green education for the Family

In youth we learn, in age we understand

Green Lifestyles Collection

learn • understand • advocate

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FORWARD

Lifestyles represent the values by which we conduct our lives - 24 hours a day, 365 days a year. Green lifestyles should also represent the values by which we conduct our lives - 24 hours a day, 365 days a year. It is a belief that neither stops when we back out of our driveway, nor begins again when we return home.

Children are blessed with the innocence of youth to appreciate in a caring way about nature - the animals and plants they are connected with. As children develop, they can then begin to ***learn*** how their lifestyles impact the animals and plants they care about.

As adults, we ***understand*** how our lifestyles affect not only the natural environment, but our health and comfort as well. Importantly, we understand that it is not only the material possessions we pass on to our children, and that simply not being wasteful can go a long way in ensuring the environmental future we pass forward.

Green professionals ***advocate*** responsible environmental stewardship. With their developed green knowledge and experience, sustainable professionals provide the interpretation, design and delivery of high performance green building projects.

the family

In youth we learn, in age we understand Marie Von Ebner-Eschenbach

How Do You Perceive the Environment?

Unless you've lived in isolation the past several years, you have no doubt heard there is something going on with the environment. Again. The media has saturated the airwaves and printing presses with countless reports that, via Anthropogenic Global Warming (AGW), the glaciers are melting, the oceans are rising, the rainforests are rapidly becoming nonexistent, the temperature of the earth's near surface air and oceans has been rising since the mid-20th century - the end is near unless society succumbs to social engineering changes constructed by political and corporate sponsored programs such as Cap and Trade. It has been determined the earth is warming at an alarming rate and, with neither established protocol for peer review or debate, being proclaimed that the science is now settled. But what had science informed us in the past? Well, another report of near global destruction. In 1974, Time magazine printed an interesting expose titled *Science: Another Ice Age?* The scientific claim, then, was the earth was cooling at an alarming rate, as evidenced by scores of scientific data and examples, similar to the ones we read about today – global food shortages were predicted then as well. According to the Time magazine article, University of Toronto Climatologist Kenneth Hare, a former president of the Royal Meteorological Society warned:

> *"I don't believe that the world's present population is sustainable if there are more than three years like 1972 in a row."*

We could somehow surmise society took heed and, in the blink of a cosmic second, over corrected? Confused? You should be. Why then is this being discussed here? Because you, the consumer, must understand. In essence, there are two camps concerned about the environment. In one corner are the environmentalists – those who believe in Environmentalism. As expressed by the well-known author Michael Crichton from his September 15, 2003 speech at the Commonwealth Club, San Francisco, CA, *Environmentalism as Religion*:

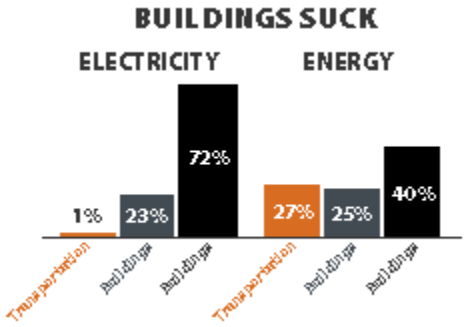
> ***"****One of the most powerful religions in the Western World is environmentalism. Environmentalism seems to be the religion of choice for urban atheists."….. "It seems facts aren't necessary, because the tenets of environmentalism are all about belief. It's about whether you are going to be a sinner or saved. Whether you are going to be one of the people on the side of salvation, or on the side of doom."….. "Because in the end, science offers us the only way out of politics. And if we allow science to become politicized, then we are lost. We will enter the Internet version of the dark ages, an era of shifting fears and wild prejudices, transmitted to people who don't know any better. That's not a good future for the human race. That's our past. So it's time to abandon the religion of environmentalism, and return to the science of environmentalism, and base our public policy decisions firmly on that."*

In the other corner stands those who are pro-environment, but anti-environmentalists. The pro-environment group is indeed concerned about the environment, but believes more reasoned assessments and subsequent remedies should be exercised - in other words, responsible sustainability.

So what do we know? What we do know is the fact the earth has survived numerous cyclic changes in climate and will continue to do so, with or without human intervention. However, what we have to understand is there is no argument that population growth and development practices and lifestyles do, in fact, cause harm to the environment. Those who are pro-environment get that. Environmental issues today are being successfully addressed through reasonable green building codes and green rating systems. For both residential and non-residential construction, green building codes are being mandated throughout the country to address energy and water conservation, carbon dioxide emissions and an array of other environmental and health issues. And many will do so to varying degrees by offering optional increased levels of green construction.

Also what we know is that the participation of the family, as consumers, is of vital importance to the success of responsible environmental stewardship. These are the voices of influence, who rarely succumb to the messages from extremists on either side of the argument. This is why it is important for them to learn about the argument and then understand the reasonable and responsible responses toward solutions.

