

Building Green

“7. Practice and promote sustainable building practices using the U.S. Green Building Council’s LEED program or a similar system” Item 7 of 12 from the Mayors’ Climate Protection Agreement

Green buildings. They sound a tad...mossy. Or perhaps like hay bales or earthen floors gone bad. What does it really mean to “build green”? Is this a fad, or is it here to stay?

Here are a few facts about the buildings in which we all live and work, based on information from the Dept. of Energy, the EPA, and the USGS:

- The operation of residential and commercial buildings consumes more than 60% of the total electricity used in the U.S.
- Production of building materials uses 40% of global raw materials
- The building process – production and transportation of materials and actual building of structures – uses 40% of the total energy flows in the U.S.
- Construction, renovation and demolition of U.S. commercial and residential buildings accounts for:
 - up to 50% of ozone-depleting CFC’s
 - 40% of landfill material
 - 38% of the total U.S. greenhouse gas emissions

So it looks like there’s reason to care. But does “green building” have to mean hay bale walls and dirt floors? It can, but it doesn’t have to.

Green building has become synonymous with cutting edge, “high-performance” building which is ultra efficient in the use of resources and produces healthier, more comfortable structures that are less expensive to operate. But in most cases, from the exterior, green buildings are difficult to distinguish from their traditional counterparts.

So how is it done? The most widely used standard for green building in the U.S. is the voluntary Leadership in Energy and Environmental Design (LEED) Green Building Rating System. This system promotes efficient use not only of energy, but also of the resources of land, water, and materials. It also places high value on human health and comfort. Performance and innovation are evaluated in five primary areas:

- Sustainable Site Development - addresses the question of how land should be developed. Brownfield reclamation, maintenance or creation of open space, habitat restoration, and storm water management are some of the issues dealt with, as well as control of heat gain on roofs and paved areas, and nighttime light pollution.

- Water Savings - challenges us to live as though only 1% of the water on earth is drinkable (true). This section promotes native landscaping, efficient irrigation, and rainwater capture, as well as the use of grey water and efficient plumbing fixtures in buildings, to reduce potable water use.
- Energy Efficiency and Atmosphere – this is the climate challenge. How low can we go with our energy use? This section addresses eliminating ozone-depleting CFC's, and explores on-site renewable energy options and grid-supplied Green Power with the goal of at least 20-50% energy use reduction.
- Materials Selection – is about re-using and recycling our existing buildings and materials. It deals with the issue of indoor pollution, and promotes use of materials that are low VOC, rapidly renewable and locally produced.
- Indoor Environmental Quality – addresses human health and comfort by increasing fresh air supply, natural lighting, and access to outdoor views, as well as greater individual control over lighting and thermal comfort.

Credits may be earned in any of these areas, and depending on how many are accomplished, buildings can be LEED certified at one of four levels: Certified, Silver, Gold or Platinum. There are residential and commercial guidelines for new construction and renovations, guides for campuses and neighborhood developments, and guidelines for “greening” existing buildings.

High-performance building will likely be the industry norm in the not-so-distant future. Twenty-two States (so far), twelve Federal agencies (including NASA, Dept. of Energy, EPA, Army, Navy, Air Force, Dept. of State, Dept. of Interior), seventy-five cities, and numerous school districts and colleges across the nation are adopting green building standards for their facilities. In some cases, incentives are being offered for private developers to use the standards as well. Many U.S. companies are opting to build green because they realize that not only is it a way to combat climate change, but it's good publicity, saves money, and leads to greater employee satisfaction and productivity. It satisfies the “triple bottom line” of benefit for finances, people, and the Earth. Individuals are also increasingly choosing to build or remodel green for many of the same reasons.

So why not in Alliance? LEED certification is a great way to achieve high performance and simultaneously inspire and educate others. But even if projects don't attempt LEED certification, they can still incorporate elements of green building. Local builders are beginning to be familiar with green methods and materials. And for those of us who can't afford a major project at the moment, maybe we can take a look at the LEED guidelines for greening existing buildings and ask ourselves, what can we do now?

Check it Out:

U.S. Green Building Council and LEED: <http://www.usgbc.org/>

About Green Schools and increased student performance:
<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1640>

USGBC Testifies Before the U.S. Congress about Green Building: An Overlooked Solution to Reducing U.S. Energy Consumption, May 15, 2007:
<http://www.usgbc.org/News/PressReleaseDetails.aspx?ID=3149>

Ohio EPA Green Build website (great resource and links for green building in Ohio):
<http://www.epa.state.oh.us/ocapp/Greenbuild>

Energy Star: Buildings and Plants – Green Building: <http://www.energystar.gov/>

National Association of Homebuilders Green Homebuilding Guidelines:
<http://www.nahbrc.org/greenguidelines/>

A few local green building examples:

The Akron Zoo's new Komodo building – LEED certified

Youngstown Federal Courthouse – LEED certified

Pittsburgh's Phipps Conservatory - Silver LEED certified

Shadyside Giant Eagle - Silver LEED certified

The Pittsburgh Convention center - Gold LEED certified

The Wooster Unitarian Church - Gold LEED certified

Adam Joseph Lewis Center for Environmental Studies, Oberlin

Eco-Village residential development, Cleveland