



THE GREEN GUIDE 2009

WOODSTOCK ENVIRONMENTAL COMMISSION



MISSION STATEMENT

The Woodstock Green Guide is a community resource produced by the Woodstock Environmental Commission to complement the Town's Carbon Neutral Initiative. The resources and topics outlined in this handbook are meant to illustrate the holistic nature of the initiative, and demonstrate that efforts in every regard contribute to our carbon neutral goal.

As this project progresses, the town will be implementing programs in related areas, such as transportation and education. Please visit www.woodstockny.org for updated information regarding these programs, as well as updates to this guide.

CATSKILL STATE PARK



Dion Ogust

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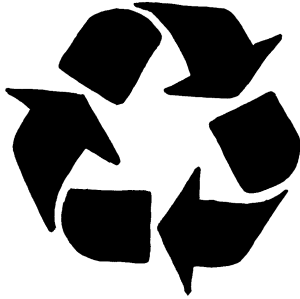
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ACKNOWLEDGEMENTS

The Woodstock Green Guide is a production of the Woodstock Environmental Commission of 2008, chaired by Mary Phillips Burke and including Grace Bowne (Vice Chair), Anna Brandt, Stuart Auchincloss, Megan Reynolds, David Gross, and David Lewis.

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<http://yorebridge-sport.co.uk/suppliers/>



Dion Ogust



SOLID WASTE / RECYCLING

Most people are familiar with the '3Rs' (Reduce, Reuse, Recycle), but the connection between reducing our solid waste and reducing our carbon footprint may not always be clear. Solid waste is the natural result of our consumption. When we consider that the widget we buy is produced using an unknown amount of energy, that our widget will be replaced by another widget on the store shelves, and that we will most likely dispose of our widget at some point, we see a cycle of energy consumption. Practicing the 3Rs, particularly the reduction piece, cuts the energy costs involved in producing and disposing of products, thus reducing our carbon footprint.

The following section lists local resources for reusing and recycling, as well as general tips for reducing our waste.

Local resources for selling or swapping unwanted items –

- <http://finance.groups.yahoo.com/group/HudsonValleySwap/>
- <http://groups.yahoo.com/group/HudsonValleyYardSale/>
- <http://groups.yahoo.com/group/nyyardsale/>
- <http://groups.yahoo.com/group/HudsonValleyEcycle/>
- <http://groups.yahoo.com/group/FreecycleUlsterCountyNY/>
- <http://www.craigslist.com>

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- WKNY @ 1490 AM has a radio version of the Garage Sale. Tune in Sunday morning from 11 AM to 12:30 PM to both seek and sell.

Junk mail reduction (Reprinted from www.doitgreen.org, published by Do It Green! Minnesota)

Is unwanted mail a problem in the United States? Let's do the math.

Shipped: 5.2 million tons

Recycled: 0.98 million tons (19%)

Garbage: 4.2 million tons

With 31 pounds of paper and plastic going into the garbage for every woman, man and child in America, that adds up to a pretty sizable "junk mail" problem!

From: Recycling and Disposal in the United States Facts and Figures for 1998, U.S. EPA, April 2000

Mail Preference Service

Households can significantly reduce their advertising mail by registering with the Direct Marketing Association's free Mail Preference Service. It's easy to do, and you'll be reaching some of the biggest direct marketers in the country with a single letter.

Send a postcard with your name and address to:

Mail Preference Service

PO Box 643

Carmel, NY 10512-0643

The Direct Marketing Association (DMA) is a trade association of businesses who advertise their products and services directly to consumers by mail, telephone, magazine, Internet, radio or television. DMA doesn't do mailings - but its members do. The DMA also has services for unwanted phone and email solicitations. Learn more about them on their web site:

www.dmachoice.org

Credit offers

Nearly 3 billion credit card solicitations are sent to consumers every year! The nation's major consumer credit bureaus - Equifax, Experian, Innovis and Trans Union - established a toll-free number to get off lists for credit card solicitations. The recording will ask for your social security

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number, full name, address and telephone number. The service allows you to opt out for five years or permanently. No matter what you pick, you can “opt back in” at any time by calling this same number. Call 1-888-5-OPTOUT (1-888-567-8688).

Individual Mailers

Not all companies use these national systems to purge their mailing lists. If you are getting mail from persistent mailers, you can contact the company directly and ask to be placed in their “do-not-mail file.” Look at the mail piece to see if there’s a number to call, or write them a note (you can use their business reply envelope), send them an E-mail, or use their Web site. Be patient. It may take some time (up to six months!) to get your name and address out of their mailing cycle.

Mail list brokers

These firms provide national lists for non-financial data:

- Experian: 800-228-4571 x4633. Wait through a long message about other options before leaving your name, address and phone number for opting out of Experian’s compiled databases.
- Polk Company: 800-464-7655: Ask for the “Polk Opt-out Line”

National Mailers

These national advertisers compile and maintain large databases of customers nationwide, often for mailing coupons or local, weekly circulars. These materials are generally printed well in advance of mailing, so expect a delay of 6-8 weeks for this opt-out to take effect.

- ADVO, Inc. – One Univac Lane, Windsor, CT 06095
- Val-Pak (Cox Target Media) – Send an e-mail to valerie@valpak.com with REMOVE FROM MAILING in the subject line. Include your address, city, state, and zip/postal code exactly as it appears on the Val-Pak blue envelope or mailing label. Or call 800-661-0959. At the prompt, enter your zip code to connect to the New York sales office. Press “0” to leave a voicemail asking to remove your name from their mailing list; include your full address, city and zip code. Mail: Include your mailing label or coupon envelope, marked “Delete”.
Address Information: Val-Pak Direct Marketing Systems, 8605 Largo Lakes Drive, Largo, FL 33773

Catalog Reduction

- www.Cataloguechoice.org allows you to register and submit requests to any catalogs you would like to stop receiving.

