



Building Green, Living Better

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Green Home Improvements

Whether you're building a house from scratch or looking to increase the energy efficiency of your home, there are a number of things you can do to make your home more sustainable and green.

Buildings have an enormous impact on the environment. According to a report by the U.S. Green Building Council (USGBC), the design, construction and operation of buildings accounts for more than 40 percent of energy used and pollution generated in the United States. Typically, demolition and construction debris accounts for 15–20 percent (in some places, up to 40 percent) of municipal solid waste in landfills. According to some estimates, as much as 90 percent of this waste could be reused or recycled.



Green Planning

Building Green

Building green helps reduce negative impacts on the environment and preserve the Earth's resources for future generations. Building green doesn't necessarily mean your home has to be more expensive or that you need to use alternative materials and methods. In fact, as long as the methods are efficient and environmentally friendly, it is possible to reduce overall expenses and build green using traditional materials.



Selecting Your Property

When selecting a site to build upon, the best choice is one that works for both you and the environment.



- Avoid building in environmentally sensitive locations, such as wetlands, flood zones, hurricane-prone areas and endangered wildlife habitats.
- Check on the proximity to public transportation, community resources and bike trails to reduce the need to drive.
- Consider developing an infill or greyfield site—a site where a house was previously built and where water, phone and sewer lines may already be in place—instead of clearing undeveloped lands, known as greenfield sites. Reusing an existing foundation minimizes the amount of excavation required.

Positioning Your Home on the Site

The orientation of your house on the site can affect the amount of energy it consumes.

- Position the house on the site to best capture sunlight in cooler months, and reduce heat gain in warmer months. An east-west axis orientation is usually best.
- Be realistic about how much space you need. A smaller house will require less material to build, as well as less energy to heat and cool over the life of the structure.
- Build up instead of out. A multi-story house has less roof and foundation area than a one-story house of the same square footage, is more efficient to heat, and has ceiling framing that doubles as floor framing for the floor above.
- Reduce heat island effects. In warmer regions, select light-colored roofing. Limit paved areas around the house, or keep paved areas light colored or shaded.



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Designing Your Home

Whether you prefer a traditional or modern look, design your home with materials that are friendly to the environment.

- Use materials that are easily recyclable, reusable, renewable, durable, affordable and low maintenance.
- Maximize insulation, weather strip door openings and seal ducts.
- Install high-performance windows and energy-efficient appliances, and consider solar effects when locating windows.
- Choose high-efficiency (90 percent and higher) heating and cooling equipment with a seasonal energy efficiency ratio (SEER) of 16 or higher. Install HVAC equipment and duct systems in conditioned space for additional energy savings and improved indoor air quality. Put in programmable thermostats to minimize energy use, especially when nobody is home.

Protecting Your Water Resources

Be mindful to conserve water and protect the water supply during and after construction.

- Control soil erosion during the building process. Be sure to manage run off and sedimentation so they do not affect storm water systems.
- Design the landscape around the home to limit long-term water and energy use and preserve the natural environment. Minimize water-intensive landscaping, lawn areas and grasses and replace with native plant species.
- Consider installing a rain water and run off collection system and a gray water recycling system to water lawns and gardens.
- Select low-consumption or dual-flush toilets; low-consumption or waterless urinals; and low-flow lavatory, sink and shower faucets.



Safe and Sustainable

Building codes can require new construction to perform at more energy efficient and environmentally sensitive levels, ranging from construction design and elements to how buildings are used and occupied.



The International Green Construction Code (IgCC) is developed by the International Code Council, ASHRAE, the USGBC and the Illuminating Engineering Society. The IgCC provides a whole systems approach to the design, construction and operation of buildings and includes cost-effective measures that result in lower operating costs, better

indoor environments, lower impact on natural resources and improved neighborhood connections and walkability. A public-private collaboration, the green code correlates with the International Energy Conservation Code, ASHRAE Standard 90.1 and many other referenced standards. It helps governments streamline code development and adoption; saves them the time and money needed to develop their own codes; and creates uniformity among adopting jurisdictions.

The IgCC is also consistent, coordinated and integrated with the other International Codes (I-Codes) already being used in all 50 states and many other countries. The I-Codes ensure communities are both safe and sustainable. More information about this is at www.iccsafe.org/igcc.

Putting Green into Action

Recycling Construction Waste

Throughout the building process, as well as after, be sure to recycle waste materials.

- During excavation, stockpile and reuse excavated topsoil.
- Collect shipping boxes, wood scraps, metal and other construction waste to recycle or sell for salvage.
- Buy, sell or donate used construction supplies. Check stores and websites for everything from insulation, windows and doors to tiles, appliances and more.
- When installing new carpets, choose those made from recycled materials and recycle your old carpets.



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- Take used batteries, fluorescent bulbs, unwanted chemicals and paints to recycling or hazardous waste collection facilities.
- Include recyclable material storage areas.

Taking a Deep Breath

Good air quality benefits everyone, especially people with allergies and children with asthma.

- Incorporate whole-house ventilation and ceiling fans.
- Use eco-friendly adhesives, sealants, paints, coatings and carpeting that emit low levels of volatile organic compounds.
- Install entryway dirt-capturing systems. Use good quality air filters and change them regularly.
- Clean your house with biodegradable, environmentally friendly cleaning products.



Finding Useful Information

A number of resources are available on green and sustainable building requirements. Here are some of the well-known rating systems and standards.

- The Code Council, in partnership with ASHRAE, USGBC and IES has published the International Green Construction Code (IgCC), powered by ANSI/ASHRAE/USGBC/IES 189.1, to address traditional and high-performance buildings. Available at www.iccsafe.org.
- The National Association of Home Builders (NAHB) and the Code Council developed the National Green Building



Standard (NGBS) (ICC 700-2020) to address green home building construction practices. Learn more at www.iccsafe.org.

- The Leadership in Energy and Environmental Design (LEED) Green Building Rating System is a benchmark developed by the USGBC. Learn more at www.usgbc.org.
- The Green Building Initiative (GBI) develops the GBI/ Green Globes rating system and standard. Available at www.thegbi.org.

Support Building Safety!

For more information about building safety codes and local requirements, contact your local building department.

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