What the Consumer Needs to Understand



Continuing further, consider these facts:

In the U.S., the impact of buildings on resources reveals the following statistics: 40% energy use, 72% electrical consumption, 13.6% potable water use and a 39% contribution to carbon dioxide emissions. Unabated, the quality of our indoor air can be up to 100 times more contaminated than the quality of the air outside – and Americans spend 90% of their time indoors. There are approximately 120 million homes in the U.S. and about 2 million new homes are constructed each year. The residential sector alone accounts for 22% of the total energy consumed in the U.S., 7% of the water usage while also contributing 21% of the carbon dioxide being emitted.

According to a recent survey, consumer motivation for a green lifestyle had revealed 21% were interested in protecting their children's future, 19% were concerned about increasing energy prices, 16% concerned about our reliance on foreign oil, while 14% were in the Global Warming camp. Yet another survey of 38,000 consumers revealed an astonishing 76% were interested in saving costs while only 24% placed the environment as their prime reason for being motivated toward green living. There is no denying that cost is an issue, as well it should be. This is why it is important to understand that responsible sustainability need not break anyone's bank. Every little bit is singularly important to the environment, somewhere.

Some consumers express disappointment with the performance of their green home. For those who have new homes that were or are being built to conform to some level of sustainability, they need to understand that only the vehicle is being provided to them. The owner of a new car must not only learn how to operate their new car, but also understand the importance of scheduled routine maintenance to the continued performance of their vehicle. As an example, take two families living next door to each other. One, the Jane family includes the mother, father and two teenage girls. Next door lives the John family with mother, father and two teenage boys. Each family buys an automobile. Identical automobiles - same make, model, power train and accessories. The Jane family drives responsibly, managing their daily trips and usage miles, obeying speed limits and having scheduled maintenance performed as recommended. On the other hand, there is John and his two teenage boys. Jumping in the car at every whim, total disregard for speed limits and changes the oil and spark plugs only when the car fails to start. Guess which family achieves the performance and reliability they expected when they purchased their brand new automobile? This same analogy applies to a sustainable building - that sustainable building is as well constructed and finely tuned as an automobile.

A sustainable home is greater than the sum of its pieces. While each of the individual pieces have meaning on their own, it's when taken together - working in unison – where the meaning changes. High performance buildings depend on these pieces being coordinated as a whole. For example, your sustainable home may use energy conservation measures designed to meet a certain performance level to save energy based on agreed to material and color selections. Change the colors from light to dark and flooring from carpet to ceramic and you've changed the original parameters. And, occasionally, these seemingly innocent changes are made too late, as the equipment had been installed. Now the dark colors reflect less light and absorb more of the sun's energy and the ceramic tile acts as a heat sink. More artificial lighting is required, possibly additional cooling needed and certainly more electricity. A sustainable design and construction team are aware of the design and parts that must be applied before they begin the project. However, given the fact that not only was the new home designed and built to specific parameters, the home will begin to degrade the day the keys are turned over. The homeowner needs to be aware of their responsibilities to ensure continued high performance. And this requires an education about their home and its design and construction parameters (e.g., energy and water conservation measures, indoor air quality equipment and operation). A green lifestyle may require a change in lifestyle. Learning the importance of how to use water and energy to maintaining the sustainable products and equipment are all fundamentally important.

For those who do not have a green home, a multitude of free or low cost options are readily available for them to do their part in protecting the environment and at the same time save money in operational and maintenance expenses by living green lifestyles.

Greenwashing

Greenwashing is any form of marketing or public relations that links a corporate, political, religious or nonprofit organization to a positive association with environmental issues for an unsustainable product, service, or practice. In some cases, an organization may truly offer a green product, service or practice. However, through marketing and public relations, one is wrongly led to believe this green value system is ubiquitous throughout the entire organization. Greenwashing, on a corporate policy level, can be difficult to accurately assess because, according to most accounts, you can't be just a little bit green. There has been much written about the motives of corporations adopting green policies - from being defeated by environmental activists to diverting public attention away from dismal records in other areas to being opportunistic by realizing they can make more green by being more green.

We, at the consumer and professional levels, aren't capable of discerning the reasons for a company's green purchasing or construction policies, or why they deliver green products to the marketplace. So what if there were ulterior motives as long as their policies and products do, in fact, help protect the environment? If the claims about green products are not misleading or false, the company should receive credit. However, Hefty trash bags, Pampers and Luvs disposable diapers and aerosol spray products, to name a few, have been taken to task for making false or misleading claims. Some self-proclaimed green producers found themselves being investigated by state attorneys general for false advertising and other offenses against the consumer.

For consumer protection against false or misleading marketing, there are groups who monitor green product claims.

