

Greening Your Home Improvement

This information is part of a series of tip sheets created by Booz Allen Hamilton to encourage employee volunteers to incorporate sustainable practices and materials into their Rebuilding Together projects.

There are many steps you can take to reduce energy consumption and green your home in the process of renovating and redecorating. Sometimes the upfront costs might be higher than the non-green alternative, but the medium- to long-term cost savings can be significant. Perhaps just as valuable are the positive benefits to your local and global environments.

Lighting

- Choose compact fluorescent light bulbs (CFLs) or Light Emitting Diodes (LED) bulbs instead of energy-consuming incandescent lights
- Install occupancy sensors that turn on lights when someone enters a room and turn them off when he or she leaves
- Reduce the need for artificial lights by taking advantage of opportunities for south- and north-facing windows. South-facing windows allow most winter sunlight into the home, but little direct sun during the summer. North-facing windows admit relatively even natural light, producing little glare and almost no unwanted summer heat gain

Plumbing

- Conserve water by installing water-saving low-flow toilets, faucets, and shower heads
- Install a water system that separates white, grey, and black water so that the grey water can be re-used to irrigate plants, gardens, and lawns
- Install dual flush toilets. These toilets offer half flush and full flush options and can reduce water usage by up to 67%
- Install an on-demand (tankless or instantaneous) water heater. They provide hot water only as it is needed and don't produce the standby energy losses associated with storage water heaters

Appliances and Home Electronics

- Install energy-efficient ENERGY STAR household appliances and electronics
- High performance (HP) washing machines use an accelerated spin cycle that extracts more water from clothes, requiring less drying time and less energy
- HP dishwashers use up to 25% less than the federal minimum standard for energy consumption
- HP refrigerators and freezers use 40% less energy than conventional models that were sold 10 years ago
- There are no ENERGY STAR ratings for ranges, ovens, and cooktops, but some are better than others. Induction cooktops, for example, are very efficient and highly responsive

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Insulation and Air Sealing

- Install radiant barrier, blow-in attic insulation, and zinc strips to improve the energy efficiency and longevity of your roof
- Install energy-efficient windows with gas barriers
- Install air barriers to prevent random air movement through building cavities, which can account for 30% or more of a home's heating and cooling costs
- Use weatherstripping or caulking to seal air leaks around movable joints, such as windows or doors
- Insulate plumbing to save on energy costs and water bills, as the water maintains a more constant temperature in the pipe

Flooring

Install 'green' flooring. Options include scored/stained concrete, sustainable materials like cork or bamboo, and recycled material floorings. Make sure that the bamboo is Forest Stewardship Council (FSC) certified and that the bamboo and cork have a low VOC finish

Heating and Cooling

- Install a programmable thermostat that runs at temperatures that heat and cool only when needed
- Install ceiling fans
- Install storm doors and windows

Coatings and Adhesives

- Use low- or no-Volatile Organic Compound (VOC) paints, adhesives and caulks, and stains and sealants to improve air quality and protect your health
- Install reflective exterior roof coatings to reflect and dissipate radiant heat, stopping it from entering the building
- Install reflective exterior wall coatings, which can reduce exterior wall temperatures by as much as forty degrees, allowing interiors to stay cooler and reduce energy costs

Landscaping

- Plant trees to provide shade and wind protection for your house
- Use native plantings