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BPC Green Builders Guide to Green and Sustainable Home Building

Homeowners may be surprised to learn that in the U.S., buildings account for about 40% of total energy used and about 70% of electricity used. Clearly, homes have a major impact on the environment. This energy use also has a huge impact on homeowner's budgets. Green and sustainable home building is a win-win way to address both issues.

Why think about sustainable home building?

The goal of green and sustainable home building is to steward the use of energy, water and raw materials while creating homes that are comfortable, safe and designed to function well for the way the family lives. Using a sustainable approach to building a new home or retrofitting an existing one rewards the homeowner with immediate livability plus long-term savings and a healthier, more comfortable home. It also reduces carbon emissions and waste while it is being built and for its lifetime.

What are the goals for building a sustainable home?

1. Optimize the site
2. Optimize energy use
3. Protect and conserve water
4. Use environmentally friendly products and local resources
5. Enhance indoor air quality
6. Simplify operational and maintenance needs



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How will my “sustainable home” be different?

For starters, you will have a high-performance home that helps the planet by lowering your carbon footprint. In addition to being good for the planet, your sustainably built home will feature benefits that include:

- **Energy efficiency:** A sustainable home will require far lower amounts of energy to operate. How much less? The *Home Energy Rating System (HERS)* is a standardized method for comparing home performance and is based upon energy-related factors, including insulation, windows, mechanical systems, and a blower door test for air tightness. The higher the HERS score, the higher a home’s energy consumption. The average existing home achieves a HERS score of 150, a typical new home 100, and an Energy Star home 85. Our BPC homes have recently been achieving scores ranging from 14 to 46. So, compared to a typical new home or even an Energy Star home, ***BPC’s sustainably built homes are cutting energy costs 50% to 80%.***
- **Comfort:** Maintaining indoor comfort means keeping temperature even and humidity balanced. The BPC approach to green sustainable building includes well-insulated and air-tight outside walls. This minimizes heat loss in the winter and heat gain in the summer. It also eliminates drafts and cold/hot spots. BPC’s standard for comfort is a variance of no more than 3 degrees anywhere within the home and maintaining a relative humidity of 20-55% at all times.
- **High indoor air quality:** Did you know that the air quality inside many homes is actually *more polluted* than the outdoor air? In sustainable homes, however, the air within the home is not only properly ventilated, but filtered. In BPC homes, it’s completely exchanged every four hours. This fresh, filtered air combines with the controlled moisture levels to minimize the presence of allergens and germs. There is also less dust, so you’ll spend less time cleaning a sustainable home! Selecting building materials with low concentrations of dangerous adhesives and sealers also enhances indoor air quality.
- **Safety:** Believe it or not, safety involves more than building a home so it won’t fall down. For the long-term safety of homeowners, a sustainable home should include a basement depressurization system to deal with soil gasses. Moisture levels are also controlled. In addition, combustion devices or the use of sealed combustion equipment are eliminated to remove the risk of carbon monoxide poisoning.
- **Low maintenance costs and high durability:** Controlling moisture inside and outside the home is the key to creating a durable, long-lasting home. At BPC, for example, our standards include the



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use of water-managed foundations, air-tight exterior walls, mechanical ventilation systems, and the proper installation of siding and flashing for windows and doors.

Is it more expensive to build “green and sustainable?”

It used to be. But today, the cost of green materials and systems is becoming somewhat more affordable. Plus, the more experience builders have with green materials, systems and sustainable construction techniques, the better they’re able to streamline costs. At BPC, for example, we were one of the first builders in Connecticut to specialize in building green, sustainable homes. This long track record of experience means that we can be exceptionally efficient in reducing upfront costs.

Then, of course, the ongoing savings can quickly repay the investment. At BPC, we typically see that the “extra” cost of sustainable building or renovating can pay for itself in just 5 years. In fact, here at BPC, we are certified Passive House builders and consultants, and have completed some of the first certified homes in the area. This means we can go after even more aggressive energy performance with the capability to build green, sustainable homes that use just 10% of the heating and cooling energy required by traditionally built homes.

In addition, sustainable building offers long-term rewards you with lower maintenance on walls, windows, doors, and mechanical systems because they are more durable.

Are sustainable homes attractive?

Absolutely! They treat homeowners to bountiful sunlight and can be designed for any style that homeowners prefer – traditional to contemporary. All of the homes BPC builds are “green” -- and a look at our gallery of photos shows you the wide range of beautiful homes we’ve built and remodeled to be sustainable.

Check out our [Photo Gallery of Green and Sustainable Homes](#)

About BPC Green Builders, Inc.:

BPC Green Builders provides green custom new home building and green home renovation services, including home energy audits, green architecture, green building, sustainable building and Passive House (passivhaus) services to homeowners in Connecticut and New York.