The 3 Rs – Reduce, Reuse, Recycle

Reduce the amount of the Earth's resources that we use.
Reuse Don't just trash can it, could someone else make use of it?
Recycle Can the materials be made into something new?

The first green strategy any family can easily implement is to prepare a waste management program. All it takes is a little knowledge to understand the importance of waste reduction to the environment. So critical is this that reducing waste has been of paramount importance to the EPA due to the increased burden on our waste disposal sites. The environmental havoc created by landfills not only jeopardizes ecosystems but also increases the amount of deadly toxic gases released to the atmosphere, as well as polluting our freshwater supplies. As the population in the U.S. grows, more land will be required to handle the increased amount of waste being generated. The best way to accomplish waste reduction is to

reduce waste by reusing and recycling waste. This can be done in many ways and the EPA website has plenty of information regarding waste reduction and resource conservation.

Reusing products and materials we generally send to the waste stream is being made easier today. Reuse centers are sprouting up all over the country to take in articles such as building materials, clothing, appliances, batteries and just about any material or product that someone else may have a use for. The Salvation Army and Goodwill Industries are prime examples of reuse centers, and private enterprise is recognizing the financial rewards associated with collecting and reselling. The benefits of this green strategy are enormous. Most importantly, waste management extends the life cycle of the material or product, thereby reducing the product's embodied energy. Embodied energy is the amount of energy required to extract, harvest, manufacture and deliver the product to market. Instead of being a *cradle-to-grave* (takes, makes, wastes) product, it becomes a *cradle-to-cradle* product. Think about this the next time you summarily discard an article of clothing or something that is no longer of value to you. How much of our natural resources were required to produce that article? Is there someone less fortunate who could put this to good use? Or was someone looking to buy something very similar to that which you no longer need, yet this material still has some useful life remaining. It may save a tree, a few gallons of water, a few tons of fossil fuel or the home to a nest of birds or squirrels, somewhere.

There are two types of recycled materials. Preconsumer recycled content material and postconsumer recycled content material. Preconsumer content is that which is scrap material generated at the source or manufacturer and has never reached the consumer. Typical items such as metal shavings, wood chips, carpet materials, denim fabric, paper mill products, or any off-fall or scrap material the manufacturer does not reuse for the same purpose. A landscaper may pick up wood chips from a lumber mill to use for mulching landscape beds. Those scraps of denim fabric can be reused for building insulation.

On the other hand, postconsumer content are materials which have been manufactured and delivered to the consumer market, used and no longer serve a useful purpose to the consumer. A remodeled kitchen may find the old cabinets set out curbside for someone to pick up and recycle. Many products manufactured today consist of a combination of preconsumer and postconsumer recycled content. Recycle centers are widely available today that separate waste into specific groups that can be reused or remanufactured. It cannot be overstated how critical it is to Reduce, Reuse and Recycle. Again, remember that your discarded items caused a reduction to one or more of our natural resources as well as wreaking havoc extracting the materials, used natural resources in manufacturing and delivering the product while also releasing carbon dioxide into the atmosphere.

According to the EPA, yard trimmings and food residuals together constitute 26 percent of the U.S. municipal solid waste stream. That's a lot of waste to send to landfills when it could become useful and environmentally beneficial compost instead.

Here is an interesting list of 11 recycling facts, according to dosomething.org:

1. The average American uses 650 pounds of paper each year – 100 million tons of wood could be saved each year if all that paper was recycled.
2. Americans use 2.5 million plastic bottles every hour.
3. A typical family consumes 182 gallons of soda, 29 gallons of juice, 104 gallons of milk, and 26 gallons of bottled water a year. That's a lot of containers that can all be recycled!
4. About 80% of what Americans throw away is recyclable, yet our recycling rate is only 28%.
5. Every month Americans throw out enough glass bottles and jars to fill up a giant skyscraper (think: Empire State Building), but all of these jars are recyclable!
6. Plastic bags and other plastic garbage thrown into the ocean kill as many as 1,000,000 sea creatures a year! Ever heard of the Great Pacific Garbage Patch? It's twice the size of Texas and is floating somewhere between San Francisco and Hawaii. It's also 80 percent plastic, and weighs in at 3.5 million tons.
7. Recycling one ton (about 2,000 pounds) of paper saves 17 trees, two barrels of oil (enough to run the average car for 1,260 miles), 4,100 kilowatts of energy (enough power for the average home for six months), 3.2 cubic yards of landfill space, and 60 pounds of pollution.
8. The 17 trees saved by recycling one ton of paper can absorb a total of 250 pounds of carbon dioxide out of the air each year.
9. If all of our newspapers were recycled, we could save about 250 million trees each year! If every American recycled just one-tenth of their newspapers, we could save about 25 million trees each year.

