



The Green Door

GreenWorks
REALTY

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The Green Door is a monthly newsletter of sustainable living and real estate geared to present and future homeowners.

"Long Life, Loose fit, Low Energy" - Alex Gordon's definition of design for adaptability

The Adaptable House: Designing for the Future

For a house or any building to be truly sustainable, it must last and meet the needs of future occupants. This is not to say that your home should not meet your needs, but rather that your home should be built or renovated in such a way that change is easily accommodated. When a building is highly specialized, chances are greater that it will become obsolete. The idea is to future proof your home by taking into consideration **structural durability, flexibility and adaptive reuse**. A durable structure obviously insures longevity, but flexibility also plays an important role. Flexibility enables a building to withstand routine reconfigurations while retaining the same larger purpose (changing a bedroom into a home office or a basement into a separate studio). Adaptive reuse, on the other hand, is a major shift in function and is long term and done less frequently (converting an old firehouse into a commercial storefront). **"Designing for adaptive reuse factors time into the equation of sustainability"**, explains Kevin Burke, AIA, of William McDonough + Partners.

Using specific strategies during design and construction of new buildings or significant renovation of existing buildings will help safeguard the building against demolition in favor of adaptive reuse. The Six S's identified by Stewart Brand in his book "How Buildings Learn" include the major categories of design as well as a hierarchy of building decisions. Generally these categories move from the largest to the smallest and from the most permanent to the least permanent.

S1. Siting takes into consideration the building's location, which should be convenient and desirable for decades to come. Proximity to roads, utilities and conveniences, how the sun's light approaches, and where shade can be found are all siting factors. Included in siting is determining the shape and size of your floor plans, massing and elevations. Selecting multi-story solutions has some advantages in that you can build more densely and maintain more natural environment around your building. It also allows you to pick a narrower floor plan for improved flow through ventilation and daylighting possibilities. Density is a very sustainable concept. Small lots are great-everybody living on two acres is not sustainable. Perimeter space within your home is more valuable, but you have to weigh this with energy loss.

S2. Structure will make your building stand and while safety is an important factor, you do not want to overbuild your house, utilizing more structural materials than are necessary. Some structural systems are much easier to change. Wood is easy to adapt. Concrete is difficult, but can provide advantageous nonstructural aspects like thermal mass, which can be used to better heat and cool your building. Simple shapes are also easier to change.

S3. Skin protects the inside of your building. Generally simpler, lighter skins like wood, steel and cement board are easier to change than concrete or brick. Don't forget about insulating the skin and installing appropriate windows and doors, as this will not only allow you increased energy performance but more privacy and better acoustics as well.

S4. Systems provide heat, light, air, power, and information through separate mechanisms. These systems should be working closely in conjunction with available natural systems like wind, shade, sunlight and the microclimate of the site and interfacing with each synergistically. Systems also have a tendency to be overbuilt. You want to be adequate with some spare capacity, but the tendency is to design and build for the worst case scenario-like designing the heating system for four consecutive days below zero in Seattle. A few days wearing a sweater is fine.

Moving Toward Zero Energy Homes

A Zero Energy Home (ZEH) combines state-of-the-art, energy-efficient construction and appliances with commercially available renewable energy systems such as solar water heating and solar electricity. This combination can result in net zero consumption from the utility provider. Zero Energy Homes are connected to the utility grid but can be designed and constructed to produce as much energy as they consume annually. Besides a decreased power bill the advantage of these homes are improved comfort, reliability, security and environmental sustainability. **U.S. Department of Energy**

The U.S. Department of Commerce reports that investments in remodeling and repairs equal or exceed the value of new construction each year. Within 25 years, according to The American Institute of Architects (AIA), approximately 75% of commissions to architects will not be for new construction but for the reuse of existing structures.

If our buildings are not designed to last 250 to 300 years, we are not asking the right questions."

