

Conservation Commission/Energy Committee
Energy Tips Handout for Building Permits
Draft - Edited 12/11/09

**Ideas and Resources for Saving Energy from the Center Harbor
Energy Committee (CHEC)**

Congratulations on your building project. Whether it's new construction or renovations, now is the time to think about energy saving improvements. We've listed some ideas on saving energy, most of which you can do without adding any significant cost to your project. In addition to these ideas, you'll find a list of resources for more information. As you consider your options keep in mind that a small investment in energy savings today will save you money every year in the future. Bottom line, saving energy is a function of how you build and how you behave; we hope these ideas will help you discover some new ways to save yourself money.

Heating & Cooling. In general, please consider the following:

- Make sure the heating and cooling equipment is properly sized for the home.
- Install programmable thermostats.
- Consider advanced or alternative heating systems.
- Install heat resistant radiator reflectors between the exterior walls and the radiators.
- Install a Heat Recovery Ventilation System (HRV).
- Install sealed glass doors on fireplaces with outside combustion air to the firebox.

Insulation and Caulking. More than half of the energy used for heating is lost through uninsulated walls, floors, ceilings and attics and through gaps around windows, doors, pipes and conduit.

- At least R-20 walls, R-49 ceilings, R-19 foundations, R-10 concrete slab.
- Insulate and weather-strip attic hatches and access doors to unheated areas.
- Make sure insulation is installed properly. Neatly cut around all obstructions, split around wiring and have 100% contact with all framing.
- Caulk and weather strip all doors and windows.
- Caulk and seal air leaks where plumbing, ducts or electrical wires penetrate the exterior walls, floors and ceilings.
- Install foam insulating pads inside receptacle and switch plate covers

Lighting. Lighting accounts for about 15 percent of a typical residential utility bill. Plan your lighting carefully. Electric lighting also adds extra heat to a space that must be cooled by air conditioning in the summer.

- Try not to install recessed lighting in areas with insulation (thermal barrier).
- Under-the-counter fluorescent lights in the kitchen deliver great energy savings.
- Install dimmer switches to save energy and extend the life of light bulbs
- Install low-voltage lighting for outside illumination.
- For outdoor security lights, install lights with motion detectors so they only come on when needed.

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Water Heating. Water heating accounts for as much as 20 percent of your utility bill.

- Install an energy efficient, well-insulated hot water heater tank that is properly sized for the building. For intermittently used buildings consider a demand water heater.
- Design location of the water heater to reduce pipe runs as much as possible.
- Install pre-formed foam pipe insulation on hot water pipes.
- Install water saving showerheads and aerators.
- Consider a solar hot water system.
- Consider installing a second water holding tank for water to reach room temperature before entering the hot water heater.

Windows. 10 to 25 percent of your central heat is lost through the windows.

- Select windows that are gas filled and have low-emissivity (low-e) coatings on the glass to reduce heat loss resulting in a U-Factor of .35 or less.
- Perimeter of windows and doors (between framing) should be sealed with low expansion foam.
- Passive solar design can be very effective for reducing heating and cooling costs:
 - Orient the main living area of your home to face south to make the most of passive solar heating in the winter.
 - When designing a new home or remodeling an existing one, place large insulated windows on the south walls with a heat-absorbing slab, to keep your home warm in the winter.
 - Design protective overhangs on the west walls to reduce cooling costs in the summer.

Think Green. Use recycled or salvaged products and engineered composite materials. Use low VOC paints, locally grown wood materials, low emissions carpet/flooring/wallpaper/adhesives. Recycle construction waste. Consider prefabricated components. Practice minimal framing techniques. Disturb as little of the building site as possible and landscape with local plantings.

Getting started. Sign up for NHSAVES Energy Star Homes Program – includes consultation with a certified energy professional (free) and Utility Rebates.

Websites of interest:

www.RealityCHEC.org

www1.eere.energy.gov/consumer/tips

www.NHSAVES.com

www.nhec.com

www.nh.gov/safety/boardsandcommissions/bldgcode/nhstatebldgcode.html

www.energysavers.gov

www.reusablebags.com

www.energystar.gov