10. More than 20 million Hershey's Kisses are wrapped each day, using 133 square miles of aluminum foil. Believe it not, ALL that foil is recyclable, but not many people realize it so most it goes in the trash!
11. Recycling one aluminum can saves enough energy to run a TV for three hours. In spite of this, Americans throw away enough aluminum to rebuild our entire commercial fleet of airplanes every three months!

Granted, reducing the amount of waste we generate offers us little, if any, financial benefit. But when you fully understand the positive results it has to our environment with little effort or cost, it should be everyone's first step toward responsible environmental sustainability. Even those who have no interest in green lifestyles should find little argument for not supporting waste management.

Water Conservation

Water is vital to the survival of everything on the planet and is limited in supply. The earth might seem like it has abundant water, but in fact less than 1 percent is available for human use. The rest is either salt water found in oceans, fresh water frozen in the polar ice caps, or too inaccessible for use. While the population and the demand on freshwater resources are increasing, supply remains constant. Just imagine, in the U.S., 340 billion gallons of fresh water is withdrawn from rivers and reservoirs each day to support residential, non-residential, agricultural and recreational activities. And on an annual basis, we extract more than 3,700 billion gallons of water than we return to the natural water system to recharge aquifers and other water sources, and it is estimated that 35 states will deplete their fresh water reserves by 2015. Shockingly, 20% of the water we consume annually is used for irrigation. If all U.S. households installed water-efficient appliances, the country would save more than 3 trillion gallons of water and more than $18 billion dollars per year! Also, when we use water more efficiently, we reduce the need for costly water supply infrastructure investments and new wastewater treatment facilities. It takes a considerable amount of energy to deliver and treat the water you use every day. American public water supply and treatment facilities consume about 56 billion kilowatt-hours (kWh) per year—enough electricity to power more than 5 million homes for an entire year. For example, letting your faucet run for five minutes uses about as much energy as letting a 60-watt light bulb run for 14 hours.

For many, our yards are our outdoor homes that are beautiful and great spaces for relaxing and by taking care of our lawns and gardens properly, we can save money, time, and help protect the environment. The EPA's GreenScaping program encompasses a set of landscaping practices that can improve the health and appearance of your lawn and garden while protecting and preserving natural resources. Save money by eliminating unnecessary water and chemical

use. Save time by landscaping with plants that require less care. Protect the environment by conserving water supplies, using chemicals properly and only when necessary and reducing yard waste by recycling yard trimmings into free fertilizer and mulch. Did you know that watering too much or too little is the cause of many common plant problems? You can have healthier plants, save money on water bills and conserve precious water resources by learning to give your lawn and garden just what they need, and no more. Have your landscaper group plants according to their water needs. Specify plants, shrubs and grasses that are indigenous to your climate. These types of plants have acclimated to the regional climate and require less, if any, irrigation or pesticides. Rebuying means rethinking your purchasing habits. Look for products that meet your needs but have a better environmental profile than your current product purchases. Consider biobased, recycled content, water efficiency, energy efficiency, and other environmentally preferable aspects in your purchasing decisions. A few examples include water and energy efficient products, organic pesticides and fertilizers, manual or electric yard equipment, and solar landscape lighting. Rebuying is key to sustaining recycling markets and it aids in the development of technology that conserves resources and prevents waste. Another strategy is using rain barrels to collect water runoff from the roof. A roof area of only 1,000 square feet can provide about 600 gallons of water during a 1 inch rainfall. Check with your local stormwater utility, as many are now providing rain barrels free, or at little cost.

On the inside of our homes, there are also easy and inexpensive ways to reduce our water consumption. To begin, it would be helpful to understand the EPA's partnership program – WaterSense. Since the program's inception in 2006, WaterSense has helped consumers save a cumulative 46 billion gallons of water and $343 million in water and sewer bills, reductions of 4.9 billion kwh of electricity and 1.75 million metric tons of carbon dioxide through the use of WaterSense labeled products. If you are building a new home, your plumbing supplier or contractor can provide advice for selecting WaterSense products for your faucets, showerheads and toilets. If you are remodeling or need to replace a broken or tired fixture, use a WaterSense fixture at little additional cost. For new construction, a properly designed, efficient water heating system should be incorporated into the new home. If you do anything to reduce the amount of heated water you use, you have also reduced the amount of energy consumed. It takes energy to heat water, so you get bonus points here that should be considered in your decision making process.

Here are a few tips on saving water inside your home:

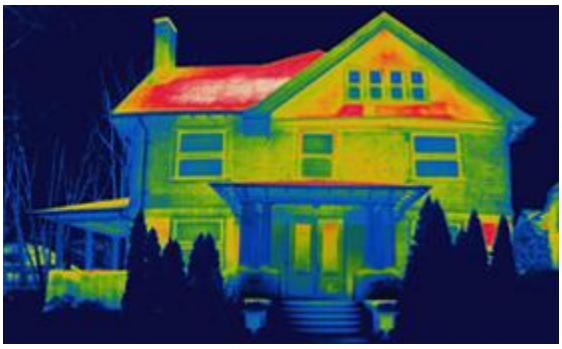
Toilets: Consider installing a WaterSense labeled toilet, which uses 20 percent less water while offering equal or superior performance. Compared to older, inefficient models, WaterSense labeled toilets could save a family of four more than $90 annually on its water utility bill, and $2,000 over the lifetime of the toilets. Check for toilet leaks by adding food coloring to the tank. If the toilet is leaking, color will appear in the bowl within 15 minutes.