-John Abrams

S5. **Stage** is how you divide up the inside of the house. Design flexibility should be thought of in two ways-one is to create rooms of appropriate size, shape and connection so that the room can serve multiple functions during its life. Changing from a bedroom, to an office to a TV room is not uncommon. You can even take it one step further and design rooms that could later work for a bathroom, laundry room or future mother-in-law kitchen. The second part of design flexibility is to try to keep internal partitions independent of structure as much as possible, while still maintaining the cost effectiveness. If the wall has to move, it should be easy. Our needs change as our families change. You may even want to consider designing part of your house to be a future apartment for either yourself or late life companions. Avoiding partitions will give you maximum flexibility. Use furniture, screens or rolling wardrobes to divide up the space. If you are building or remodeling your house, take detailed photographs of all the systems inside the walls before you cover them up and keep them in a notebook with notes and other information-this is your owner's change manual. Key the photos to a floor plan and then, when you go to change the room you may be able to avoid losing systems and be better able to plan with actual conditions. You may also want to consider interior walls that are designed for reuse like steel studs and or panels that can be moved and easily re-used. In all areas we need to pick our materials carefully, as some materials age better than others. The Japanese even have a word for materials and products that get better with age.

S6. **Stuff** is all the things we bring into our homes-furniture, tools, clothes, art, junk. These are often the most transitory, and are often more subject to fashion. We can do a lot to make our acquisitions more appropriate. We can plan for less fads and longer life. We can select stuff that can serve multiple functions. We can plan for trickle down use within our own houses. We can buy recycled, we can buy less and we can give to our friends.

A Greener Seattle Highlight - Deconstruction

Seattle Housing Authority and Knight's Construction joined forces to deconstruct 20 homes in West Seattle's High Point housing development, which will eventually house 1,600 families and include a library, stores, a community health clinic and parks. **Deconstruction is the selective disassembly of a building structure to maximize the re-harvest of materials for reuse, an essential component of sustainable, green building.** Another local company that specializes in deconstruction is Earthwise. Founded by Kurt Petrauskas over a decade ago, Earthwise has evolved into a number of divisions: demolition, deconstruction and a retail store and yard, by salvaging reusable building materials and architectural features that would otherwise be headed for the landfill. For more information on these companies or if you are interested in purchasing deconstructed materials see **November Websites.**

Seattle Sustainable Residence Diary-Entry #6

We have now closed on our Capital Hill property. The next step is getting surveys and structural engineering ready for permit application. We are still concerned about the budget-can we do this for \$100/sq foot, well below the national average? We have a lot of confidence in our contractor. Current Issues-changing the roof shape to fit within city code envelopes, moving the house back to meet the "driveway code", still wanting to keep on designing, but knowing that I need to submit for permit to limit carrying costs. So it goes!!
JRF

The Green Door is brought to you by Cally Fulton and Danielle Johnson, both Real Estate Associates with GreenWorks Realty, Seattle and is written by JR Fulton, Architect and LEED Accredited Professional. To save trees and expand the opportunity to share information, please provide us with your e-mail address and the address of others interested in making their homes more sustainable. If you or someone you know would appreciate our real estate services please call-

Cally Fulton(206)786-5061 or Danielle Johnson(206)679-0185
To be added or deleted from our subscription list please contact
cally@greenworksrealty.com

November Websites



<http://www.earthwise-salvage.com/aboutus.htm>

Earthwise

<http://www.sea-pha.org/newspage/newsarticles/HPdeconstruction.htm>

High Point Deconstruction

<http://www.metrokc.gov/dnrp/swd/wdidw/>

What do I do with...?

A database of businesses that accept unwanted items from residents and businesses.

<http://www.transstudio.com/>

Materials that are reshaping our world.

Market Update

Interest rates are still under 6% and home sales are brisk but the supply of available homes has plunged which slowed home sales last month. The median home price, however, keeps rising (9.4% this last year). The popular market appears to be homes priced below \$400,000. If the home is in good shape and somewhat updated its gone in days with multiple offers. The leftovers can leave something to be desired-busy streets, small sq footage, cosmetic overhauls needed, etc...But they are still selling. So if you own a home and need to sell in the near future, now is the time.

GreenWorks
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Phinney Ridge Office
7406 Greenwood Ave, Suite A
Seattle, WA 98103

206.283.8181 (office)
206.781.0043 (fax)
Greenworksrealty.com