Local Transfer Stations/Recycling Information

- Ulster County Resource Recovery Agency (UCCRA) – A commercial county recycling and transfer station that accommodates residents on Saturdays only. They schedule household hazardous waste collection twice a year, offer electronics recycling and have a SHARPS program to recycle residential medical waste. Their website has extensive information regarding how to dispose of potentially toxic substances (paint, batteries, etc.), as well as alternatives to these substances. They also provide composting information, and compost barrels for \$40. Call for schedules. Phone: 845.336.3336, www.ucrra.org
- Saugerties Transfer Station – Requires trash to be in yellow bags purchased onsite or at outlets like the Woodstock Town offices. Recycles glass, plastic bottles with necks, gray and brown cardboard, newspaper, junk mail, phone books, hard covered books with covers removed, vehicle batteries, empty grill tanks. Most metals are accepted free of charge, except refrigerators, dehumidifiers and air conditioners. Tires are charged according to size and if on rims or not. Facility has electronics recycling, and there are donation boxes for clothing and shoes on site.
- Tuesday-Saturday, 7:00 AM-3:00 PM, 1765 Route 212, Saugerties, 12477. Phone: 845.679.0514. www.saugerties.ny.us/transfer_station/transfer.html
- Hurley Transfer Station – Open to Ulster County residents. Recycles glass, plastic bottles with necks, gray and brown cardboard, newspaper, junk mail and phone books. Also accepts tires, motor oil, eyeglasses, electronics, scrap metal, yard waste, wood waste, packing peanuts, rubble (asphalt, brick, etc.), oil filters, antifreeze, propane tanks. Closed Tuesday, Wednesday, and Sunday, open other days 9 AM—3PM. 1043 Dug Hill Rd, Hurley, NY 12443. Phone: 845.338.5412.
- Reboot4U – Reboot refurbishes donated computers, and then redistributes them in the community. P.O. Box 44, Phoenicia, 12464. Phone: 845.688.1544, info@reboot4U.org, www.reboot4U.org

Recycling CFLs (Compact Fluorescent Bulbs)

As CFLs contain mercury, they should be recycled, rather than disposed of with solid waste. Below are local recycling agencies:

- Home Depot – 1122 Ulster Ave., Kingston, NY, 12401, 845.336.4575
- American Lamp Recycling – 22 Stage Door Rd., Fishkill, NY, 12524. Phone: 800.315.6262
- USA Lamp & Ballast Recycling, Inc. – 2010 Route 9W, Suite 5, Milton, NY 12545. Phone: 845.795.1282, usalamp@usalamp-ny.com

Local resources for used goods (see the Home Improvement section for a complete list of green/salvaged building materials)

- Zaborski's Emporium – Architectural Salvage and antiques. Claw-foot bathtubs, pedestal sinks, vintage light fixtures, doorknobs, porch columns, and fireplace facades, as well as chimneys, lamp parts, hinges, shelf brackets, library ladders, radiators, and all manner of tools. Kingston. Phone: 845-338-6465, www.stanthejunkman.com
- Stanz – Doors, light fixtures, fencing, small collectables, furniture, all manner of barrels, and tools. 743 Ulster Ave, Kingston, NY 12401. Phone: 845.331.7579
- Hudson Valley Materials Exchange – Building materials, design elements, arts & crafts supplies, bric-a-brac. New Paltz Exchange Station, Clearwater Road, off Route 32. Phone: 845.567.1445, www.hvmaterialsexchange.com
- Goodwill Industries of Greater New York and Northern New Jersey, Inc. – Clothing, furniture, items, small collectables. 1306 Ulster Ave, Kingston, NY 12401. Phone: (845) 336-3303
- Salvation Army – Clothing, furniture, items, small collectables. 884 Ulster Ave, Kingston, NY 12401. Phone: 845.338.9695

Shopping Tips (Reprinted from www.doitgreen.org published by Do It Green! Minnesota)

Why Buy Local? - It supports people in your own community and keeps money there. It reduces the many costs associated with transportation, including fossil fuel consumption and pollution, often passing the savings along to you. It guarantees greater freshness in foods and other perishables. On average, food consumed in the U.S. first travels 1,400 miles by truck, trains or plane.

Earth Friendly Terms

Many terms are thrown to describe a product's "earth friendliness" so consumers are often confused. Here are definitions of some of the most common terms that appear on product labels, to help you make more informed, responsible purchases.

- Recyclable means the product can be recovered for use as raw material in the manufacture or assembly of a new product or package. Recycled Content refers to how much of that product's raw materials were recovered from the waste stream.
- Pre-consumer waste is reclaimed waste materials that did not reach the consumer (i.e., trimmings from the manufacture of plastics, unsold copies of books or newspapers).
- Post-consumer waste is reclaimed material that has served its end purpose, such as recycled paper or plastic soda bottles.
- Degradable, Biodegradable, and Photodegradable means the product will break down in a reasonable time if given enough light, air, and/or water.

Paper

It is difficult to find one truly eco-friendly paper. It is up to you to decide what is the most important to have in the paper you use. Of course 100% recycled or tree-free and chlorine-free have the least environmental impact.

Plastics - Most plastic bottles can now be recycled, but usually only once. In contrast, glass or aluminum can be recycled endlessly. The Plastic Bottle Institute established a voluntary identification system of plastic bottles and these symbols are usually stamped on the bottom of the bottle.

The Truth about 'Green' Claims and Certifiers

"Earth-friendly," "environmentally safe," "green," "organic"... what do these 'eco-eye-catching' labels really mean?

Retailers and consumers alike are questioning the validity of green claims for good reason. Green products represent a burgeoning market: 15% of all new products introduced in the U.S. last year. According to American Demographics magazine, 46% of Americans have bought a product because it made environmental claims. In an effort to educate consumers, two leading environmental product certification groups, Green Seal and Scientific Certification Systems (SCS), have programs which rate and label so-called green products. The two groups take fun-

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damentally different approaches. Green Seal sets standards for types of products and their claims. A Green Seal panel works with consumer groups, industry officials and scientists to develop standards for products such as re-refined engine oil and compact fluorescent lamps. Standards reflect factors such as packaging, product disposability and pollution generated in manufacture. SCS, formerly known as GreenCross, has two labels: Single Claim Certification and the Environmental report card. Products may carry either label or both. Single Claim Certification verifies specific claims in three areas: recycled content, biodegradability, and volatile organic compounds. The label for a paper product certifies not only that the paper is “recycled” but also its percentage of post-consumer waste content. The Environmental Report Card profiles the environmental burdens of a product throughout its life-cycle, from manufacture and distribution to use and disposal. The label reads much like the nutritional charts found on most food packages. The report card will be on a few dozen different products by summer. Third-party certification can cost as little as \$2,000 or as much as \$30,000, depending on the availability of information and the type and number of products involved. The cost is often offset by increased sales. In Germany, companies whose products bear the Blue Angel logo, awarded by a government-sponsored program, report a 10-30 percent increase in sales.



