

Greening Your Home:

A Guide to Living Sustainably in Tulsa



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Thank you for downloading this packet. Volunteers of the Sustainability Crew of Tulsa's Young Professionals compiled this information to create an easy to read summary of the wide range of ways you can create a more environmentally friendly household. While there are many "top 10" lists on this topic online, we hope that this packet will serve as a more comprehensive guide through each of the options and any relevant local resources.

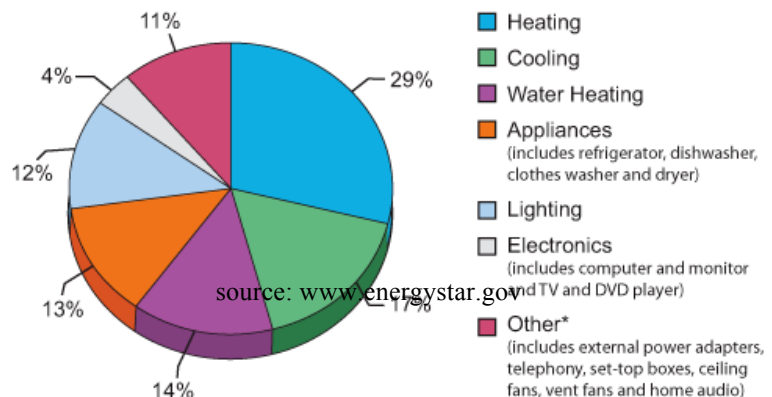
As I compiled our volunteers' research, several trends grew apparent. First, it is clear to me that there are many reasons to make more sustainable choices at home beyond saving my favorite furry wildlife. The Environmental Protection Agency estimates that indoor air is, on average, ten times more polluted than outdoor air. Considering all of the chemicals used to manufacture my Ikea furniture and the variety of oven cleaners, roach killer, and other bottles and cans under my sink, that statistic seems less surprising. Second, time and again you will see in the following pages that the market for a given sustainable product or service has grown exponentially over the last few years. I have been incredibly impressed by the strides that have been made to improve the attractiveness and functionality of all manner of more efficient home appliances, light bulbs, showerheads, and other products. There are references in this packet to many green products and services available here in Tulsa, but if you need further recommendations or are interested in the sheer breadth of local sustainable businesses or organizations then I encourage you to pick up a copy of Sustainable Tulsa's *Green Directory*.

My third conclusion from this research is that while the volume of potential sustainable actions and choices can be overwhelming, there are still rules of thumb that can guide you to a solid sustainable choice in most situations. You might remember "Reduce, then reuse, then recycle" from school. Within our research on home sustainability, the rules have boiled down to "use what you have more efficiently, then buy used, then buy a new green model, then default to the traditional model."

If you are interested in a more comprehensive analysis of where you should start, consider participating in PSO's Residential Solutions Program. At www.psoksaves.com you can find and hire a participating contractor to do a low-cost inspection of your house and identify cost effective efficiency opportunities. You are then eligible for up to \$1,500 in cash incentives for qualified home efficiency improvements from PSO.

Where Does My Money Go?

Annual Energy Bill for a typical Single Family Home is approximately \$2,200.



I hope that you find this guide helpful in your efforts to live more sustainably. We have geared our information towards homeowners of existing buildings, but a significant portion of the information will be applicable to renters as well. Please let us know if you think we need to improve or correct a section, or if you learn of a great new local resource that we should include.

Sustainably,
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Crew Leader, Sustainability Crew

Tulsa's Young Professionals

Tulsa's Young Professionals is the nation's leading young professionals group exceeding 7,000+ diverse members working together to showcase Tulsa as a great place to spend your weekdays, weeknights and weekends. TYPros provides its members with opportunities to build relationships with local community, business and government leaders and gives a voice to YPs of all professions. You can learn more and get involved at www.typros.org.

The Sustainability Crew

TYPros projects are organized by nine work crews. The Sustainability Crew promotes sustainable best practices within TYPros, the local business community, and our legislative agenda. For TYPros, sustainability means balancing the need for a healthy living environment, a prosperous local economy, and a vibrant community. Each year we promote these principles through a variety of programs, including the annual Green Gala, lunch GreenSpeak lectures, and contributing to various TYPros projects--like our new sustainable business incubator, The Forge. The group meets monthly at a local bar or restaurant. To learn about our current projects and next meeting, email us at Claire@claireroby.com

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Lighting

Lighting accounts for 5 to 10 percent of the average electricity bill for an American home. Lower your bills and save energy by first using that electricity more efficiently.

- 1) The best light is free: capitalize on any available sunny windows by raising shades and positioning your desk or other furniture nearby.
- 2) Where you need additional light, consider whether task lighting would be sufficient. You can save electricity by lighting a small work or living space rather than lighting a whole room with overhead bulbs.
- 3) For those lights you do want to use, replace incandescent bulbs with fluorescent fixtures or compact fluorescent bulbs whenever possible. This technology has gotten significantly more attractive and durable over the last few years, and PSO offers coupons to purchase fluorescent bulbs at local stores. While opponents cite mercury gas in such bulbs, it is a small amount that can be disposed of easily. Take any burnt out but unbroken bulbs to your nearest Home Depot or Lowe's. If a bulb breaks, air out the room for 15 minutes then clean up normally. Be careful to air out the room the next few times you vacuum if the broken bulb lands on carpet.
- 4) For your most frequently used lights, consider investing in LED bulbs. While they have a higher upfront cost, they are extremely efficient and durable, plus they have less mercury in them.
- 5) Consider installing ceiling fans with your overhead lights to help move air around and keep your heating and cooling bills lower.

