

# Top Ten Green Building Trends for 2010

Leading non-profit Green Building Certification organization in Portland, **Earth Advantage Institute** has recently announced the top ten green building trends in 2010. The trends cover a wide spectrum of topics, right from energy scores for homes to web-based displays which track real-time energy consumption. They were acknowledged by the Institute based on dealings with builders, lenders, appraisers, real estate brokers, architects and homeowners throughout 2009.



The trends are as follows:

## 1. The Smart Grid and Connected Home

As grid capabilities begin to increase in the future, the first on the list is the smart grid and connected home, which will work to conserve energy and thereby increase home value –

Storage and distribution of energy are in the homes, while utilities will continue to make upgrades to the grid for more effective generation. The development of custom and web-based display panels showing real-time energy use broken out by individual appliance and even, real-time home energy use, will go a long way towards changing homeowners' energy behaviour and driving energy conservation.

These home “dashboards” may create “extreme energy” buffs intent on reaching individual energy goals specified for the home. This can be possible by rating systems such as the Energy Performance Score.

## 2. Energy Labelling for Homes and Office Buildings

Next is energy labelling for homes and office buildings to promote energy improvements by property owners which will add worth to the building.

The dawn of more accurate energy rating systems for homes and offices (similar to the miles-per-gallon sticker on your car) has made the energy agencies and legislators around the country more aware. It can not only make a home-to-home or building-to-building comparison easier, but also stimulate owners to make needed energy improvements thereby adding value to their building.

A post-improvement inspection can also measure the efficiency of upgrades, a useful tool to gauge the results of stimulus funding for retrofits. In Washington and Oregon, the Energy Performance Score has been written into recent bills to survey obligatory energy labelling at the time of any operation.

### **3. Building Information Modelling (BIM) Software**

The third trend is Building Information Modelling (BIM) software. CAD software for construction design has spawned fresh tools with progressively precise algorithms for power and energy. The continued evolution of CAD software has also embedded energy properties for many materials and features. This will prove helpful in predicting



Figure 1: Created with BIM

building performance.

Architects and designers can model how a building will perform given certain environmental conditions, solar orientation, HVAC systems, dimensions and size, materials, renewable energy, lighting and more. Experts predict that the use of BIM by architects, designers and builders will become more widespread in the future.

### **4. Buy-in to Green Building by the Financial Community**

The fourth trend foresees a surge in open lending for green construction schemes. The financial services community has started to view green buildings as more monetarily viable and to get new reduced-rate loan programs and insurance packages as the operating costs are much lower than a traditional home.

Green buildings are doing their part to reduce climate change as they have lower operational costs and healthier interiors but this is a great risk to insurance companies. Due to lower operating costs of homes and office buildings, insurers and lenders are realizing that green home owners place higher value on maintenance, are more responsible, and are less likely to default.

### **5. “Rightsizing” of Homes**

As a bigger home no longer means greater equity, the fifth trend is the “rightsizing” of homes. Given that the forecast for home assessment remains traditional, that energy prices are expected to rise with time, and that the Federal Reserve is predicted to raise interest rates mid-year, homeowners will feel more comfortable building smaller homes.

## 6. Eco-Districts

Eco-districts are the sixth trend. Many cities are encouraging the creation of green communities in which residents have access to most services and supplies within walking or biking distance. Portland is already on the bandwagon with this one.

These areas would also incorporate green spaces and green certified buildings. Cities around the world are beginning to think and built holistic communities with green buildings, gardens, pedestrian orientated streets, public transit, bike lanes and open space. These eco-districts consist of environmentally friendly buildings running off renewable energy.



Figure 2: Portland Planning

## 7. Water Conservation

The seventh trend is water conservation, as this elixir of life is becoming endangered more so every day. Already millions all over the world do not have access to clean drinking water, and are experiencing droughts.

Water will be the essential resource in the next decade. When requested by builders or homeowners, verification groups will train the staff to verify WaterSense compliance.

## 8. Carbon Calculation

Carbon calculation will work to decrease greenhouse gas creation and emission during the construction process.

Lifecycle analysis (LCA) of construction products is underway by third party technical panel, while others are working with federal and state building authorities to create monetized carbon credits, educate staff, and develop effective carbon offset policies.



## 9. Net Zero Buildings

The ninth trend is 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 onsite renewable energy sources such as wind, solar or geo-exchange systems, extreme efficiencies and relatively small size. These houses are so efficient, that often they don't even need a heating system and rely on the excess heat from appliances to keep the home warm. Oregon already has several net zero homes, and the planned Oregon Sustainability Centre is an example of a net zero office building.

## **10. Sustainable Building Education**

Last is sustainable building education to aid designers and builders and building industry professionals such as insurance agents, real estate agents and financiers. Training for renewable energy systems like solar panels is gaining popularity similar to becoming a LEED Accredited Professional, who is trained to certify green buildings. The continued demand will supply new learning opportunities to all the designers and builders.