UCAT www.co.ulster.ny.us/ucat/



www.fortgreenery.com



www.greencouple.com

TRANSPORTATION

Regional Mass Transit Information

- Ulster County Area Transit (UCAT) - Public transportation service offered throughout Ulster County, with limited service to Orange and Dutchess Counties. Call or check their regular schedule on their website. To make a reservation for next day curb to curb service call 845-334-8120, Monday thru Friday, 9:00 a.m. to 4:00 p.m. Telephone confirmation is requested on the day of service. UCAT also serves as Ulster County's Transportation Information Center - (845) 340-3333. The Dispatch phone number is (845) 334-8458, www.co.ulster.ny.us/ucat
- Arthur Mulligan (formerly Arrow Bus Line) – Serving Ulster and Dutchess County. Phone: (845) 658-8600
- NY Rides – Provides options for mass transit in the Hudson Valley, as well as complete commuter maps. www.nyrides.com
- Adirondack Trailways – Bus service for the Hudson Valley region. Phone: (800) 340.3333, www.trailwaysny.com
- The Vanpool Project - The I-287 Vanpool Project by MetroPool and NYSDOT offers commuters an opportunity to improve the quality of commuting through vanpooling and bus or train shuttle programs. For information about existing van pools in Ulster County and the Hudson Valley, www.easystreetny.com/commuters/comm_bv.html, Phone: (800) FIND-RIDE
- Metropool - Offers free ride matching services to Hudson Valley commuters. www.metropool.com/freecommuterservices/ridematch.html, Phone: (800) FIND-RIDE

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Biking information

In regard to conservation, cycling is a nearly perfect mode of transportation. There are bike routes in Ulster County that connect major towns and attractions.

- Map and routes for the New Paltz area –
www.roberts-1.com/bikehudson/r/p/w/u/np_wv/routes/index.htm
- The Hudson Valley Rail Trail - Connects Highland to New Paltz.
www.hvnet.com/features/highlandrailtrail.htm
- Overlook Bikes – New bikes, repairs, rentals. 93 Tinker Street, Woodstock NY 12498, Phone: 845.679.2122, www.overlookmountainbikes.com

FUEL ALTERNATIVES

Biodiesel

Biodiesel can be used as fuel for any diesel engine, in the gas tank as you would regular diesel. It can be used straight or mixed with diesel. It usually made from either soybean or corn oil, transformed to fuel by a simple titration method involving methanol. Biodiesel fuels produce fewer emissions than petroleum based diesel, and can be used in compatible furnaces, tractors, etc., as well as vehicles. Biodiesel is becoming more available at gas stations around the country, most commonly as a B20 blend, which means 20% biodiesel. As of yet, the only NY state biodiesel fuel station is in Troy. Biodiesel is also available from private producers. For more information about biodiesel and producers:

- Community Biofuels – Provides information and education on using biofuels for car fuel and heating. Under the umbrella of Community Biofuels is the Hudson Valley Biodiesel Co-op, which allows members to produce and use the biodiesel. However, Community Biofuels is planning to produce and sell biodiesel bioheating oil using waste vegetable oil.
www.communitybiofuels.com, Jerry Robock at jrobock@communitybiofuels.com.
- Yellow Brand Premium Biodiesel – Massachusetts based company producing biodiesel using waste vegetable oil. Available at various retailers in Western Massachusetts. Phone: 800. 285.4533, www.yellowbiodiesel.com

Straight vegetable oil & waste vegetable oil systems (SVO & WVO)

A diesel car can also run on straight vegetable oil. In fact, the first diesel engine ran on peanut oil. It is possible to put vegetable oil straight into your diesel car's gas tank, but it is more usual to do a simple conversion. This conversion essentially creates a hybrid system, adding a separate gas tank where the vegetable oil is stored. The fuels are not mixed, but rather the driver can switch from running on diesel fuel to vegetable oil. These systems have the benefit of being very cheap once installed, as 'gas' can be made from waste vegetable oil from restaurants. There is also the positive benefit of reusing old oil, rather than buying new soybean or corn oil, whose production requires great energy inputs in itself. There is a lot of information out now about doing the conversions, and mechanics willing to do it.

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- Journey to Forever – This website gives a good overview of the SVO system, as well as the pros and cons. Includes hands-on information for the mechanically inclined.
www.journeytoforever.org
- Greasecar – probably the most well known producer of SVO kits for conversion. They also have a good forum for SVO questions, as well as a classified section for diesel cars, converted and not. Other installers include Golden Fuel Systems and Frybrid. These systems are constantly being improved, with new manufacturers entering the market, so do research before deciding on a system. Phone: 413.529.0013, info@greasecar.com, www.greasecar.com
- Vegpower – Based in Ithaca, they sell SVO products and perform conversions. Phone: 607.351.9639, www.vegpower.com, convert@vegpower.com
- Wally's Super Service – Located in Mahopac, Wally installs and services SVO systems, as well as sells his own line of SVO products. Phone: 845.621.1819, www.wallysuperservice.com

Energy Efficient Driving Tips

- Don't idle the car for more than one minute
- 55 mph is the optimal speed for energy efficiency. Drive the speed limit, or below, for better mileage.
- Overdrive gears improve the fuel economy of your car during highway driving.
- Avoid sudden bursts of speed, tailgating and pumping the accelerator pedal. Gradual starts and stops result in less fuel use and less wear and tear.
- Out on the open highway, keep windows rolled up to reduce drag.
- Using a vehicle's air conditioner on a hot summer day can decrease mileage.
- Travel during off-peak hours when possible.
- Take the shortest route with the best roads.
- Use the cruise control -- it can save fuel by maintaining a steady speed.
- Keep tires at the recommended air pressure.
- Keep your car engine properly tuned.

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- Remove bicycle and ski racks when not in use.
- Excess weight uses more fuel. Remove unnecessary items from inside the vehicle, trunk or truck bed.
- Use the lowest octane gasoline recommended by the manufacturer.



Megan Reynolds



Cheryl Paff

GARDENING, LANDSCAPING AND LOCAL FOOD RESOURCES

The connection between carbon neutrality and agriculture is another complex issue. For our purposes here, there are two basic considerations: the way food is transported and the way it is produced. Whenever we buy food out of season or from locations thousands of miles away, there is understandably an energy expense that comes with its transportation. As far as production is concerned, conventional agriculture utilizes huge amounts of petroleum based fertilizers and pesticides, and thousand-plus acre farms necessitate fossil fuel dependent machinery for their maintenance and harvest. In the United States, agriculture accounts for roughly 30% of the national oil usage. These practices also have an uncalculated environment effect on nearby water systems, soil quality, and the health of both farmers and consumers.

Though there are many issues to take into account when trying to eat 'ecologically,' buying local food when possible is one sound option. Buying locally eliminates many of the transportation concerns, and allows the consumer to connect directly with the producer. Organic or not, small farmers often utilize practices that are less damaging to the land, more environmentally holistic, and less fossil fuel dependent. Supporting such farms encourages sound land stewardship practices and preservation of open spaces. Following are local food resources, as well as some for gardening and landscaping.