Whatever light bulbs you choose, dust them several times a year. This can make a surprising difference in the amount of usable light and becomes more important as your bulbs last longer.

Local Resources

You can buy efficient lighting fixtures and bulbs at any of your favorite home improvement stores, such as:

Midtown Hardware, 4311 East 31st Street

Home Depot, several locations

Lowe's, several locations

Websites

Rocky Mountain Institute's brief on efficient lighting options:

www.rmi.org/rmi/Library/2004-14_HEB2Lighting

Energy STAR for information on efficient lighting products:

www.energystar.gov

PSO for any available light bulb coupons:

www.psoklahoma.com/save/programs/https://www.psoklahoma.com/save/programs/

Walls

Changing the color or pattern on your walls is a great way to update a room, but the sheer number of square feet to be covered means that paints and wallpapers can have a significant impact on indoor air quality. The primary area of concern is that most modern wall coverings give off gasses called “volatile organic compounds” (VOCs) as they are being applied and then slowly over the course of their life. These gasses are not acutely toxic, but prolonged exposure within your home can have chronic effects on respiratory health and some of these chemicals are known as “likely carcinogens.” Select either more traditional all-natural wall coverings or the new formulations from major paint manufacturers to cut down on your family’s exposure.

- 1) When you plan to repaint a room, consider whether a traditional milk paint or white wash, or other all natural paint or stain, would suite your décor. These options generally come in light colors or sheer washes. They are less durable and are best suited for dry areas.
- 2) If your project requires a synthetic paint, many of the major paint manufacturers have created full color lines of low VOC paint. Note, though, that there is no such thing as “No VOC paint.” Some of the most popular lines are Benjamin Moore’s “Affinity,” Pratt & Lambert’s “MPI List,” and Sherwin Williams “Duration Home.”
- 3) If the above lines do not suit your needs due to price or selection, choose a latex paint rather than an oil-based alkyd paint, which has higher VOC content. Also, you may be able to find “recycled paint” mixes that will suit your needs if you do not need a large amount of a single shade.
- 4) If you select wallpaper, consider those options that contain natural or recycled materials. Also, remember to select a low-VOC adhesive.

Whatever wall covering you choose, remember to follow all safety instructions when preparing the wall and applying your materials. Proper ventilation and respiratory masks will keep your family healthy. If you have leftover paint, please refer to the waste section of this packet to identify the best disposal method.

Local Resources

Elder Paint & Wallpaper

3633 South Harvard Ave, 918-744-5136

6514 E 101st St, 918-299-0074

Sherwin-Williams

3030 South Sheridan, 918-628-1234

2142 South Peoria Avenue, 918-749-0595

3719 S 73rd East Avenue, 918-641-5928

Woodcraft Supply for all natural paints

5511 E. 41st, 918-384-0100

Websites

USGBC Green Home Guide on selecting paint: <http://greenhomeguide.com/know-how/article/selecting-green-paint>

National Geographic Green Guide on selecting paint:
<http://www.thegreenguide.com/buying-guide/paint>

Flooring

Like wall coverings, a single flooring choice involves a large number of square feet and plays a significant role in the environmental impact of your home. In choosing a sustainable floor covering, there are three primary factors: will it keep your family healthy, does it have a high impact manufacturing process, and is it durable or will it need to be replaced with new materials soon? Surprised that a floor could help keep your family healthy? Consider that 1) some flooring materials give off more gasses than others, and 2) hard floor options can cut down on the dust and other allergens that accumulate in soft furnishings.

- Many homeowners would currently like to install wood floors. While beautiful and durable, there is a very wide range of environmental impact for wood products. Real, solid wood provides several good options. The most sustainable is to use reclaimed wood from older buildings, and the sources for reclaimed wood flooring that has already been resanded and stained to match are rapidly expanding. If you choose virgin wood, look for the Forest Stewardship Council (FSC) seal of approval, which ensures that the product is both environmentally preferable and that companies involved are treating workers and forest populations fairly. The wood industry's "Sustainable Forestry Initiative" (SFI) label is less thorough. There are also many composite, impregnated, or laminated wood options. However, these products give off some unhealthy gasses and cannot be resanded and changed in appearance over time, creating more material demand if you decide to redesign your space.
- There are a growing number of products on the market that are similarly attractive alternatives to hardwoods. Bamboo and cork are two such products, and if grown sustainably they present a great opportunity for homeowners. Such plants can be grown more quickly than the traditional wood options, and thus require fewer resources to produce.
- For a softer aesthetic, you might prefer carpet or rugs. Look for either A) natural materials like wool, linen, or cotton; or B) synthetic materials high in recycled content. Carpet tiles are increasing in popularity, and they can be installed to look as modern or as traditional as you prefer. In addition to being commonly made with recycled materials, if one tile becomes damaged it can be replaced. Your floor can thus be kept looking great without the large cost and environmental impact of replacing the whole room's carpet.
- It is increasingly popular to forgo floor coverings in favor of exposed concrete. As the industry grows, providers are increasingly able to treat concrete floors to match any design from cozy traditional to super modern. The most sustainable options are those that require the least staining or processing once the concrete has been laid. Plus, as a very important side benefit, concrete has a very large thermal mass: it will stay cooler in the summer and retain heat in the winter.
- There are many other alternative products on the market today, like recycled rubber floorings and tiles made from recycled or reclaimed glass and other materials.
- Don't forget to consider your door mats and other small floor coverings: what was used to make them and what will happen to them when they are worn out? For example, a glass mat under your rolling office chair will look classier and can be easily recycled.

