Intro to Green Building

BY PETER BRONSKI, SUSTAINABLE COMMUNITIES PROGRAM COORDINATOR

This green home built by WCI serves as a demonstration model of green building for potential new homeowners.

Buildings, much like anything else in this world, have an environmental impact. The impact can be local and obvious, like the disturbance of a site or clearing trees to make way for new development, or displaced and less tangible, such as the air pollution caused by a fossil fuel power plant struggling to meet the energy demands of customers miles away. Either way, the built and interior environments have a clear and direct influence on the overall environmental quality of the places we live.

Green buildings in demand

A growing call for green buildings has led diverse agencies and organizations from around the world, including Audubon International, to work together to promote buildings that are environmentally responsible, economically viable, and healthy places to live, work, and play. At the forefront of this movement is the United States Green Building Council (USGBC), a coalition of more than 1,400 international organizations, including environmental organizations, federal and state agencies, product manufacturers, building owners, building professionals, utilities, city governments, research institutions, professional societies, and universities. Formed in 1993, the USGBC administers *Leadership in Energy and Environmental Design* (LEED), which has become the accepted national standard for what exactly constitutes a green building.

LEED is a voluntary program that evaluates environmental performance from a "whole building" perspective. The program is designed for new and existing commercial, institutional, and residential high-rise buildings, which must earn a minimum number of points to achieve different levels of certification (Silver, Gold, or Platinum). Points are attained through a combination of self-assessment, supporting documentation, and third-party verification.

Audubon International's role

Because of its extensive sustainable development work in Florida, Audubon International has begun working with the Florida Green Building Coalition. This state-based group has adapted USGBC's national standards and gone a step further by adding regionally and locally specific components, such as disaster mitigation for events like hurricanes and floods.

Together, Audubon International and FGBC are developing a checklist for commercial buildings in Florida. In addition, FGBC has developed the *Green Home Designation Standard, designed for the average homeowner.* Projects completed as part of participation in an Audubon International program will count towards habitat, landscaping, and watershed management requirements. Reciprocally, Audubon International has adopted the FGBC checklist as a minimum requirement for Sustainable Development Gold Signature projects.

The green building movement has momentum and support like never before, and the results are encouraging. By incorporating simple, effective elements of green building design into the construction and maintenance of buildings, real and significant gains are being made for the environment. With the work of Audubon International and groups like the Florida Green Building Coalition and the United States Green Building Council, we can further ensure that our homes and offices are environmentally responsible, healthy, and economically viable – sustainable – places to live, work, and play.

Green Building Conservation Facts and Tips

There is much you can do to make an existing home, school, or office *green.* Consider these tips compiled from the Florida Green Building Council *Green Home Designation Standard Reference Guide.*

- **Switch to compact florescent lights-** Lighting can account for more than 15% of a home's annual electric bill. Lights not only use electricity themselves, but also generate heat that must be removed by the home's air conditioning system. The most common artificial light source is the incandescent bulb. Almost 90% of the power is wasted as heat and the bulbs usually burn out after 750 hours of use. Fluorescent lamps require only one-fourth the electricity and last 10-12 times longer. They also produce equivalent light with far less heat. Although more costly, such bulbs can pay for themselves in about three years.

- **Buy *Energy Star* appliances-** You can find the EPA *Energy Star* rating on most major appliances, including refrigerators, washing machines, and computers. Energy Star clothes washers use nearly 50% less water and 30-40% less energy per load than conventional washing machines.

- **Choose gas over electricity, if possible-** Conventional ovens must first heat up about 35 pounds of steel and a large amount of air before they heat up the food. Only about 6% of the energy output of a typical oven is actually absorbed by the food. About 58% of American households cook with electricity, but gas is making a steady comeback. For gas ovens, new electronic pilot-less ignitions reduce gas usage by about 30% over a constantly burning pilot light

- **Install low-flow toilets-** Toilets represent the largest source of indoor water use in the home, accounting for up to 30-40% of water demand. Switch to low-flow toilets, which exceed the national standard of a maximum flow rate of 1.6 gallons per flush. In addition, fix leaks promptly in plumbing fixtures, hoses, or irrigation systems to avoid wasting water and electricity.

- **Capture rainwater-** With a national average of 27 inches per year (up to 54 inches per year in Florida), rainwater harvesting is an excellent source of water for landscape irrigation. The equipment is readily available and low cost (rainwater harvesting is now mandated for new construction in Bermuda and the US Virgin Islands). Rainwater is generally harvested from a roof surface, and system components include properly designed gutters, piping, roof washers, screens, and a storage tank/cistern.

What makes a building green?

LEED and other programs like it divide green building into several general categories, including sustainable site selection, water use efficiency, energy conservation, building materials and resource use, and indoor environmental quality / air quality / health. Each general category has required criteria, but is also flexible and rewards innovative solutions in green building design. Examples of requirements include:

- Installing energy-efficient lighting and appliances;
- Planting water efficient landscaping;
- Using water saving plumbing fixtures, such as low-flow toilets;
-
- Incorporating innovative water technology, such as rainwater capture and greywater reuse;
- Selecting building materials that reuse local resources, are made of recycled content, or made from renewable materials;
- Controlling heated and air conditioned interior space.

e-Source

Visit our online information center for fact sheets on a variety of environmental topics:

www.audubonintemational.org/e-source

Audubon International
46 Rarick Road
Selkirk, NY 12158
(518) 767-9051