



TOP TEN GREEN BUILDING TRENDS TO WATCH IN 2010

By Sean Penrith

While we know the building industry had a rough year in 2009, not all of the industry has been in the doldrums. Green building has been a bright spot in an otherwise lackluster year, and the Northwest design and building communities have been at the forefront.

Consider the collaboration on the Oregon Sustainability Center, which may be one of the first “living” office buildings. On the residential side, according to Multiple Listing Service data, the market share for certified sustainable new homes has actually risen this past year in greater Portland and Seattle.

So what can we expect to see in the coming year in green building? Here are our picks for emerging trends of 2010, in no particular order.

1. **The smart grid and connected home.** While utilities will continue to make upgrades to the grid for more effective generation, storage and distribution of power, the big news is in the home. The development of custom and web-based display panels that show real-time home energy use, and even real-time energy use broken out by individual appliance, will go a long way towards helping change homeowners’ energy behavior and drive energy conservation. In the same way that the Toyota Prius miles-per-gallon indicator has motivated some owners to modify driving habits, these home “dashboards” may create “extreme energy” buffs intent on reaching individual energy goals specified for the home by rating systems such as the Energy Performance Score.
2. **Energy labeling for homes and office buildings.** The advent of more accurate energy rating systems for homes and office spaces – similar to the miles-per-gallon sticker on your car – has caught the attention of energy agencies and legislators around the country. Not only can it make a building-to-building or home-to-home comparison easier, but a publicly available score on the Multiple Listing Service (MLS) could galvanize owners to make needed energy improvements while adding value to their building. A post-improvement audit can also measure the effectiveness of upgrades, a useful tool for gauging results of stimulus funding for retrofits. In Oregon and Washington, the Energy Performance Score has been written into recent bills to explore mandatory energy labeling at the time of any transaction.
3. **Building information modeling (BIM) software.** The continued evolution of CAD software for building design has produced new add-on tools with increasingly accurate algorithms for energy modeling as well as embedded energy properties for many materials and features. This will prove instrumental in predicting building performance. BIM developers will soon be offering

more affordable packages aimed at smaller firms and individual builders. Contractors are predicted to show the greatest increase in usage of BIM compared with any other group, according to market research firm McGraw Hill Construction.

4. **Buy-in to green building by the financial community.** Lenders and insurers have come to see green homes and buildings as better for their bottom line and are working to get new reduced-rate loan products, insurance packages, and metrics into place. Lenders and insurers are realizing that green home owners are more responsible, place higher value on maintenance, and are less likely to default due to lower operating costs of homes and office buildings.
5. **“Rightsizing” of homes.** As we’ve seen during the current downturn, a larger home no longer translates into greater equity. Given that the forecast for home valuation remains conservative, that energy prices are expected to rise over time, and the Federal Reserve is expected to raise interest rates mid-year, homeowners will likely feel more comfortable building smaller homes and smaller add-ons.
6. **Eco-districts.** Portland is already on the bandwagon with this one, encouraging the creation of greener communities where residents have access to all most services and supplies within walking or biking distance. These areas would also incorporate green spaces and green certified buildings. While we have such neighborhoods in the cities, the creation of walkable, low impact communities in the suburban setting is also gaining steam.
7. **Water conservation.** Because indoor and outdoor residential water use accounts for more than half of the publicly supplied water in the United States, the EPA finalized the WaterSense specification for new homes in December of 2009, which reduces water use by about 20 percent less water compared to a conventional new home. Verification groups that certify single and multifamily homes will likely also train the same staff to verify WaterSense compliance when requested by builders or homeowners. Mandatory energy labeling in Europe already documents water efficiency in buildings -- it may soon be incorporated into U.S. performance scores. Water will be the essential resource in the next decade.
8. **Carbon Calculation.** With buildings contributing roughly half the carbon emissions in the the environment, the progressive elements in the building industry are looking at ways to document, measure, and reduce greenhouse gas creation in building materials and processes. Lifecycle analysis (LCA) of building products is underway by third party technical teams, while others are working with federal and state building authorities to educate staff, create monetized carbon credits, and develop effective carbon offset policies. This effort will be heightened once a federal cap-and-trade mechanism is launched in this country.
9. **Net Zero Buildings.** A net zero building is a building that generates more energy than it uses over the course of a year, as a result of relatively small size, extreme efficiencies and onsite renewable energy sources such as wind, solar or geo-exchange systems. While the Architecture

2030 Challenge sets forth net zero as the goal for all buildings in 2030, we are already within striking distance on many fronts. Building extreme efficiency into a structure is highly cost effective, and achieves the bulk of the net zero effort. Oregon already has several net zero homes, and the planned Oregon Sustainability Center is an example of a net zero office building.

10. **Sustainable building education.** While the slowdown afforded many builders the opportunity to learn about green building and establish credentials, the momentum for green building is being supplied by homebuyers, homeowners and building owners. The continued demand, especially in progressive cities, will supply new learning opportunities, not just for designers and builders but for the entire chain of professionals involved in the building industry, from real estate to finance, and insurance. These peripheral professionals seek to know more about the features and benefits of sustainable construction in order to place an appropriate value on a green building. In this way they can be assured that there will not be a disconnect between the homeowner's or builder's perceived value and the appraiser's perceived value, and all parties can benefit from the greening of the building industry.

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