Local Help

Don's Floor Covering, buys and sells used carpet, 1211 E. 4th St., 918-582-9275

Roper Harwood Floors, 9529 E 55th Pl, 918-694-7834 ↑

Robinson Glass, 7240 East 46th Street, 918-664-7904

Habitat for Humanity ReStore for home renovation supplies, 6235 East 13th Street, 918-592-7904 ↑

Websites

USGBC Green Home Guide, Buyer's Guide to Green Floor Materials: <http://greenhomeguide.com/know-how/article/buyers-guide-to-green-floor-materials>

FLOR, a gold standard sustainable carpet tile, www.flor.com

Recycled rubber flooring: www.ecosurfaces.com

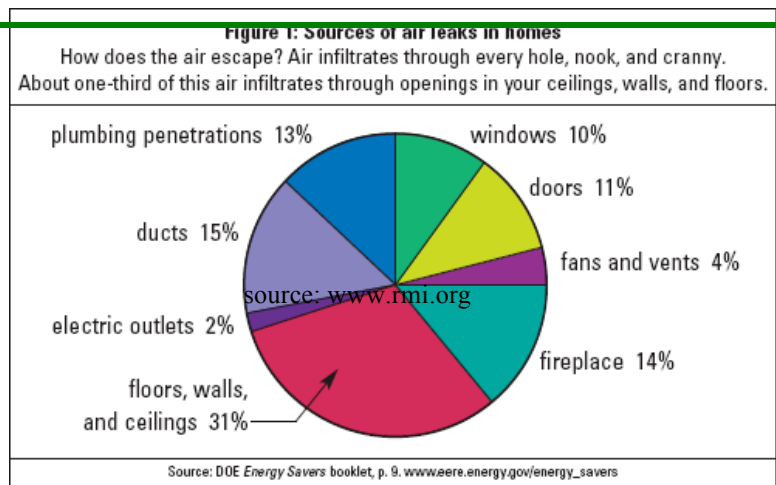
Heating and Cooling

According to the Department of Energy (DOE), heating and cooling account for about 55% of the energy use in the average American home. That means there are many opportunities for significant savings in this area!

- 1) The first step is making sure you are using your current heating and air conditioning systems efficiently. Having your equipment serviced annually can keep them running and identify potential breakdowns or inefficiencies sooner. PSO's CoolSaver program can connect you with a specialized HVAC contractor to evaluate your equipment and save you \$75 off any resulting efficiency repairs. It is also incredibly important to clean or replace the air filters on schedule. Not only will this keep your air cleaner, but your machines will use less energy to force the air through the filter.
- 2) Make sure that you are only using your heater or AC when you need it. A programmable thermostat is a worthwhile investment, particularly if your house is sitting empty nine hours a day, five days a week. Also, reevaluate the temperature settings on your equipment. Many people have found that they are still quite comfortable gradually changing their home's ambient temperature to 74 degrees in the summer and 70 in the winter, rather than a year round 72 degrees.
- 3) Give your main systems a little help. DOE studies show that the wind chill effect from ceiling fans allows you to raise your thermostat another 4 degrees in the summer with no reduction in comfort. Make sure that registers or return air vents are not blocked with furniture. Shade your outside AC compressor unit, but avoid blocking the air circulation. Hang insulating curtains or shades on sunny windows in the summer, or consider planting a leafy tree outside that will block the sun in the summer (if you aren't using the daylight) but then allow the warmth to shine in during the winter.
- 4) Of course, it is important that your heated or cool air isn't leaking to your garage or outside, and most homes are surprisingly leaky! There is a wide range of tasks that will help seal up your home's "building envelope," ranging from small "do-it-yourself" tasks like caulking around window frames to larger undertakings, like insulating your attic. You might start by walking around your house on an extra hot or cold day and feeling which of your window or door frames feel particularly drafty, then applying some simple caulk or weather stripping. There are many other potential sealing opportunities for every skill level, and many of these ideas are listed in Appendix A, adapted from Tulsa's Sun City Solar. Also, there are many service providers in the Tulsa area who can help you select and implement such projects. You may choose your favorite general contractor or select an analyst from www.resnet.us or www.bpi.org/ to get a more specialized evaluation of air leaks in your house.

5) Finally, make sure that your furnace and air conditioner are properly sized. When it is time to replace them, consider using Energy STAR appliances. Energy STAR is a federal government program that evaluates and labels products that are significantly more energy efficient than their competitors. The energy savings

from an Energy STAR heating or cooling system are about \$200 per year on average, quickly paying for any price premium for such systems. Also, Public Service Company of Oklahoma provides rebates of \$100-\$600 for some qualifying upgrades. See if you are eligible at www.psoklahoma.com/save. You might also consider installing a completely different type of heating, such as the more efficient radiant floor heating.



