✓ [www.solarconnecticut.org](http://www.solarconnecticut.org) is a non-profit whose goal is to inform Connecticut's citizens about solar power

THERE ARE MORE IDEAS WHERE THESE CAME FROM, SO . . . STAY TUNED!