Gardening Resources

- Cornell Cooperative Extension – CCE is the outreach arm of Cornell University, with 57 offices across the state. The extension service offers a variety of services for the home gardener, in-

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cluding local classes, information, and a gardening hotline. Cornell also performs soil tests – kits are available through the Ulster County office. 10 Westbrook Lane, Kingston, 12401-2928, Phone: 845.340.3990, fax 845.340.3993, www.gardening.cornell.edu

- Mountain Top Arboretum - An educational and recreational preserve and garden that offers classes in nature, the arts and local history. Route 23C, Tannersville, 12485. Phone: 518.589.3903, mtarbor@mhonline.net, www.mtarbor.org
- Hudson Valley Seed Library – Based at the Gardiner Library, a seed exchange promotes the identification and preservation of plant varieties best suited to the Hudson Valley. ‘Borrow’ from the seed library, and also check out the seed catalog. Ken Greene, www.seedlibrary.org

Permaculture

Permaculture is both a philosophy and a design system that utilizes a systems thinking approach to create sustainable human habitats by analyzing and duplicating nature’s patterns. Thus, it is efficient and its methods are often used in sustainable design. Local resources are:

- Green Phoenix – Workshops, Regional Permaculture & Green Building information. Camp Epworth, High Falls. Joan & Wilton, Phone: 845.687.7646, mamajoane@yahoo.com, www.green-phoenix.org
- Hudson Valley Permaculture – Permaculture demonstrations, events and organizations in the Hudson Valley. [http://northeasternpermaculture.wikispaces.com/NY BR Hudson+Valley](http://northeasternpermaculture.wikispaces.com/NY_BR_Hudson+Valley)
- Hancock Permaculture Center – Permaculture courses. Hancock, NY. Phone: 917.771.9382, greenman124@yahoo.com, www.hancockpermaculture.org

Community Gardens

Too much shade? Don’t have the space for a garden? Contact the Woodstock Community Garden for information about plots – Adelle at 679.6070, woodstockgarden@yahoo.com, woodstockcommunitygarden.pbwiki.com

Local Food Resources

- Eatlocalfood.org – A comprehensive resource for locating local food in the mid-Hudson Valley. This includes retailers who support local farmers, restaurants, farms themselves, CSA programs, and links to food resources locally and nationwide. www.eatlocalfood.org

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- Slow Food Hudson Valley – Part of the Slow Food moment, which is dedicated to food produced in a way fair to its producers and the planet, or gastro-ecology – ‘a recognition of the strong connections between plate and planet.’ Events feature local growers.
<http://groups.google.com/group/slow-food-hudson-valley>
- Hudson Valley Table magazine – Quarterly publication that highlights all things culinary in the Hudson Valley, particularly local producers and the businesses that support them. The magazine is available for free throughout the area, or online at www.valleytable.com
- Rondout Valley Growers – a non-profit community organization comprised of local farmers, residents and businesses with the mission of ‘strengthening the region’s family farms and preserving open space for future generations.’ The website includes a grower directory, events, and the opportunity to buy directly from the member farmers via the website. P.O. Box 867, Stone Ridge, NY 12484, Phone: 845.687.005, 845.626.7919, info@rondoutvalleygrowers.org, www.rondoutvalleygrowers.org
- Saugerties Farmer’s Market – Main and Market Streets, Saugerties. Saturdays, June-October, 9 AM—2 PM. Phone: 845.246.9371, contact@saugertiesfarmersmarket.com, www.saugertiesfarmersmarket.com
- Kingston Farmer’s Market – Stockade District, Kingston. Saturdays, June-November, 9 AM—2 PM. Karen Fitzgerald, Phone: 845.338.4629.
- Pine Bush Farmer’s Market – Main and New Streets, Pine Bush. Saturdays, June-October, 9 AM—2 PM. Phone: 845.744.6763, pinebushmarket@yahoo.com, www.pinebushfarmersmarket.com
- Rhinebeck Farmer’s Market – Rhinebeck Municipal Parking Lot. Thursdays and Sundays, May-November, 10 AM—2 PM. info@rhinebeckfarmersmarket.com, www.rhinebeckfarmersmarket.com
- Woodstock Farmer’s Market – Houst parking lot and Mower’s field. Wednesdays, May-September, 4PM—dusk. info@woodstockfarmersmarket.com, www.woodstockfarmersmarket.com
- Local Harvest – National site with information regarding all things local food – www.localharvest.org

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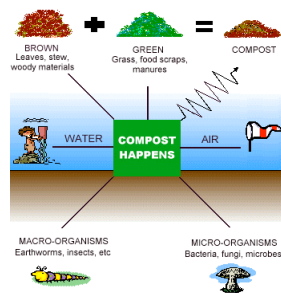
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Moss Lawn

www.ecoterrallandscape.com/



www.torfen.gov.uk/.../Composting/Home.aspx



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INTEGRATED PEST MANAGEMENT (IPM), LAWN CARE, AND COMPOSTING

Integrated pest management is an ecologically based approach to pest control. The basic premise of IPM is to minimize populations of pests rather than implementing practices attempting to completely “eradicate” a particular pest. IPM cultural practices include buying pest resistant varieties of plants, watering plants at the ground level, and using mulch to retain water and prevent environments for undesirable insects.

Mechanical practices include checking plants frequently for insect damage, using row covers to create a barrier between plants and insects, and things like placing sticky cards near the crop to ‘catch’ undesirable insects.

The last resort of IPM is naturally based pesticides. Some common ones include neem oil products, sulfur, horticultural oils, diatomaceous earth, copper based materials and insecticidal soap. There are also non-toxic insect sprays made from various household items like soap, hot peppers and garlic.

For complete information on IPM and organic pest/disease control:

Cornell’s Resource Guide for Organic Pest and Disease Management,
<http://www.nysaes.cornell.edu/pp/resourceguide/>. This can also be ordered as a paper copy from Cornell Cooperative Extension.

Or visit Cornell’s IPM site at <http://www.nysipm.cornell.edu/>

Or look for the six-series DEC pamphlets on IPM, available through the DEC or at the Woodstock Town offices.

Sustainable Lawn Care

Like other sustainable gardening practices, maintaining a sustainable lawn is based on principles of working with nature, thus minimizing the need for inputs and maintenance. Basic principles include:

- Maintain healthy soil – Core aeration promotes lawn health by increasing root depth and allowing greater access to water and nutrient reserves.
- Choose grass seed carefully – Some grasses, like fine leaved fescues, require less water, fertilizer and mowing than types such as perennial ryegrass.
- Create a moss lawn - Explore plant species for your lawn besides grass. It is possible to walk on mosses and succulents, and they do not demand mowing. Get started at:
<http://www.nytimes.com/2008/05/01/garden/01moss.html>
- Mow properly – Higher mowing encourages greater rooting depth and thus results in less need to mow. Also, removing less than 1/3 of the grass blade helps reduce maintenance in that seasonal growth is slower. Leaving grass clippings on the lawn also returns nutrients to the lawn, approximately equivalent to 1.5 fertilization applications a season.
- Provide nutrients only as needed – While most lawns will benefit from an application of nitrogen, quick release nitrogen will increase your lawn's demand for moisture, and decrease stress tolerance. It is best to choose natural fertilizers as these often contain most of their nitrogen in a slow release form. Existing lawns rarely need phosphorus.
- Watering Tips – To maintain a lawn during summer months, most will require 3/4 to 1 inch of water every week to 10 days from about June through August or early September. During seasonal dry periods in which your lawn is allowed to go into a dormant (or resting) state, intervals and amounts of lawn watering can be adjusted to help conserve water while still keeping the plants alive.