In addition to keeping our living spaces appropriately warm or cool with the above ideas, there are simple measures to help clean up indoor air quality. Studies have shown that 3 house plants can reduce the VOC's in a 130 square foot room by 70%. Some of those plants studied are Janet Craigs and other Dracaenas, Kentia Palm, Peace Lily, Florist's Chrysanthemum, Golden Pathos, and Bamboo Palm.

Local Help

If you are looking for a new HVAC contractor, you might start with this list from PSO: <https://www.psoklahoma.com/save/programs/EnergyStarContractorList.aspx>

House plants can be found at any of our excellent locally owned garden supply stores, such as Cohlmi's, Grumpy's Garden, or Garden Trug.

Ferguson Bath and Kitchen Gallery for radiant floor heating, 6525 E. 42nd St., 918-628-1500

Websites

PSO rebate and incentives programs: <https://www.psoklahoma.com/save/programs/>

Rocky Mountain Institute's briefs on efficient heating, cooling, and sealing your homes envelope: <http://www.rmi.org/rmi/pid217>

USGBC Green Home Guide, Buyers Guide to Green Insulation: <http://greenhomeguide.com/know-how/article/buyers-guide-to-green-insulation>

Find a certified home energy analyst or inspector: www.resnet.us or www.bpi.org/

National Resources Defense Council on the role of houseplants in keeping indoor air clean: <http://www.simplesteps.org/home-garden/water-air/houseplants-beautiful-clean-air-factories>

Furniture

Furniture shopping can be fun, but the market is incredibly diverse. Sorting through all of the options to make a sustainable choice can be quite overwhelming! Here are some guidelines to help you through this process.

- 1) The most sustainable choice is to choose existing pieces that can be refinished or reupholstered. Your green solution may reuse items to create something new, like putting a door on two filing cabinets. The door knob hole will even keep all of your computer cords tidy!
- 2) If you are interested in new wooden furniture, select solid wood pieces that will last longer and will not give off gasses from the particle board adhesives. The ideal piece would be made with FSC certified wood. For non-wood furniture, there are a variety of green alternatives on the market today, from organic cotton upholstery to recycled content metal frames.
- 3) Consider the life of the piece when investing in furniture. Is it something your child will outgrow in two years? If you redecorate, could you refinish or reupholster the furniture to prolong its life? Making decisions this way could keep many tons of furniture out of our landfills each year.

Local Resources

Urban Furnishings, 3636 South Peoria Avenue, 918-747-0510

Joz for vintage furniture and décor, 2818 E. 15th Street, 918-851-1223

Stow's Office Furniture, 6402 East Pine Street, 918- 835-2626 ↑

Mod50's for vintage furniture and décor, 2921 E. 15th St., 918-749-3620

A-1 Furniture Liquidators, 2519 East Admiral Place, 918-832-1111

If you are looking for affordable used furniture, be sure to check some of the area's many thrift stores.

Websites

Some brands with sustainable product lines:

www.kimballoffice.com

www.nationalofficefurniture.com

www.nationalbusinessfurniture.com

www.baltix.com

www.ecowork.com

www.sustainablefurnishings.org

www.vivavi.com

www.urbanwoods.net

Electronics

Our houses are steadily becoming warehouses of all sorts of consumer electronics. You probably don't want to give up that luxury, but you can still use those electronics more efficiently and cut down your bills.

- 1) Unplug appliances you don't use very often, as many of them are still drawing a small amount of power when they are "off." A red or blue "standby" light is a good indication that an item might be drawing power. If you want to learn specifically what is or isn't drawing "vampire power", you could measure very simply by buying a Kill-O-Watt meter from Amazon or many other online retailers. "Smart" power strips are another option for centers of high energy consumption, like a computer desk or entertainment center. These strips have some plugs for "always on" (or available) and some plugs for things you use less frequently.
- 2) There are Energy STAR labels for efficient computers, televisions, and many other home electronics. When you are ready to upgrade, consider purchasing one of these products. Keep in mind that there is a wide range of energy use within the Energy STAR labeled products, so shop around. For computers, Energy STAR only rates how much energy the computer uses in sleep mode. Also, LCD monitors are more than 50% more energy efficient than the large CRT monitors. Inkjet printers use less energy than laser printers, and slower laser printers use less than

their faster cohorts. Copy machines can be one of the most energy intense home electronics. You can save some electricity by purchasing combination machines rather than several individual products.

- 3) Many electronics, especially computers, come with energy management systems that control features like screen brightness or when your monitor shuts off. Double check that your current and purchased electronics have these settings engaged. Energy STAR's website even allows you to download a simple program called EZ Wizard that will walk you through these settings on your Windows computer. They estimate that changing these settings will cut your electricity use in half, saving \$25-\$75 per computer each year. Keep in mind that screen savers do not cut down on your energy consumption.
- 4) Please refer to this packet's waste disposal section for information on how to safely dispose of your electronics, which contain lots of toxic heavy metals.

Local Resources

Your favorite source for home appliances should have a range of energy efficient models available.