Faucets: Installing a WaterSense labeled aerator is one of the most cost-effective ways to save water. Also consider replacing the entire faucet with a WaterSense labeled model. Either way, you can increase the faucet's efficiency by 30 percent without sacrificing performance. Repair dripping faucets and showerheads. A drip rate of one drip per second can waste more than 3,000 gallons per year.

Tub vs Shower: A full bathtub can require up to 70 gallons of water, while taking a 5-minute shower uses only 10 to 25 gallons. Turning off the tap while you brush your teeth can save 8 gallons per day.

Washing Dishes and Clothes: Wash only full loads of dishes and clothes or lower the water settings for smaller loads. Replace your old washing machine with a high-efficiency, ENERGY STAR® labeled model, which uses up to 50 percent less water and electricity.

Energy Conservation



For many American households, a large portion of their monthly budget is spent on energy bills and filling their gas tanks. Unfortunately, a large portion of the energy consumed annually by the home is wasted. And each year, electricity generated by fossil fuels for a single home puts more carbon dioxide into the air than two average cars. And as for the road, transportation accounts for 67% of all U.S. oil consumption. Electricity is most often generated by burning fossil fuels, such as oil, natural gas and coal. The negative effects to the environment at each step of production and use, beginning with the extraction and transportation, followed by refining and distribution, and ending with consumption are devastating. From total destruction of our existing ecosystems, to polluting our freshwater streams and rivers, to releasing harmful pollutants such as carbon dioxide, sulfur dioxide, nitrogen oxides, mercury and small particulates. The good news is that there is a lot you can do to help mitigate the burden to the environment by reducing energy and gasoline consumption and at the same time save money.

There are so many ways a family can conserve energy. The first recommendation is to visit the U.S. Department of Energy's Energy Savers website for what essentially amounts to one-stop shopping for ideas and products. Here, you will discover a wealth of information and tips on topics such as windows and doors, lighting and daylighting, insulation and air sealing, appliances, heating and cooling, landscaping, vehicles and designing and remodeling. U.S. Department of Energy Energys Savers Tips website

You can start today by making small changes, and then to cut your energy use up to 25%, consider long term strategies. The key to achieving these savings in your home is a whole-house energy efficiency plan. To take a whole-house approach, view your home as an energy system with interdependent parts. For example, your heating system is not just a furnace—it's a heat-delivery system that starts at the furnace and delivers heat throughout your home using a network of ducts. Even a top-of-the-line, energy-efficient furnace will waste a lot of fuel if the ducts, walls, attic, windows, and doors are not properly sealed and insulated. Taking a whole-house approach to saving energy ensures that dollars you invest to save energy are spent wisely. Energy-efficient improvements not only make your home more comfortable, they can yield long-term financial rewards. Reduced utility bills more than make up for the higher price of energy-efficient appliances and improvements over their lifetimes. In addition, your home could bring in a higher price when you sell.

Home Energy Assessments: A home energy assessment, also known as a home energy audit, is the first step to assess how much energy your home consumes and to evaluate what measures you can take to make your home more energy efficient. An assessment will show you problems that may, when corrected, save you significant amounts of money over time.

Space Heating and Cooling: Heating and cooling account for about 56% of the energy use in a typical U.S. home, making it the largest energy expense for most homes. A wide variety of technologies are available for heating and cooling your home, and they achieve a wide range of efficiencies in converting their energy sources into useful heat or cool air for your home. In addition, many heating and cooling systems have certain supporting equipment in common, such as thermostats and ducts, which provide opportunities for saving energy. When looking for ways to save energy in your home, be sure to think about not only improving your existing heating and cooling system, but also consider the energy efficiency of the supporting equipment and the possibility of either adding supplementary sources of heating or cooling or simply replacing your system altogether. When replacing or upgrading an existing heating and cooling system, it's important to first consider the limitations imposed by your current system and available energy sources. When selecting a heating and cooling system for a new house, your options are generally much wider, although your builder or developer may place limitations on your choices.

Water Heating: Heating water consumes energy and can account for 14%–25% of the energy consumed in your home. You can reduce your monthly water heating bills by selecting the appropriate water heater for your home and by using energy-efficient water heating strategies. Consider using EPA WaterSense plumbing fixtures.