Other resources

Cornell has extensive information regarding sustainable lawn maintenance -

<http://www.gardening.cornell.edu/lawn/>. Several hard copy titles can be purchased from this site, such as Lawn Care without Pesticides.

Compost

Compost is decomposing organic matter that improves soil structure and water holding capacity. It's easy to make compost using food scraps and yard waste, which in turn can be used to enhance the soil quality of your home garden. Making good compost takes a bit of work, but here are some basics to get you started:

Compost piles can be started directly on the ground, or in bins made of chicken wire, garbage cans, or pallets, to name a few possibilities. Compost containers can also be purchased, and some designs can be turned.

Compost is composed of 'green layers' - nitrogen rich materials like food scraps, grass clippings and manure – and 'brown layers' carbon rich materials like leaves, wood chips, sawdust, or torn up paper. Alternate the two layers in a general ratio of 2 parts brown to 1 part green. Do not include meat or dairy products.

You'll probably have to troubleshoot a little after you start your pile, but there are plenty of resources:

Home Composting, Cornell Waste Management Institute –

<http://cwmi.css.cornell.edu/compostbrochure.pdf>

Cooperative Extension, Tompkins County – This extension agency has put together eight great handouts on different methods of composting, including vermi-composting.

<http://counties.cce.cornell.edu/tompkins/compost/downloads.htm>



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HOME ENERGY CONSERVATION

Conservation is the keystone to any energy reducing strategy. The sections below give a general list of where most homes use the most energy and tips for reduction. More involved strategies for improving your home's energy use follow in the upcoming section.

Home Energy Conservation (Home Energy Saving Tips from NYSERDA's Get Energy Smart website) –

Where does your home use energy?

- 60% - Air conditioning/heat
- 16% - Water heater
- 12% - Refrigerator
- 7% - Lights
- 5% - Computers, TV, etc.

The amount of electricity you use is measured in, and priced by, kilowatt-hours (kWh). When you pay for a kilowatt-hour of electricity, you are paying for 1,000 watts of electricity used continuously for one hour. You can calculate the operating cost of any electrical appliance by checking its wattage and using these formulas:

- wattage x hours used / 1,000 = kWh
- kWh x cost per kWh = operating cost

Lighting

Replacing your current incandescent light bulbs with compact fluorescent light bulbs (CFLs) will save you nearly \$30 over the life of each bulb.

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- ENERGY STAR CFLs use 66% less energy than a standard incandescent bulb and last up to 10 times longer. This means that over the life of one CFL, a consumer can avoid replacing up to 10 incandescent bulbs!
- [ENERGY STAR lighting fixtures](#) put out the same amount of light as standard fixtures while providing excellent color rendering and light temperature. Colors appear true and natural.
- ENERGY STAR fixtures operate at much lower temperatures than many traditional lamps, drastically reducing the risk of fire in your home.

Lighting – Energy Saving Tips

- Turn off unused lights and electronics (TVs, radios, computers) when you leave a room.
- Use timers on indoor and outdoor lights.
- Appliances use energy if when they aren't on. Put appliances on a switchable power strip so you can turn off all appliances when not in use.

The Attic – Energy Saving Tips

- Check your insulation - especially your attic. By increasing and filling gaps in insulation in older homes you keep your home warmer in the winter, cooler in the summer, and save money all year round.
- Install a vapor barrier in your attic to reduce the flow of moisture from inside your home through the insulation. This eliminates condensation that reduces insulation efficiency.

Laundry

- 90% of the energy used for washing clothes is for heating the water.
- [ENERGY STAR clothes washers](#) use 50% less water than standard models, saving about 8,000 gallons a year per household. Front loading washers use less energy.
- They also use 37% less energy, saving you up to \$80 a year (depending on the water temperature setting and whether it's an electric or natural gas hot water heater).
- In addition, ENERGY STAR clothes washers extract more water from clothes during the spin cycle. This reduces the drying time and saves energy.

Laundry Energy Saving Tips

- Only wash and dry full loads.
- Always rinse in cold water.
- Hang your laundry outdoors to dry.
- Remove the lint from your dryer screen.
- Make sure the clothes dryer exhaust is not blocked.

Refrigerator

- Your [refrigerator](#) uses the most electricity of all the appliances in your home.
- A refrigerator sold in 2001 uses 40% of the amount of electricity needed to operate an ENERGY STAR model.
- ENERGY STAR refrigerators have better insulation and efficient motors, as well as all the features you want and expect.

Refrigerator energy saving tips

- Select a refrigerator/freezer with energy-saving features. It's guaranteed to use 20% less electricity than the standard model, saving you approximately \$60 a year. Get more info on [ENERGY STAR refrigerators](#).
- Regularly clean the condenser coils of your refrigerator that are typically located underneath or behind the refrigerator.
- Make sure the seals on your refrigerator, freezer and oven doors fit tightly. Easily perform this test by leaving a lit flashlight inside a closed appliance and if you see light around the gasket, replace the gasket.
- Keep your refrigerator between 35 and 38 degrees Fahrenheit and your freezer at -10 degrees Fahrenheit.

Dishwasher

- An ENERGY STAR dishwasher saves approximately 1,200 gallons of water a year - 6 times the amount of water the average person drinks in a year!

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- 60% to 80% of the power used by a dishwasher is consumed just to heat the water.

Dishwasher Energy saving tips

- Run your dishwasher only when full.
- Air dry the clean dishes by turning the energy-saver switch on.
- Scrape - do not rinse! Scrape your dishes before loading the dishwasher. Pre-rinsing is no longer necessary with today's technology and detergents. You may be using more water to pre-rinse your dishes than the dishwasher uses for a full wash cycle!

Home Office

- Look for the ENERGY STAR label on computer monitors, fax machines, copiers and water coolers.
- In the average home, 40% of the electricity used to power home electronics is consumed while the products are turned off, so use power strips to shut electronics down completely when not in use.