Websites

Rocky Mountain Institute's brief on home electronics: http://www.rmi.org/rmi/Library/2004-19_HEB7Electronics

View Energy STAR home electronic products and details:

http://www.energystar.gov/index.cfm?c=products.pr_find_es_products

Buy a Kill o Watt meter: <http://www.newegg.com/Product/Product.aspx?Item=N82E16882715001>

Buy a smart power strip:

http://www.amazon.com/Smart-Strip-SCG5-Autoswitching-Technology/dp/B000L9FQUO/ref=sr_1_1?ie=UTF8&qid=1288702481&sr=8-1

Energy STAR EZ Wizard for computer power saving settings:

http://www.energystar.gov/index.cfm?c=power_mgt.pr_power_mgt_ez_wiz

Water Use

Domestic water use is fairly cheap in our part of the country, but wastewater treatment and the rest of the water system infrastructure have a significant environmental footprint. The municipal system uses electricity for each gallon water that is purified or treated for waste, plus our supplies of fresh drinking water are limited. Please note that several ways to save water are listed under other categories, such as those for laundry and the kitchen. Also, many of the listed ways to conserve water are also more energy efficient.

- 1) Start at the point of water use in your home: install quality sink aerators, water saving toilet tanks, and low-flow showerheads. The industry for these products continually updates their products. So while the low-flow showerheads of the early 1990's may have reminded you of camping, there are many attractive and highly functional products on the market today. Individuals have also come up with several "do it yourself" options for reducing their water use, like putting a brick or other similar item in a conventional toilet tank to let it fill using less water. Finally, make sure you address any dripping faucets or running toilets immediately.
- 2) Address your home's "upstream" water use next: your hot water heater. If it has not been serviced for quite some time, then drain the sediment from your tank. If you have to mix in cold water to get to a comfortable water temperature, you are wasting energy heating the water that hot. Reduce your temperature to 120 degrees, saving about 5% of the heating energy for each 10 degrees reduced. Reduce the energy needed to keep your water hot by insulating around the pipes within six feet of the heater and buying a hot water heater jacket (or "blanket"). You can put a timer on electric hot water heaters to turn off over night or in other periods of low demand. You could also turn off your hot water heater during vacation. Consider purchasing a new hot water heater if yours is extremely old, but you will probably want to wait until your current system fails. When shopping, consider whether a tankless system would fit your needs.

Local Resources

Your favorite home improvement store should carry a wide range of aerators and more efficient toilets, showerheads, and faucets.

Websites

USGBC's Green Home Guide's Tips for Switching to High Efficiency Toilets, Showerheads, and Faucets: <http://greenhomeguide.com/know-how/article/tips-for-switching-to-high-efficiency-toilets-showerheads-and-faucets>

Waste disposal and recycling

The average American generates about 4.5 pounds of trash per day. That may not sound overwhelming, but it adds up to more than 1,500 pounds a year *per person*. The best thing to do is to minimize the waste that you produce, especially pointless packaging waste. For the waste that you simply can't avoid, here are some tips on dealing with it.

- Recycle your newspaper, office paper, magazines, glass bottles, #1 and #2 plastic bottles, and aluminum cans by utilizing Tulsa's convenient curbside pick up service. This can be added onto your regular trash pick up bill in Tulsa, and private businesses are providing such services in surrounding areas. You can identify the type of plastic you are using by looking at the numbers inside the triangular recycling symbol. Plastics with #1 or #2 are commonly water or soda bottles, milk or salad dressing bottles, peanut butter or jelly jars, and some shampoo or toiletry

bottles.

- The MET is a government trust authority that works with the Tulsa area governments to support recycling services in our area. They have 13 Recycling Centers that accept various combinations of recyclables. For example, in addition to the basic materials listed above for curbside recycling, many of the Recycling Centers also accept phone books, cardboard, up to 5 gallons of cooking oil, household and automotive batteries, and up to 5 gallons of motor oil or antifreeze. To find your nearest recycling center or to see what each location accepts, visit www.metrecycle.com/recycling/met-centers.
- The MET also runs the Fairgrounds Pollutant Collection event twice a year. At these events, residents can dispose of cleaners, medicines, fluorescent light bulbs, fertilizers, small ammunitions, non-latex paint, bug poison, and other hazardous waste. For more information call 918-584-0584.
- Consider composting your food and yard waste. Not only will you save space in our landfills, but you can create very fertile soil and fertilizer for your garden. There are many ways to compost, whether you have a big back yard or just a bit of counter space. The Metropolitan Environmental Trust of Tulsa has created a great introduction at www.metrecycle.com/composting. Avoid using your garbage disposal to dispose of food waste if you can avoid it, as a lot of extra water is used to run everything through the pipes.
- If you decide not to compost your yard waste, you may drop it off for free and pick up unlimited wood chip mulch at Tulsa's Green Waste Site with a current Tulsa driver's license. Open 8am to 4 pm anytime city offices are open, at 10401 E. 56th St. N.
- Try to donate anything that you are done with if it is still in usable condition. Tulsa has a large variety of charities and thrift stores that will accept used clothing and furniture. If you gather up a single large batch of items, several organizations will even pick up your materials. Unwearable clothes can be used as rags before they are thrown out.
- If you have leftover new or used materials after a remodeling project, you can take your doors, windows, shingles, tiles, or other materials to one of the local salvage shops. For example, the Habitat for Humanity ReStore shop at 1234 S Norwood accepts these donations, sells them for a small fee, and uses the money to build Habitat for Humanity homes in our community. You can call them at 918-592-7904. For other outlets for your unneeded building supplies, check the MET website.
- If you have leftover paint, first decide if it is usable. School theater programs or other nonprofit organizations can often use extra paint. If you have unusable latex paint, let it dry out by leaving the lid off or mixing with newspaper or cat litter then dispose of in the regular trash. Oil based paint, varnish, lacquer and other substances can be taken to the Fairgrounds Pollutant Collection event, as described below.
- More stores are starting to accept items for recycling related to what they sell. For example, many grocery stores now have bins for used plastic bags. Some mailing stores accept expanded foam packing materials. Keep an eye out at the places you frequent, and consider asking a manager if they don't have what you are looking for.