Lighting: Learn why turning your lights on and off affects the life cycle of the lamp. Did you know that with the standard incandescent lamp, only 10%-15% of the energy consumed provides light? The rest is turned into heat. Consider alternative solutions such as the compact fluorescent lamp, or CFL. Perhaps the installation of a skylight or two can reduce the amount of artificial light needed, while also adding to the comfort of your family.

Appliances and Home Electronics: If you live in a typical U.S. home, your appliances and home electronics are responsible for about 20% of your energy bills. These appliances and electronics include the following: clothes washers and dryers, dishwashers, refrigerators and freezers, water heaters, televisions and dvd players, home audio equipment, computers. Consider using ENERGY STAR rated equipment.

Windows, Doors and Skylights: Energy-efficient windows, doors, and skylights—also known as fenestration—can help lower a home's heating, cooling, and lighting costs. Learn how these are rated and investigate your options using energy efficient windows, doors and skylights.

Insulation and Air Sealing: You can reduce your home's heating and cooling costs through proper insulation and air sealing techniques. These techniques will also make your home more comfortable.

Landscaping: A well designed landscape not only can add beauty to your home but it also can reduce your heating and cooling costs using strategies such as shading. Landscaping for energy efficiency provides enough energy savings alone to return an initial investment in less than 8 years.

Indoor Air Quality

Indoor air pollution is among the top five environmental health risks. Americans spend on average 90% of their time indoors, where levels of pollutants can run up to 100 times higher than outdoors. With these pollutants affecting the health of 17 million Americans who suffer from asthma and 40 million who have allergies, millions of days of school and work are missed annually. The health costs alone can be staggering, not to mention lost wages and production. Indoor air quality becomes an even more important issue when there are children to consider. The two EPA websites linked here have a great deal of information on describing the importance of improving the quality of the air inside our homes and how to best manage indoor pollutants.

Three basic strategies to reduce pollutant concentrations in indoor air are ***source control***, ***ventilation***, and ***air cleaning***.

Source control eliminates individual sources of pollutants or reduces their emissions and is usually the most effective strategy for reducing pollutants. There are many sources of pollutants in the home that can be controlled or removed, such as carbon monoxide, radon, formaldehyde, mold, dirt and dust. Today, low or no emission volatile organic chemical (VOC) products are readily available such as paints, carpets and furniture that reduce or eliminate the off-gassing of toxic chemicals. The odors you smell whenever you walk into a freshly painted or carpeted room are caused by the off-gassing of volatile chemicals. Another strategy for source control is to provide some type of walk off matt at the location of the primary entrances to your home, such as the main entry and the door from the garage to the house.

Ventilation is also a strategy for decreasing indoor air pollutant concentrations. It exchanges air between the inside and outside of a building. The introduction of outdoor air is important for good air quality. In a process known as infiltration, outdoor air flows into the house through openings, joints, and cracks in walls, floors, and ceilings, and around windows and doors. Natural ventilation describes air movement through open windows and doors. Most residential forced air-heating systems and air-conditioning systems do not bring outdoor air into the house mechanically. Two primary ventilation methods can be used in most homes: general ventilation and local ventilation. Advanced designs for new homes are starting to add a mechanical feature that brings outdoor air into the home through the HVAC system. Some of these designs include energy efficient heat recovery ventilators to mitigate the cost of cooling and heating this air during the summer and winter. Individual exhaust equipment should always be used at point sources such as bathrooms and cooking appliances.

Air cleaning may be useful when used along with source control and ventilation, but it is not a substitute for either method. The use of air cleaners alone cannot ensure adequate air quality, particularly where significant sources are present and ventilation is insufficient. While air cleaning may help control the levels of airborne particles including those associated with allergens and, in some cases, gaseous pollutants in a home, air cleaning may not decrease adverse health effects from indoor air pollutants. However, in all cases, consideration should be given for installing high efficiency air filters in your heating and air conditioning systems. The EPA has an informative guide to Indoor Air Quality and Guide to Air Cleaners in the Home.

A Final Word for the Family

If you are just beginning to explore the world of green lifestyles, whether it entails a simple one-step-at-a-time approach in lifestyle adjustment, or something more committed like remodeling your existing home, or perhaps building a new green home, the ordeal can be daunting, confusing and frustrating. There are plenty of websites available today that offer advice and product selection for living green lifestyles or remodeling a room in your home.

However, if you are planning on adding a major addition to your home or building new, you would be well advised to seek advice and assistance from qualified professionals who have the knowledge and experience designing and building green homes. Even if you are not interested in a home certified by one of the green building rating systems, you should consider the fact that a professional can offer guidance and services that will protect your environmental commitment as well as your financial investment. This is much more complex than merely understanding that more insulation is better, or water efficient fixtures save money.