Home office energy saving tips

- Turn off lights in offices when they are not in use.
- Turn off office equipment completely when it is not needed at night or on the weekends.



www.energystar.gov



www.BPI.org



www.usgbc.org/leed

HOME IMPROVEMENT

General Resources

One of the difficult things about building or remodeling green is the lack of standardization in the process. A great deal of research is needed in order to make decisions regarding site selection, materials, energy, and health. In March 2008, the United States Green Building Council and American Society of Interior Designers released remodeling guidelines known as Regreen, based on LEED (Leadership in Energy and Environmental Design) standards. Regreen intends to be a resource for homeowners renovating/building green, and to anticipate common questions the homeowner might have when renovating green. Lots of research is still necessary and the best practice, but it's a great place to start. Other resources follow:

- Regreen – www.regreenprogram.org, regreenprogram@usgbc.org
- Common Fire Foundation – The Common Fire Foundation built the highest LEED scoring building in the Northeast in Tivoli. The Common Fire website gives a thorough list of their building practices, including building materials, sources, and local subcontractors. They also provide brochures on energy savings and building green. 401 West Kerley Corners Rd., Tivoli, NY 12583, Phone:(845) 750-6476, info@commonfire.org, www.commonfire.org

New York State Incentives

New York State offers incentives, education and training for increasing energy efficiency in the home, administered through the 'Get Energy Smart' program of NYSERDA. Find out more about all their programs at www.getenergysmart.org. Some of their general programs include:

BPI Qualified Contractors

To receive state incentives, most projects begin by getting a thorough energy audit conducted by a BPI Qualified Contractor. To find a contractor in your county:

<http://www.getenergysmart.org/Resources/FindPartner.aspx>

Assisted Home Performance with Energy Star

If you own your home, you may be eligible for low-interest financing to make the energy efficiency improvements even more affordable. And if you're income-qualified, you may be eligible to receive an incentive:

<http://www.getenergysmart.org/LowIncome/HomeOwners.aspx>

Solar Shades and Energy Saving Awnings

Depending on the orientation of your home, awnings and solar shades can be an effective way to keep your house cool in the summer and retain heat in the winter. Indoor solar shades can be made inexpensively from canvas, or purchased from www.gaiam.com, Sears, or JC Penney.

For custom awnings:

- Sun Shelters – Shokan, New York, Phone: 845.657.2490
- General Information – www.awninginfo.com

Insulation

Not surprisingly, the quality of a house's insulation determines its energy efficiency. If you are doing insulation improvements yourself, or working with a BPI contractor, there are products made from recycled, non-toxic, and/or renewable plant materials.

Additional benefits of natural insulation materials are effective sound insulation and the ability to perform over time. The immediate performance benefits and longer-term cost benefits will therefore be significant. If insulation upgrades are recommended in an energy audit, your Energy Star contractor will most likely recommend a cellulose or spray foam insulation. If you are doing the work yourself, some efficient insulations include:

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- Bonded Logic's UltraTouch Natural Fiber Insulation - made from 85% post-industrial cotton fiber, 100% recyclable, VOC-free, and formaldehyde-free. Available locally at www.marjam.com
- [National](#) Fiber Cel-Pak – composed of over-issue newsprint (yesterday's unsold newspapers), it is high quality, all-borate, loose-fill cellulose insulation for use in blowing caps in attics and in dense-packing wall and ceiling cavities, either for retro-fit or new construction applications.
- [Polystyrene](#) Spray Foam – made from high quality natural fibers that contain inherent qualities that provide for extremely effective sound absorption and maximum thermal performance.
- Coler Natural Insulation – Coler serves upstate New York, and offers several environmentally friendly insulation products. www.coler.com
- Insultechnologies' Natural Cotton Fiber Insulation – <http://www.insultechnology.com/diy2.html>

Doors and Windows

Not surprisingly, leakage from old windows and doors also detracts from your home's ability to maintain the heat it produces. Though it is an expensive proposition, changing these older elements will greatly improve your home's efficiency. For new windows, consider:

- Any double paned window (from Pella, Marvin, etc.)
- Weathershield Premium Windows and doors – manufacturing triple pane glass window. www.weathershield.com, Phone: 800.477.6808

Sometimes, though, changing older fixtures takes away from the character of the house. If possible, be sure to have outdoor storm windows on these windows. If that is not possible (or in addition to), you can have indoor storm windows made, which fit better and last longer than weather sealing.

- Advanced Energy Panels – manufacturing interior custom storm windows that are recognized by NYSERDA, and thus can be eligible for tax incentives. Based in Albany, 800.819.9463, www.advancedenergypanels.com

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www.weburbanist.com



Log Home Living,
www.loghomeliving.com



Touchwood Project,
www.touchwoodproject.com

NEW CONSTRUCTION

When building new, there are many opportunities to do it sustainably. Under the New York State Energy Star Rated Homes program, homeowners work with a state certified builder to build the most energy efficient home possible. Homes under this program use approximately 30% less energy than the average new build. Visit <http://www.getenergysmart.org/SingleFamilyHomes/NewConstruction/HomeOwner.aspx> to get more information, or call 877-NY-SMART.

Natural Building

Natural building involves a range of [building](#) systems and materials that place major emphasis on sustainability. Ways of achieving sustainability through natural building focus on durability and the use of minimally-processed, plentiful or [renewable resources](#), as well as those which, while [recycled](#) or salvaged, produce healthy living environments and maintain indoor air quality. Natural building tends to rely on human labor more than technology. As Michael G. Smith observes, it depends on “local ecology, geology and climate; on the character of the particular building site, and on the needs and personalities of the builders and users.” Common natural building techniques include straw bale, cob, cordwood, timber framed, rammed earth.

Local Natural Builders

- Growing Places – Ben Simpson, Phone: 845.658.7022, www.yourgrowingplaces.com

Natural Building Resources

- www.thelaststraw.org/resources/

- www.naturalbuildingnetwork.org/

Sustainably Harvested Wood

The Forest Stewardship Council (FSC) is a non-profit promoting sustainable forestry. Lumber and other products bearing the FSC logo certifies that wood comes from a certified well-managed forests. FSC products are available throughout the US at many mills, lumberyards, and retail stores. For more information regarding FSC standards and product availability, visit www.fscus.org

Roofing

Changing your roofing can make an appreciable difference in cooling by reducing the amount of heat that is transferred into the building.

- Energy Efficient Roofing Materials – Reflective roofing reflects more of the sun's rays, reducing cooling costs by 15%. You can read articles about reflective roofing and find local installers at www.energystar.gov. Other roofing materials are beneficial for improved cooling. More information about these can be found at Cool Roof Materials Database, <http://eetd.lbl.gov/coolroof/>
- Green Roofs – A green roof is a roof covered by vegetation, soil, and a waterproof membrane. It is beneficial in reducing stormwater runoff, filtering pollutants, as well as providing green space. Green roofs designs vary widely. A good place to get more information is www.greenroofs.org. Another interesting article is on Eco Geek at www.ecogeek.org/content/view/902/

Green Building Materials

From countertops to wall treatments to flooring, there are many materials that make new building more sustainable. An exhaustive discussion exceeds the scope of our guide, but you'll find local suppliers and techniques below, as well as above in the recycling section .