- You can throw away steel cans in Tulsa, as they will automatically be recycled.
- The MET website contains information on how to recycle lots of other items. For example, you can find several sources to recycle metals or cardboard. They also have extensive lists of local businesses that will accept appliances and consumer electronics, like Target or Best Buy. These last two categories are particularly important to dispose of properly due to the metals and chemicals that are in them. Appliances like refrigerators and air conditioners contain chemicals like Freon, which deplete the ozone layer when they leak. Electronics contain many heavy metals that can leak when put into landfills, plus many old electronics can be reused for parts. When you are choosing an electronics recycler, see if you can tell where the items are actually dismantled. Unfortunately, many American electronic recyclers collect thousands of small items and ship them to China or other countries with more lenient environmental and worker safety standards.
- Try to buy products with recycled content whenever possible. The economics of the recycling system will not work if there is not a demand for the end product.

Local Resources

City of Tulsa Curbside Recycling, www.tulsarecycles.com, 918-596-9777

Shikoba Recycling, www.shikobarecycling.com, 918-894-2019

Fairgrounds Pollution Collection, www.metrecycle.com/composting, 918-584-0584

Location and information on MET Recycling Centers: <http://www.metrecycle.com/recycling/met-centers/>

Websites

MET Introduction to Composting: www.metrecycle.com/composting

Environmental Protection Agency information on electronic waste:

<http://www.epa.gov/osw/consERVE/materials/ecycling/>

Cleaning

The average American home uses at least 10 cleaning products on a regular basis that contain all manner of complex chemicals. In the United States, manufacturers are not required to list all ingredients of non-food or medicinal items. For example, a can of carpet cleaner simply states “anionic surfactants and fragrance.” For many people, especially children, these chemicals cause respiratory irritation, headaches, and other issues related to chronic exposure over the course of our daily lives.

There are many green cleaning products on the market these days, such as the lines by Method or Seventh Generation. These are good alternatives, but the US does not have stringent standards for labeling cleaning products as “all natural.” Plus, with any of these brands, you are still paying for a large amount of packaging and water.

More people are now turning to making simple, cheap cleaners that they can be sure are safe. For example, you can make a good all purpose cleaner by mixing ½ cup vinegar, ¼ cup baking soda, and ½ gallon of water. To make a more powerful cleaner, add a tablespoon of a pure castile soap, such as Dr. Bronner’s. If you would like to mask the vinegar smell, add a few drops of your favorite essential oil. For more information and recipes from National Geographic, see <http://www.thegreenguide.com/home-garden/cleaning/diy-cleaners>

Some of the most toxic chemicals under your sink are probably dedicated to ridding your house of various bugs and other pests. These chemicals may be necessary sometimes, but here are some cheap and easy alternatives:

- Ants are repelled by the smells of spearmint, cinnamon, and cucumber peel, and they are said to be afraid of crossing a chalk line.
- Other strongly scented herbs repel a variety of beetles, moths, and other pests. Experiment with lemon scented herbs, eucalyptus, basil, bay leaves, and wormwood.

Local Resources

Whole Foods Market for all natural soaps, 1401 East 41st Street, 918-712-7555 ↑

Websites

National Geographic's Green Guide on cleaners: <http://www.thegreenguide.com/home-garden/cleaning>

Natural Resources Defense Council database of information on chemicals in household products:
<http://www.simplesteps.org/chemicals>

Information on natural pest control:

http://eartheasy.com/live_natpest_control.htm

Pets

Our pets share our living spaces, and sometimes even our bed or couch. It is important to keep them safe from parasites and other pests, but if we can do so while bringing fewer potentially toxic chemicals into our homes then everyone wins.

- Essential oils can be made into sprays or dabbed onto a bandana collar to deter fleas and other bugs from landing on our dogs and cats. Popular choices of oils include lavender, eucalyptus, tea tree, citronella, or geranium.
- Adding garlic or vinegar to your pet's food or water can help make their skin less appealing to fleas.
- Regularly washing your pet's bedding in hot water will kill the occasional bug. Sprinkling salt on your upholstery and carpets, letting it sit over night, then vacuuming and disposing of the bag the next morning will also curb the spread of bugs if you catch them soon enough.

Of course, please do provide your pets with the medicine and vaccines they need.

