News Article:
September 23, 2009
Environment

Going "green" now will save you some green later

David W. Littman, Integrated Design Technology

Good news for homeowners who are "green" conscious and want to reduce their carbon footprint. Also for those who simply want to reduce their energy bills, or who are first time home-buyers and want to qualify for a higher FHA loan. Now is the time to go "green" and save some green in the process.

As part of the American Clean Energy and Security Act of 2009, federal agencies are now tasked with creating incentives for consumers to buy energy efficient dwellings or upgrade existing dwellings to reduce energy consumption by at least 20%, following renovations. Provisions within the bill include a directive to the Federal Housing Administration to insure a minimum of 50,000 new energy efficient dwellings within the next three years and provide additional funds to purchase an existing home, as long as the funds will be used to substantially lower the property's annual energy consumption (a 5% figure is being considered, which is equivalent to $15,000 additional on a $300,000 loan).

The bill will also require real estate appraisers to take energy savings improvements into account as they value houses in the future and federal financial regulators would be directed to support the establishment of "green banking centers" inside banks and credit unions to help consumers obtain financing for "green" home improvements. In these new centers consumers would have access to information about the types of available products and technologies and costs of improvements, as well as how to obtain energy audits and ratings for their homes. 1

Although solar panels are one of the most commonly considered "green" improvements these days, thanks in part to the state rebate program and now the federal tax credits, there are a myriad of other ways to reduce a dwelling's energy consumption by at least the 20% figure defined by the FHA. If those energy savings improvements are implemented with the addition of solar panels, the system could potentially be 20% smaller or the excess power could be sold back to the power company.

Unfortunately these days, due to the still moribund economy, many homeowners are not able to finance a solar power system, even with the available rebates and tax credits. More good news! Several solar panel firms offer leases and "power purchase agreements" that let a solar power firm install and maintain its panels on consumers' homes. The homeowners pay a monthly fee for the clean energy at a rate lower than their current monthly power bill. The upfront costs are minimal and depend upon the lease agreement. Contracts with the solar firm are typically 15 to 20 years and can be transferred to a new owner if the home is sold. 2

If you are a homeowner who is not inclined to hassle with a solar panel power system but still want to save energy, there are other "green" upgrades to consider. Following are some examples of upgrades that will allow you to accomplish the targeted 20% reduction:

- Install additional heavy-duty attic insulation and caulk the joints between the ceiling joists and walls
- Replace existing felt weather-stripping at exterior doors with new molded rubber weather-stripping
- Replace all interior and exterior light bulbs with compact fluorescent or LED bulbs
- Replace light switches with occupant-sensing automatic shut-off switches – use motion-sensor receptacles for exterior lighting – or dimmers to control the lighting wattage and save more energy.
- Add a timer to the HVAC thermostat set to turn off the A/C or heat during unoccupied times
- Replace windows and sliding glass patio doors with dual-glazed units specifically made for retrofits.
- Replace the central air-conditioner with a new high-efficiency Energy Star® rated unit. Also consider replacing the furnace unit with an Energy Star® rated blower motor.
- Install a new "cool-roof" system over the existing roofing material to reflect solar heat and reduce the "heat-island effect" in the neighborhood

Depending upon the age of the home, a reduction in energy consumption of greater than 20% could be realized. Once you factor in the available rebates, courtesy of the utility companies, the state and the federal government, and based upon the upgrades, up to 50% of the upfront costs could be recouped by the homeowner.

For those homeowners who are financially able and motivated to make further reductions in their carbon footprint and save additional energy, there are more "green" upgrades and technologies available to help achieve this. In addition to the upgrades mentioned above, the following should be considered:

- Replace major appliances and toilet fixtures - refrigerator, oven/stove, dishwasher, micro-wave oven and trash compactor (as applicable) with new Energy Star® rated appliances and low-flush toilet fixtures (1.6 GPM or less)
- Replace television sets with the new eco-friendly LED HD TV sets that consume 40% less power than a conventional LCD TV set and more than 50% less than plasma-screen televisions.
- Replace water-heater with a solar thermal water-heater system. The greatest energy savings would be yielded by replacing an electric water-heater. An alternative for gas-fired water-heaters would be to convert to a tank-less type unit
- Replace standard irrigation sprinkler heads with drip-irrigation heads and reset the existing timers as necessary. A maximum of 15 minutes per day is recommended – 7 minutes in the morning and 8 minutes in the evening.
- Replace landscaping with indigenous plants or adapted, non-invasive plants that require infrequent watering. Consider replacing all or portions of lawn areas with succulents, such as sedum, that add color and variety, but require only bi-weekly watering.
- Plant deciduous trees (that lose their leaves during autumn) adjacent to south and west-facing walls for shade in the summer and solar heat-gain in the fall and winter months. If a solar panel system is also being considered, locate the trees so that only the walls are shaded and not the roof. This will require future tree-trimming once the trees reach full maturity.
- Add awnings to south and west-facing windows and patio areas. For maximum energy savings, install retractable type awnings to allow solar heat-gain during the fall and winter months. Awnings also add aesthetic appeal to almost any home.
- Install new dual-glazed skylights at east and north-facing sloped roof areas to increase natural light within rooms and decrease electrical lighting use during daylight hours.

