

"GREEN GUIDE FOR BUSINESSES 101"



DXDempsey
◆ Architecture Design Planning

What is "sustainability"?

• Sustainability has been defined by the Brundtland Commission of 1987 as "meeting the needs of the present generation without compromising the ability of future generations to meet their own needs."

• Sustainability represents a balance that accommodates human needs without diminishing the health and productivity of natural systems.



Ok, then what is "green"?

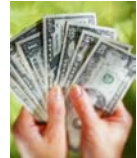
• Green is a subset of sustainability. It represents the environmentally responsible steps being taken in all facets of our lives towards achieving the goal of sustainability, in which human beings are living off nature's abundance but being regenerative and supportive of all other living systems.



That's lovely, but other than environmental stewardship, why should my business "go green"?

Top Reasons:

- Environmental/Social Responsibility
- Saving Money
- Retaining Employees & Customers
- Great Marketing for those who "walk the walk"



FORTUNE

Patagonia: Blueprint for green business

The story of how Patagonia founder Yvon Chouinard took his passion for the outdoors and turned it into an amazing business.

By Susan Casey, Fortune
May 29, 2007, 10:31 AM EDT



That's lovely, but other than environmental stewardship, why should my business "go green"?

•Triple Bottom Line for Green Businesses

People
Planet
Profit

•Triple bottom line accounting recognizes that without happy, healthy people to staff a business and the natural environment able to sustain those people and supply resources for trade, business is unsustainable in the long run.

•Traditional Model:
profit, profit and more profit

Triple Bottom Line is not an award, accreditation or a certification you can achieve - it's an ongoing process that just helps a company keep on track towards running a greener business.



Hmm...that sounds enticing, so then what is "LEED"?

• **Leadership in Energy and Environmental Design** represents the efforts of a coalition including the US Green Building Council (USGBC) to establish a nationwide standard for constructing "green" buildings.

• **Obtaining LEED certification requires compliance with a minimum number of criteria affecting many aspects of a project, from site selection to the recycled content of building materials.** Projects earn points for criteria that they fulfill; those that earn more points are awarded a higher level of certification.

• Other organizations that offer green certification:

- Global Green
- NHBA
- Energy Star

• The LEED-certification process can add from 4-10% to the upfront cost of a project, but this often pays itself back in operational and life-cycle cost savings.



What is the benefit of being LEED certified?

- Reducing energy and water use and reducing operational costs.

- LEED also offers compelling proof to you, your clients, your peers and the public at large that you've achieved your environmental goals...no "green-washing"

- LEED buildings have increased worker productivity, decreased absenteeism and increased worker morale.

- At Carnegie Mellon University, New House Residence Hall is the country's first LEED-rated dorm. Students clamor to live there not only because the green features make the dorm preferable, but also because it gives the students the feeling that they have a stake in the environmental goals of the university.



Does the government offer incentives?

- Pennsylvania supports green design through the **Governor's Green Government Council** (www.gggc.state.pa.us). The purpose of this program is to facilitate the incorporation of environmentally sustainable practices into state projects.



•PENNSYLVANIA—grants

- Four state funds including the \$20 million **Sustainable Energy Fund** provide grants, loans and "near-equity" investments in energy efficiency and renewable energy projects in Pennsylvania.

- In July 2005, the Pennsylvania State legislature passed House Bill 626, amending the Public School Code to provide a financial incentive to public school districts that achieve LEED Silver certification.



Does the government offer incentives?

- Through **Growing Greener II** (Act 45 of 2005), Pennsylvania is investing \$625 million to address some of the state's most pressing environmental problems, spark new growth in core communities, and create new opportunities for citizens.

- Administered by DCED



Can a building be green w/o being LEED certified?

- Yes. For some projects the costs associated with LEED certification are not in the budget or sometimes the architect can't convince the client of the benefit. In both of these cases, LEED principles can still be used as a guide to create a green building.

- LEED certification validates a buildings "greenness", but lack of certification does not preclude a building from being green. The building shown here was not LEED certified, but still voted one of the **Top 10 Green Projects by Architect Magazine**.



•PROJECT Global Ecology Research Center
•CITY Stanford, Calif.
•ARCHITECT EHDD Architects

•Ample natural light and ventilation coupled with a radiant cooling system preserve the comfort of the 11,000-square-foot Global Ecology Research Center at Stanford University. At night, sprinklers spray a thin film of water over the roof, where it cools to around 65 degrees and runs to a 12,000-gallon chiller tank. The cooled water then circulates throughout the building during the day, absorbing interior heat. Although the project was not submitted for LEED certification, juror John Quake says, "We appreciated the independent thinking."

Can a building be green w/o being LEED certified?

- CASE IN POINT—PEEC (Pocono Environmental Education Center)**

- Passive Solar Heating and Cooling
- Radiant Heat
- Daylighting
- Material selection—low maintenance; reused tires; engineered wood reduces reliance on old growth forests



Can a building be green w/o being LEED certified?

- CASE IN POINT—Fidelity Deposit & Discount BankBranch, West Scranton**

- Daylighting
- Light Harvesting
- High Energy Efficient Glass
- High Energy Efficient Mechanical System
- Occupancy Sensors
- Recycled Materials (recycled carpet, recycled tires, FSC certified wood, 0-VOC paint)
- Automatic and Low-flow fixtures
- Exposed structure—no need for extra material
- Cool Roof



What if I'm not building a new building but I want my work place to be green?

• How to **green** your office environment:

•Lighting

•Daylighting

•Keep blinds open and use natural sunlight to light as much of your space as possible during the day



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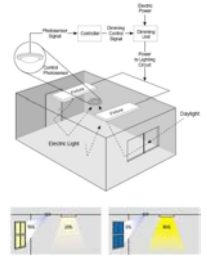
•Lighting

•Light Harvesting

•Dimmable ballasts are often used where a skylight or some other kind of daylighting is in place. If your office space is subject to variable natural lighting levels, you can install dimmable ballasts to reduce—or even eliminate—the energy you use when more artificial lighting isn't needed.