Local Resources

Whole Foods Market for essential oils, 1401 East 41st Street, 918-712-7555 ↑

Websites

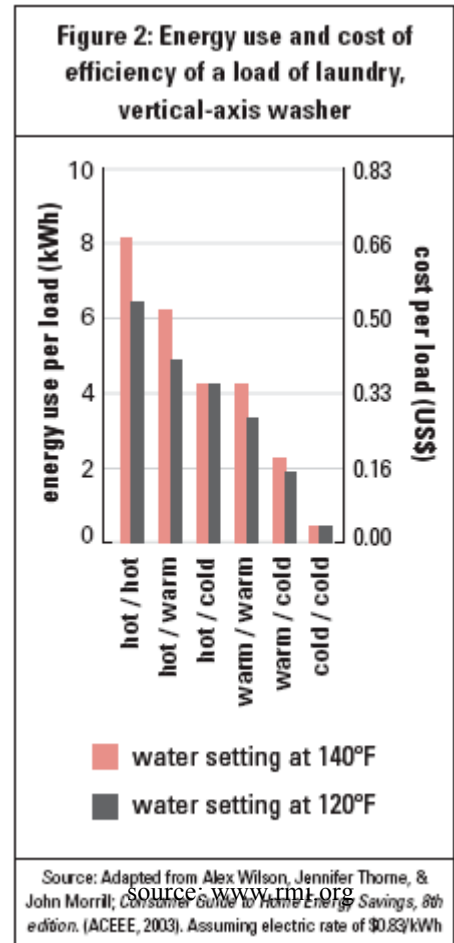
Humane Society on toxic chemicals in pet products:

http://www.humanesociety.org/animals/resources/tips/flea_tick_OTC_pet_products.html

Kitchen

Kitchens are often the heart of our homes, central to both our water and energy consumption and our family’s daily lives. Ensure that you have clean air and lower bills by following these steps.

- An energy efficient exhaust hood that vents to the outside can be installed above the stove to remove fumes from cooking. Make sure to open a door or window, though, so that sooty or moldy air is not pulled in through the chimney or foundation to replace the removed air.
- New dishwashers use about half the water and one quarter of the electricity that 8-10 year old models use. You can use whatever machine you have most efficiently by only running full loads, using the unheated air setting to dry your dishes, and avoiding settings with extra soak cycles.
- Cabinets are often made from particle board or other compressed products, which contain formaldehyde and adhesives that can offgas for several years after installation. FSC certified wood is a good alternative, or formaldehyde-free medium-density fiberboard (MDF) or other alternative compressed plant materials. If you are remodeling your kitchen but the internal shelves and drawers are okay, consider replacing only the cabinet fronts and hardware.
- The majority of a countertop’s environmental impact occurs during the material extraction and manufacturing process, so reclaimed materials are preferable. There are a wide variety of options with various designs and costs. Read this comparison from the US Green Building Council for more specific guidance: <http://greenhomeguide.com/know-how/article/buyers-guide-to-green-countertop-materials>.



- Your refrigerator is a costly and critical piece of kitchen equipment. Prolong its life and keep it running efficiently by unplugging it and wiping down the condenser coils once a year, plus defrost any manual defrost freezers. Set your refrigerator between 36 and 40 degrees and your freezer between zero and five degrees, and confirm these settings by sticking a thermometer inside for a day. Also, some models have a “power save” switch that will turn off the small heater that prevents external condensation build up; if you do not see any condensation be sure this switch is turned to “power save.” According to the Rocky Mountain Institute, side-by-side refrigerator/freezers use 10 percent more electricity than freezer-on-top models; through-the-door water and ice dispensers and automatic icemakers can increase electricity use by up to 20 percent; and automatic defrost models can use up to 40 percent more energy than manual defrost models—though to see this last difference you would need to regularly defrost your manual freezer. If shopping for a new refrigerator, be sure to choose an appropriate size. Cooling more space than you need will be a waste of electricity, but running one large refrigerator is more efficient than running two smaller ones.

| Table 2: Energy costs of various methods of cooking the same meal | | | | | |
|--|------------------|---------------------------|---------|-------------|-------------------|
| Appliance | Temperature (°F) | Appliance capacity/rating | Time | Energy used | Energy cost (\$)* |
| electric oven | 350 | 2000 watts | 1 hr. | 2 kWh | 0.17 |
| convection oven (elec.) | 325 | 1853 watts | 45 min. | 1.39 kWh | 0.12 |
| gas oven | 350 | 122 Btu/hr | 1 hr. | 0.122 therm | 0.07 |
| frying pan | 420 | 900 watts | 1 hr. | 0.9 kWh | 0.07 |
| toaster oven | 425 | 1140 watts | 50 min. | 0.95 kWh | 0.08 |
| crockpot | 200 | 100 watts | 7 hrs. | 0.7 kWh | 0.06 |
| microwave oven | "High" | 1440 watts | 15 min. | 0.36 kWh | 0.03 |
| *Energy cost based on 8.3¢/kWh electricity and 60¢/therm for gas | | | | | |
| Source: Alex Wilson, et al., <i>Consumer Guide to Home Energy Savings</i> , 8th ed., (American Council for an Energy Efficient Economy, 2003). | | | | | |

source: www.rmi.org

- How you cook your food determines your energy consumption more than what type of stove you have. The most energy efficient options are pressure cookers, microwave ovens, crock pots, and toaster ovens. Conventional ovens are very inefficient because all of that metal and empty air has to heat up before any of the heat gets to the food, so try to use a microwave or toaster ovens unless you are cooking several large dishes at once. On the stove, cover pots and lower the temperature. On an electric range, only use a flat bottomed pan. On a gas range, there is no need to turn the flames up to the point they touch the sides of your smaller pan, and always keep the grease plates clean so that they reflect more heat. Using the stove or oven in the summer will warm up the kitchen and increase demand for air conditioning, so consider grilling outside.

Local Resources

All major appliance stores should have a selection of energy efficient appliance options.

Many local contractors are able to install the cabinets or countertop of your choice once you have done the research to choose your new sustainable material.