And for the truly adventurous homeowners that want to expand their adoption of "green" technologies even further, consider making your own bio-fuel for your car. That's right! There is a start-up company, E-Fuel Corp. and its distributor, GreenHouse International Inc. (Shaquille O'Neal is an investor in Greenhouse) that provides a system called the MicroFueler, which converts organic waste into ethanol fuel. The system consists of a 250 gallon tank and bio-converter (or digester) that converts organic waste into ethanol fuel in minutes and doubles as the fuel pump, which works similarly to those at gas stations. The only waste product from the system is distilled water.

Of course you would have to convert your car to incorporate a flex-fuel system in order to use ethanol fuel, but the conversion is relatively inexpensive for modern automobiles with their computer-controlled engine management systems. The upshot is that you would only pay $2.00 per gallon and not have to deal with the price fluctuations of petroleum-based fuels.

The approximate cost of the system is around $10,000 and is eligible for a $5,000 federal tax credit, which would help the system pay for itself in just half the time it would normally take. The bio-waste is supplied by the equipment distributor so you won't run out of a sustainable supply of fuel as long as consumers keep consuming. [3]

There are even more "green" products, methods and technologies that are currently on the market that could be implemented should a major renovation, an addition or design of a new home, or even a commercial building, be considered.

The "greening" of America has begun in earnest, partially powered by the energy bill and stimulus money the federal government is pumping into the economy, partially by U.S. Green Building Council LEED® accredited, "green - conscious" designers, architects, engineers, developers, contractors, manufacturers and others (think of celebrities Ed Begley, Jr. and David Arquette) and partially by those emerging eco-conscious consumers who want to do their part for the environment, while also recouping their own green in the process.

For those homeowners who want to join in the "greening of America" or those that simply want to save money on their future utility bills and take advantage of the rebates and tax credits currently available - while they are still available - the first step is to arrange for an energy audit of your home. The auditor will analyze the energy efficiency of your dwelling and a comprehensive report will be prepared that outlines the steps to take to reduce energy loss.

Don't know how to get an energy audit? CleanEdison, a company that promotes sustainability and green building practices by providing green education and training to companies and individuals, has a program called Healthy Homes Partnership, where low-income families in need of an energy audit can obtain one - possibly free of charge. CleanEdison puts together their Building Analysts-in-training with qualifying homeowners to perform the audit at no cost. To see if your home qualifies for a free energy audit, contact Jeremy Seltzer at healthyhomes@cleanedison.com or call (888) 513-3476.

Once you have the report from the energy audit the next step is to determine the costs of the upgrades and then factor in the available rebates and tax credits to figure the total out-of-pocket dollars on your part. Then, to figure out how long it will take to recoup on your investment, tally up the projected annual savings and divide by the cost of each of the various components.

Some upgrades will pay for themselves sooner than others. For example:

- A photovoltaic solar power system would take 10 – 15 years to pay for itself (the life of the panels are typically 25 – 30 years)
- A solar thermal water-heater would take around 4 – 7 years, depending upon if it were replacing an electric or gas water-heater
- A bio-waste converter fuel system would take about 2 years to pay for itself

For those homeowners who are not do-it-yourselfers, or simply don't have the time to hassle with the research, purchasing and supervising the installation of the upgrades on their own, there are "green" design companies that, for a fee, offer their services to assist homeowners - as well as business owners – to develop a comprehensive package of energy-savings components that is tailored from the energy audit. As part of their service, some firms may also assist the homeowner to obtain an energy audit and solicit bids from the various manufacturers and installers of the products or systems.

One design firm, Integrated Design Technology, (http://www.integrateddesigntechnology.com) a member of the U.S. Green Building Council – Orange County chapter, with LEED® accredited design consultants, goes one step further by collaborating with renowned and "green" general contracting firms to not only assist homeowners or business owners with preparing the upgrade packages for bids, but also for a complete and coordinated installation of all the components as a one-stop-shop experience. This saves the homeowner from the headache of dealing with up to 10 different building trades and the coordination required for an orderly and timely installation of the upgrades. And the firm's consulting fees are paid for by the contractor instead of the homeowner.

For a directory of USGBC LEED® accredited "green" design professionals in your area contact your local chapter of the U.S. Green Building Council.

Now, armed with knowledge of the benefits of going "green" while saving you some green in the process, the next step is up to the homeowners of America to take advantage of this once-in-a-generation opportunity. Prices have never been lower due to the economic environment and slow-down in construction activity. Combined with the rebates and tax credits, which won't last forever – in some cases they expire at the end of this year unless Congress extends them – this is the time to maximize your purchasing power for "green" investments that will net you immediate savings and future savings on your utility bills, not to mention reduce your carbon footprint and help the environment in the process.

1. Sunday, July 26, 2009 L.A. Times article by Kenneth R. Harney: **Big push towards energy efficiency**
2. Sunday, August 2, 2009 L.A. Times article by Marla Dickerson: **You can go solar – without going broke**
3. Saturday, August 22, 2009 L.A. Times article by Susan Carpenter: **Who needs gasoline if you have old beer**?