Local Salvaged Materials (also see 'used goods' section above)

- Antique and Vintage Woods – Products come from managed sustainable forests, or are salvaged from old buildings, factories, and barns. They have lines of fencing products, garden and play houses, and reproduction antique furniture, all made from reclaimed, recycled, or salvaged wood. Pine Plains, NY, Phone: 518.398.0048, www.antiqueandvintagewoods.com

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- Green Demolitions – Luxury kitchen appliances, bath fixtures, and furnishings donated from houses being demolished or renovated. Greenwich, CT, Phone: 203.969.4345, www.greendemolitions.org
- Habitat for Humanity of Westchester ReStore – Used building materials, overstock donated by building supply stores, contractors, and demolition crews. New Rochelle, NY, Phone: 914.966.0132, www.habitatwc.org/restore
- Historic Albany Foundation – Antique and historic materials, including doors, windows, decorative ironwork, stained glass, light fixtures, claw-foot and other tubs, mantels and fireplaces, radiators, moldings, flooring, and hardware. Albany, NY, Phone: 518.465.0876, www.historic-albany.org
- United House Wrecking – Salvaged fireplace mantels, stained glass, doors, lighting, outdoor ornaments, plumbing, and hardware. They also operate a Design Center. Stamford, CT, Phone: 203.348.5371, www.unitedhousewrecking.com

Design Elements

Besides building materials and architectural items, there are options for sustainable design such as countertops, tile, paint, wall coverings, and fabric.

- Environmental Depot – Specializes in products made from natural, sustainable, and recycled sources, include carpets, cabinets, shelving, and ceilings, paints, wallpapers, lighting, and air systems. Bronx, NY, Phone: 800.238.5008, www.environproducts.com
- Bettencourt Green Building Supplies – Suppliers of green building materials like Plyboo (laminated bamboo plywood), Kirei Board (sorghum), and Dakota Burl (waste sunflower seed husks). Also flooring, countertops, wall treatments and insulation. Brooklyn, NY, Phone: 718.218.6737, www.bettencourtwood.com
- Natural Built Home – Retailers of eco-friendly paints, cabinetry, lighting, and fixtures. Located in Minneapolis. 612.605.7999, answers@naturalbulthome.com, www.naturalbulthome.com
- Environmental Home Center – Retailers of building supplies, countertops, bath items, household equipment, and home energy systems. Located in Oregon. Phone: 800.281.9785, www.environmentalhomecenter.com

Energy Efficient Appliances

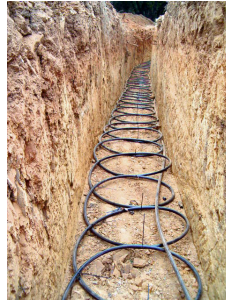
When choosing new appliances, there are resources to help you choose energy efficient models. A good place to start is the Energy Star website, which lets you search by manufacturer and gives each models' efficiency specs. To find the most efficient model may require a little extra research. For example, Energy Star ratings take water use into account for clothes washers, but not dishwashers. For criteria to thoroughly evaluate appliances, visit the American Council for Energy Efficiency.

Resources

- Energy Star: www.energystar.gov, Phone: 888.782.7937. They have pamphlets with all of their information available in hard copy.
- American Counsel for an Energy-Efficient Economy – Phone: 202.429.8873, www.aceee.org, info@aceee.org



Megan Reynolds



Air solutions

<http://www.geoairsolutions.com>



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RENEWABLE ENERGY

There are various ways to incorporate renewable energy systems into your existing house or new construction. This section lists common systems, as well as implementation opportunities through New York State.

Passive solar

Refers to means of using sunlight for energy without active mechanical systems. New buildings can incorporate passive solar techniques for electric generation, as well as heating and cooling.

Resources for passive solar design:

- Passive solar:
http://apps1.eere.energy.gov/consumer/your_home/designing_remodeling/index.cfm/mytopic=10250
- Canadian Solar Buildings Research Center – www.solarbuildings.ca/main.php?l=e
- Zero Energy Design - www.zeroenergydesign.com/
- US Department of Energy –
www.eere.energy.gov/buildings/info/design/integratedbuilding/passive.html

Photovoltaic (PV) Systems

Photovoltaics is a technology that converts sunlight into [electricity](#) using solar cells. Solar panel arrays can be roof or ground mounted. The state offers incentives and loan programs for homeowners. Details in the next section.

Solar Thermal

Solar thermal systems harness energy for heat. There are a number of systems that can use solar thermal technology to heat water for boilers and radiant heating. The most typical application in this region, however, is solar thermal tubes used for heating hot water. These systems are also eligible for tax incentives described in the next section. US Department of Energy www1.eere.energy.gov/solar/solar_heating.html

Geothermal Power

Although geothermal power can be used for electricity as well as heating and cooling, in this region it is usually used for the latter. Geothermal heating/cooling systems utilize the Earth's ability to store heat in the ground and water [thermal masses](#) via a geothermal heat pump. The system takes advantage of a land mass as a [heat exchanger](#) to either heat or cool a building structure. For more information –

- New York House—<http://metrogreenbusiness.com/archive/article.php?issue=38&dept=71>
- US Department of Energy—www.eere.energy.gov/consumer/your_home/space_heating_cooling/index.cfm/mytopic=12640
- Energy Star Geothermal site—www.energystar.gov/index?c=geo_heat.pr_geo_heat_pumps
- List of geothermal installers in the Hudson Valley—www.centralhudson.com/products_services/geothermal_installers.html

Wind Power

Wind power is the conversion of wind power into electricity using a wind turbine. The state offers incentives for homeowners. Details are listed below. Further information regarding wind power can be found at:

- The American Wind Energy Association: www.awea.org
- Other Power – www.otherpower.com
- Four Winds Energy – www.four-winds-energy.com/incentives.html

New York State Incentives

Power Naturally is the NYSERDA program dedicated to renewable energy. New York State offers incentives for PV systems, solar thermal systems, and wind systems. For the above, the state pays a percentage of the total cost of the system (often around 50%), as well as being eligible for state and federal tax breaks. Homeowners are required to use a state certified installer in order to take advantage of the incentives. For information on all state renewable energy programs, visit 518.862.1090, info@nyserda.org, www.powernaturally.org

Buying Green Power

In this region, another way of supporting renewable energy is to buy Renewable Energy Certificates (RECs) from participating companies. The following explanation of RECs is from Central Hudson website –