Websites

Rocky Mountain Institute brief on kitchen appliances: http://www.rmi.org/rmi/Library/2004-20_HEB8KitchenAppliances

Energy STAR products and their descriptions:

http://www.energystar.gov/index.cfm?c=products.pr_find_es_products

USGBC Green Home Guide on countertop materials: <http://greenhomeguide.com/know-how/article/buyers-guide-to-green-countertop-materials>.

National Geographic's Green Guide on green kitchens: <http://www.thegreenguide.com/home-garden/cleaning>

Laundry

While it may not be the most interesting area in the house, the laundry room provides many opportunities for saving water and energy.

- Regardless of the washing machine you have, you can adjust your use to be more efficient. Studies show that the “warm” setting on washing machines is adequate to wash all but the very dirtiest of clothes, such as diapers or oily stains. Many clothes will actually fare best when they are washed on cold, even if they can be washed warmer. Also, only wash clothes when you have a full load.
- If you plan to buy a new washing machine, invest in a high efficiency front loading machine to see substantial (30-70%) savings in both water and electricity use. The price premium for a more efficient model can be paid back in savings in just a few years, and the average life of a washing machine is 13 years.
- The most efficient way to dry clothes is on a clothesline, and it is a great opportunity to spend some time outdoors. The average year in Tulsa has more than 250 days without rain, and as long as it is about 40 degrees outside your clothes should dry within a day. When using a clothes dryer, it is important to clean the lint trap before every load. Only dry full loads, but do not overfill the machine so that clothes still have room to get air between them. Dry heavier natural fabrics like sweaters and jeans separately from light or synthetic fabrics. The heavier items will require a longer cycle, and you will avoid damaging the delicate items by heating them long after they are dry. Also, check that your outside dryer vent closes tightly to keep outside air from leaking in. Finally, if you have an electric dryer, install a lint kit for \$5-\$10 to vent the exhaust heat and humidity back into the house during the winter.
- If you are shopping for a new dryer, look at the settings and control options carefully. The government does not publish minimum energy performance standards for dryers, so the basic technology is usually the same. What differs is whether the end of a cycle is based on, in order of increasing preference, a timer, a temperature sensor, or a moisture sensor. Since the goal is to dry fabrics, the most efficient machine will turn off as soon as the moisture content is low enough. However, one new technology to consider is a more efficient condensing dryer or heat pump clothes dryer (HPCD).

Local Resources

Your appliance store should have a selection of more efficient washers and dryers.

Clothes line kits are available wherever home supplies are sold, such as hardware stores, small general stores, and big box stores.

Websites

Rocky Mountain Institute’s brief on efficient cleaning appliances: http://www.rmi.org/rmi/Library/2004-18_HEB6CleaningAppliances

Appendix A: Building Envelope Checklist

Adapted from: Sun City Solar's "77 Energy Saving Action Tips"
918-494-0886

Sources: U.S. Department of Energy and Energy Efficient Building Association

Sealing

- 1) Seal around fireplace trim, chimney, window trim, door trim, baseboards, plumbing penetrations through walls in conditioned rooms, plumbing vent stacks, all plumbing access doors, and electrical wire penetrations
- 2) When not using fireplace, keep damper tightly closed.
- 3) Install draft guard insulators behind light switches and outlets.
- 4) Use child safety plugs with gaskets in outlets.
- 5) Weatherize window air conditioners.
- 6) Weather strip attic access.
- 7) Insulate attic access cover.

Windows

- 8) Install storm windows and/or interior window insulation kits.
- 9) Install pulley plugs over pulleys of double hung windows.
- 10) Use rope caulk between double hung windows.
- 11) Weather strip windows.
- 12) Seal and insulate basement windows.
- 13) Adjust sash locks.
- 14) Use insulating window curtains or shades

Doors

- 15) Weather strip exterior doors, top and sides, plus top and sides of interior doors to unconditioned areas, vertical joints on exterior sliding doors, all around the garage door
- 16) Adjust striker plate on exterior doors.
- 17) Replace old entry doors with insulated ones.
- 18) Install door sweep on exterior doors and interior doors to unconditioned area(s).

Insulation

- 19) Insulate all access domestic hot water pipes.
- 20) Insulate the first 6 feet of cold side domestic hot water heater pipes.
- 21) Insulate band joist area.
- 22) Insulate the attic with material like R-33 cellulose, install radiant barrier on ceiling
- 23) Wrap water heater with insulation blanket.
- 24) Caulk and insulate primary and secondary duct joints.
- 25) Insulate knee wall in crawl space.
- 26) Install poly in crawl space and backer rod foam under baseboards.

Appendix B: Sources Used

The information in this packet was compiled by about a dozen volunteers. The primary sources consulted are listed below, but we may have missed a few citations. Any omission of sources is simply a mistake due to the collaborative nature of this project.

Rocky Mountain Institute, www.rmi.org

Public Service Company of Oklahoma, www.psoklahoma.com

Sustainable Tulsa's *Green Directory*, www.sustainabletulsa.org/green_directory

Energy STAR, www.energystar.gov

National Geographic, www.thegreenguide.com

US Green Building Council, www.greenhomeguide.com

Natural Resources Defense Council, www.simplesteps.org

Metropolitan Environmental Trust, www.metrecycle.com

U.S. Environmental Protection Agency, www.epa.gov

Earth Easy, www.eartheasy.com