Look into the local resources available in your area for experienced designers, architects, home remodelers and builders. Check to see if there is a local Home Builders Association or regional USGBC chapter, or other professionals who have reputable green building credentials. Visit several websites, if for no other reason than just being familiar with the technologies and strategies offered today that address what is important to you. If and when you do meet with a professional, you will be better prepared to ask pertinent questions or understand some of the dialog. And please don't be shy about posting questions on the family section of this website, or send us an e-mail at contact@studio4llc.com.

You may have noticed the absence of content with regard to transportation. The adverse environmental effects from transportation are well documented, but short and long term solutions are in dispute. Electric cars have fallen off the radar, ethanol certainly has been proven to be a bust, for several reasons, and the jury is still out on the immediate

contributions, both positive and negative, from hybrid vehicles. Just drive responsibility and manage the amount of miles you drive, with whichever vehicle you feel comfortable owning.

Websites and Blogs

Please visit ***the family*** category at www.studio4llc.com for direct links to the following websites:

The list of reference websites and blogs included at this level grew to be much longer than originally intended, and for good reason. The sites located at the top of the list were selected for their content focusing on environmental issues that need to be addressed if we are to adopt responsibly sustainable lifestyles - reducing waste generation, energy and water conservation, and indoor air quality. The remaining sites offer additional consumer oriented information, strategies, products and commentary.

Green Building: EPA's Green Building Web site is a "portal" site designed to give users one convenient gateway from which to access numerous EPA programs and topics related to environmentally friendly building

Reduce, Reuse, Recycle: the EPA site for waste reduction that challenges all citizens to conserve our natural resources by committing to reduce, reuse, and recycle at home, in your community, and at the office; learn what you can do to make a difference

WaterSense: EPA joint program on water conservation, products and resources; a good place to start learning about water conservation

GreenScaping – The easy way to a Greener, Healthier Yard: EPA website for water conserving landscaping strategies including information on maintaining healhier soils with compost and mulch

Save On Energy: EPA website with easy to achieve energy saving tips in the home

H2ouse: great interactive visual website that illustrates ways to save water in each area of your home

Energy Savers: U.S. Department of Energy site with energy saving tips and products for your home, vehicle and workplace; a good place to start learning about energy conservation

ENERGY STAR: EPA and U.S. Department of Energy joint program; like the Energy Savers site, another good place to start learning about energy conservation

Qualified New Homes: EPA's ENERGYSTAR website for new homes

Home Improvement: EPA's ENERGYSTAR website for home improvement projects

Indoor Air Quality: EPA website addressing the quality of air inside the home; room-by-room tour of the IAQ home, addresses mold, asthma, radon, carbon monoxide and more

Guide to Air Cleaners in the Home: EPA webpage for valuable information regarding indoor air quality in the home; it's important to know there is more to air filters than what aisle they are located in at your local hardware store

Green Home Guide: USGBC site with reviews and advice for **green** remodeling and living; articles, directories of recommended products and **green** building professionals and retailers

REGREEN Program: USGBC site focused on home remodeling projects; plenty of useful information on bathroom, kitchen and basement remodels as well as additions, energy retrofits, weatherization and green products

Forest Stewardship Council: the Forest Stewardship Council (FSC) promotes environmentally appropriate, socially beneficial, and economically viable management of the world's forests

Sustainable Forestry Initiative: like the Forest Stewardship Council, the Sustainable Forestry Initiative (SFI) label is a sign you are buying wood and paper products from a responsible source, backed by a rigorous, third-party certification audit

DOSOMETHING: 110 facts about Recycling

The Green Guide: National Geographic source for greening your life; includes tips on saving energy and water as well as sections on parenting, food and travel and a buying guide

David Suzuki Foundation: Small steps make a big difference on the path to living more sustainably and The David Suzuki Foundation will show you how to transform your home, office and community into a healthy and sustainable one; from everyday green living tips to helpful resources on fighting climate change, this site can help you make informed decisions to reduce your environmental footprint

Inhabitat: dedicated to greener living through greener designs – from architecture to salt and pepper shakers; there is also a section devoted to green fashion and art

Treehugger: the mother of all environmental blogs covering general environmental news, events and products

Mother Nature Network: full of tips and tricks about how to “improve your world” – which also happens to be their motto; includes a “Family” section for tips on how to get kids involved

Lighter Footstep: part of the Mother Nature Network, Lighter Footsteps is all about sustainable living and leaving less of an imprint by making greener living choices

ecoki: not as extensive as Inhabitat, this site offers a well-rounded selection from green living to food

Care2: as mentioned in the Beginners Level, this is a great site for all ages, as witnessed by the 14 million members

Charity Guide: a 501(c)(3) nonprofit organization whose mission is to inspire and facilitate **flexible** volunteerism with a Volunteering on Demand approach; how you can make a difference in 15 minutes, in a few hours or while on vacation, for a variety of concerns including children’s issues, animal welfare, health and safety, community development, poverty and environmental protection; however, the relevancy here is the information offered in the sections addressing the environmental education of children and consumers; many common sense tips on how consumers can be environmentally responsible and save money