RECs represent the environmental benefits of electricity produced through renewable resources, and are sold to residential customers, businesses, institutions and municipalities by independent companies to encourage the development of renewable energy. REC purchases provide a way for you to support renewable energy, as they help fund, for example, ongoing operating costs of existing facilities or the construction of new renewable power plants. They also help developers obtain financing for new renewable energy facilities. Please note that when you purchase RECs, your electric supply is still purchased on the wholesale market by your utility, Central Hudson (or by an independent supplier of your choice), and your utility bill does not change. You will likely receive a separate bill for the RECs from the independent provider. Purchasing RECs does not alter the content of the energy provided to your home or business, nor does it mean that additional renewable energy is being generated to match your specific needs, only that you are supporting its future development. Several municipalities, organizations, and individuals in the Hudson Valley already purchase RECs in order to support renewable energy in our state and nation. Independent companies offering RECs include Community Energy, Sterling Planet and others listed on the NYS Public Service Commission's web site, and many sell them nationally. To view this list, and to learn more about renewable energy options, visit www.AskPSC.com

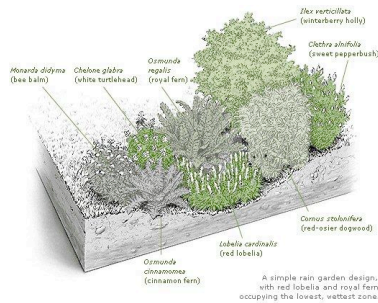
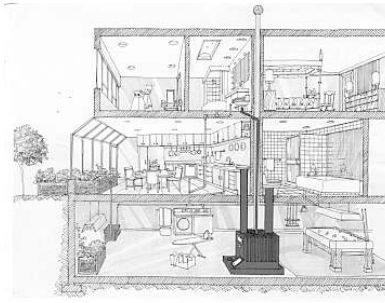
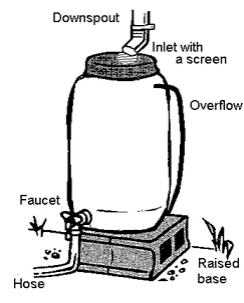


Illustration by Steve Buchanan,
courtesy of the Brooklyn Botanical
Gardens



Clivus Multrum System,
www.clivusmultrum.com



Town of Black Mountain,
www.blackmountain.org

WATER CONSERVATION

SAVING RAIN WATER

Rain Gardens

A rain garden is a planted depression designed for water catchment. They typically have loose, deep soil, for absorbing water and filtering pollutants. Rain gardens help to minimize storm water and keep water on the site. As with most garden projects, there are many varieties and designs. A good place to start is the Rain Gardens of Michigan site. They have resources that can be applied to our watershed and gardening zone. www.raingardens.org

Rain Barrels

Rain Barrels are simple catchment systems for capturing and directing rain water. They are most effective when placed under a gutter drain, and fitted with a spigot to drain and use the water. Rain barrels are easy to make usually a plastic 50 gallon drum. They can also be purchased on Ebay. For more information on rain catchment and making your own rain barrel:

- Rain Barrel Construction –

www.cityofbremerton.com/content/sw_makeyourownrainbarrel.html, also

www.naturalrainwater.com/make_rainbarrel.htm. A good source of barrels locally is Kieva's G Cooperage in Newburgh, Phone: 845.561.4045

Rain Catchment

- Rain Catchment Information – The City Farmer out of Vancouver has a lot of interesting solutions for urban gardening, including rain water catchment, www.cityfarmer.org

Gray Water Systems

In a regular domestic septic system, gray water (from the shower, dishwasher, laundry) is mixed with black water (from the toilet). Gray water systems separate the gray and black water so that the gray water can be recycled. These systems range from simple to complicated, but the basic idea is to process the water slightly, thus creating usable water for irrigation or reuse in the home. Gray water systems thus recharge groundwater, reduce water use, and prevent septic system strain. There are often issues of legality surrounding the installation of gray water systems, but New York is becoming more amenable to them as water shortage concerns grow. Check your designs with the county health department. More ideas, information and system designs can be found at:

- Oasis Design – Books, articles, designs - <http://www.oasisdesign.net/greywater/>
- Greywater.com – <http://www.greywater.com/>

Composting Toilets

A composting toilet is often called a dry toilet. It uses little or no water to dispose of waste. Some models look like a regular toilets with a chamber below the floor or in the basement, some have the composting chamber attached to the unit. Either way, the general idea is that the liquid waste is separated and often incinerated, and the solid waste is mixed with a carbon source (like peat or sawdust), and heated until it is a usable compost. Composting toilets often have the reputation of being unsafe or smelly, but they are now accepted by most health departments, and most models are very effective.

For more information and vendors:

- Clivus Multrum - 15 Union Street , Lawrence, MA 01840, Phone: 800-425-4887, forinfo@clivusmultrum.com, www.clivusmultrum.com
- Envirolet – A Canadian company, their toilets can be ordered through Houst and Herzog's. 800.387.5126, <http://www.envirolet.com/>

Water Saving Tips

These are just a few of the 100 tips listed on the Water Use it Wisely Website,

<http://wateruseitwisely.com/100-ways-to-conserve/index.php>

1. If your shower can fill a one-gallon bucket in less than 20 seconds, then replace it with a water-efficient showerhead.
2. Time your shower to keep it under 5 minutes. You'll save up to 1000 gallons a month.
3. Install dual flush toilets.
4. Put food coloring in your toilet tank. If it seeps into the toilet bowl, you have a leak. It's easy to fix, and you can save more than 600 gallons a month.
5. Use porous materials for walkways and patios to keep water in your yard and prevent wasteful runoff.
6. Make sure your toilet flapper doesn't stick open after flushing.
7. Make sure there are aerators on all of your faucets.
8. Install an instant water heater on your kitchen sink so you don't have to let the water run while it heats up. This will also reduce heating costs for your household.
9. Make sure your swimming pools, fountains, and ponds are equipped with recirculating pumps.
10. Insulate hot water pipes so you don't have to run as much water to get hot water to the faucet.
11. If your toilet was installed prior to 1980, place a toilet dam or bottle filled with water in your toilet tank to cut down on the amount of water used for each flush. Be sure these devices do not interfere with operating parts.
12. Turn the water off while you shampoo and condition your hair and you can save more than 50 gallons a week.
13. When you give your pet fresh water, don't throw the old water down the drain. Use it to water your trees or shrubs.

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14. For hanging baskets, planters and pots, place ice cubes under the moss or dirt to give your plants a cool drink of water and help eliminate water overflow.
15. Keep a bucket in the shower and by the sink to catch water as it warms up or runs. Use this water to flush toilets or water plants.