National Center for Healthy Housing: create healthy and safe homes for children through practical and proven steps

Best Green Home Tips: the usual selection of topics but also adds tips for homebuilding and remodeling

PlanetPals: a community dedicated to making environmental education fun – for kids and parents

Get With Green: if you're remodeling your home or building a new one, subscribe to Get With Green to learn about all the ways you can make your living space environmentally friendly

Start: U.K. based website that offers a broad selection of topics ranging from food, travel, recycling, saving water, things to think about and includes a blog

Inhabitots: with the motto “Sustainable design for the **next generation**“, Inhabitots is the baby / parenting focused website in the Inhabitat family with a focus on parents interested in ecofriendly choices for their children; one of the best selections of links on various topics concerning parenting, moms, infants, food and the entire gamut of children related interests

Great Green Baby: a site for the green parent, Great Green Baby reviews eco-friendly baby products

Healthy Child: has five easy steps to making your home more safe for babies and children with natural solutions to common problems that usually send people to toxic solutions

Mindful Momma: there are a lot of blogs out there about green parenting - it's an entire niche unto itself - and Mindful Momma is one of the best

Green and Clean Mom: her site proudly boasts how being green can be sassy, sexy and fun! Sommer is a mom who is trying her best to be some shade of green every single day and provides a listing of her top 100 sites that support her goals

Pays to Live Green: not only features green living ideas and advice, but shows how living green ultimately pays off in saving money – and the environment

Earth Easy: information and practical products for sustainable living, easy-to-navigate pages with encyclopedic information

Green Living Tips: a blog very well done at explaining issues, with stories and tips, related to building, cleaning, clothing, energy, family, food, health, home, pets, water and other topics.

The Green Guy: the Green Guy writes about "ethical living" and about how to go green without making drastic, life-altering changes to your routine

Got2BeGreen: a blog focused on all sorts of cool green technology; one of the top rated blogs of any category

the daily green: the consumer’s guide to the green revolution offering news, tips, living, homes, cuisine and much more

The Chic Ecologist: eco chic sustainable green living

It’s to Live Green: filled to the brim with important green living tips, tricks and ideas

Michelle Kaufmann Studio: one of the architectural pioneers in modular green home design, this is a more sophisticated offering of environmental topics

Haute Nature: ccologically based creative ideas, art & green products for your children, home and lifestyle, blending style with sustainability

Buy Green: source for green products, offering a wide variety of ecofriendly products, with good information for consumers; has a rating system for each product according to its degree of greenness

Alternative Consumer: environmentally friendly products

ecoFabulous: reviews of great green stuff for the house, home, and body

Saving the Planet, One Bag at a Time: recycled, reusable canvas bags; they're everywhere, you can customize them, and now they have a planet-saving blog

Reusable Bags: is the ultimate online destination for cracking your plastic bag habit; they have so many cool, affordable, sustainable, stylish, compact and multi-functional bags that there's just no excuse for not making the switch from plastic

Eco Friend: EcoFriend is a blog about all those sexy, environmentally aware products you want but can't afford

Hippy Shopper: Hippy Shopper is about all the eco-friendly stuff you covet

Sustainable Style: you can have your cake and eat it too, or in the case of Sustainable Style look good **and** do well for the environment

EcoGeek: kinda says it all - writes about gadgets that are earth friendly

Life Googles: a great general green living blog, with a slight focus on TV and movies as they relate to the environment

Green Options: a good general enviroblog and community based out of Berkley, California

ecoStreet: a well-written and actively updated general environmental news and commentary blog

SelfSufficientish: a blog about how to live more sustainably in an urban environment; no access to a rooftop garden, or a compost bin in your tiny apartment? this is the blog for you

Green TV: the broadband TV channel for **environmental** films http://www.green.tv/?set_location=en Green Thinkers: an informal forum for ideas and thoughts on how to live a more green life

World Environmental Organization: if you haven't seen enough already, here is a categorized selection of 1,000 environmental websites

Simple Steps: NRDC Simple Steps aims to fill this void in consumer information, and be the premiere "news-you-can-use" portal, the go-to info-site on how to be safe, be secure, live well at home and in your community

WebEcoist: one of the most popular green websites in the world, WebEcoist is a global source for sensational, educational and inspirational green design and sustainable technology as well as environmental science and natural wonders

Cameron Diaz's Favorite Green Websites

greenwashing: 10 Ways to Know Greenwashing When You See It

SourceWatch: greenwashing site giving rules-of-thumb ideas for detecting greenwashing

GREENWASHING INDEX: another greenwashing alert site

TerraChoice: authors of the Sins of Greenwashing studies