•**CASE IN POINT – Multnomah County (Portland, Oregon)**

•Daylight dimming controls were installed in the Multnomah Building. These control the ballasts in fixtures in the perimeter daylight zones for each floor. Photosensors in the ceiling dim perimeter lighting fixtures in response to natural daylighting available. **The estimated savings for this energy conservation measure is over \$4,000 annually, plus a \$21,000 rebate from PGE.**



What if I'm not building a new building but I want my work place to be green?

• How to **green** your office environment:

•Lighting

•Occupancy Sensors

•Occupancy sensors detect the presence of people in a room. When there's no one there, they turn off the lights. When someone returns, they turn the lights back on. This technology works quite well in storage rooms, conference rooms, break rooms,

•**CASE IN POINT – Northwest Elementary School (Pasco County, Florida)**

•They replaced conventional light switches in classrooms, offices, and other spaces with sensors. **Detailed before and after monitoring showed that the sensors saved 10% of their lighting energy and paid for themselves in 5 years.**



What if I'm not building a new building but I want my work place to be green?

• How to **green** your office environment:

•Lighting

•Pick the proper fixture or replace inefficient fixtures

•Choose the most efficient fluorescent lighting fixtures available if you are replacing lights or replace old fixtures with new ones (this can pay for itself).

•**CASE IN POINT – Empire Bolt & Screw (Spokane, Washington)**

•Empire Bolt & Screw, a Spokane wholesaler, replaced T-12 fluorescent lamps and magnetic ballasts with more efficient T-8 lamps and electronic ballasts. **The company's lighting bill dropped by 1/3.**



What if I'm not building a new building but I want my work place to be green?

• How to **green** your office environment:

•Paper Products

•Reduce Paper Use

•In many cases you don't need a paper copy of a document. An electronic copy may be fine. The advantages of electronic copies are paper, postage, and storage space savings. They also allow electronic search capabilities you don't have with paper documents. Only print when necessary. Edit electronically.

•**CASE IN POINT – Owens Corning (worldwide)**

•Owens Corning recently made all of its offices worldwide "paperless." **Having previously had 14,000 file cabinets around the world, the company has already saved \$30 million in lease costs.**



What if I'm not building a new building but I want my work place to be green?

• How to **green** your office environment:

•Paper Products

•Just the Fax, Maam...and Print Less

•When faxing, use a stick-on label on the first page of the fax message instead of a full-page cover sheet. This will save energy, paper and long-distance phone costs. You can also save with reusable inter- and intra-office envelopes. Maintaining shared files and reviewing external mailing lists and internal distribution lists for accuracy can cut paper use too.

•**CASE IN POINT – Legacy Health Systems (Portland, Oregon)**

•Nurses at Legacy determined that much of the photocopying they did was unnecessary. Previously, seven copies were made of each admitting record. They found that less than half that many were typically needed. **Now they only print one record, which is then copied only when needed. This saves more than \$125,000 per year.**



What if I'm not building a new building but I want my work place to be green?

• How to **green** your office environment:

•Paper Products

•Two-Sided Print / Copy

•When you need new office equipment, purchase copiers and printers that automatically print on both sides. Many copiers can be easily programmed for that. Most new laser printers have a duplex option. Some can do both traditional book style duplexing. Individual PCs can also be programmed to make duplex printing the default norm.

•CASE IN POINT – Mentor Graphics (Wilsonville, Oregon)

•Mentor Graphics adopted a policy that all copy orders will be made double-sided unless single-sided copying is specifically requested. **Copy paper use decreased 35% in one year, saving more than \$15,000 in paper costs alone.**



What if I'm not building a new building but I want my work place to be green?

• How to **green** your office environment:

•Paper Products

•Recycle Paper, Use Recycled Paper and Minimize Use of Paper

•**1 ton of 100 % recycled paper saves the equivalent of 4,100 kWh of energy, 7,000 gallons of water, 60 pounds of air emissions, and three cubic yards of landfill space.** Conserving energy and natural resources can be as simple as recycling and buying recycled paper products. Look for the recycling symbol.

•CASE IN POINT – Mentor Graphics (Wilsonville, Oregon)

•Mentor Graphics saves paper by keeping its mailing lists for promotional materials efficient and targeted. This helps to identify people who are no longer available to receive mail. One such "clean-up" activity cost **\$7,000 in labor but saved \$14,000 annually by reducing printing and postage of misdelivered sales catalogs.**



What if I'm not building a new building but I want my work place to be green?

• How to **green** your office environment:

•Power Down

•An easy way to **stop emitting 1TON of carbon dioxide a year** is by powering down your computer at night! Count up the computers in your home or office and that's a lot of tons of CO2!

Powering down at night and setting it to sleep when idle during the day can **reduce energy use by 80%!**



What if I'm not building a new building but I want my work place to be green?

• How to **green** your office environment:

•Power Down

•Turn off **vampire electronics**—they are energy suckers

•Computers, CD and DVD players, microwaves, coffee makers, and gadgets that need to be charged, such as cell phones, PDAs, etc.

•**On a national level, "the latest estimates show 5% of electricity used in the US goes to standby power. This amounts to about \$4 billion a year."**



What if I'm not building a new building but I want my work place to be green?

• How to **green** your office environment:

•Heating and Cooling (HVAC-Heating, Ventilation, Air-Conditioning)

•Proper Operation

•Turn heating and cooling off when not needed and adjust the temperature settings to avoid overheating or over-cooling. An adjustment of only a degree or two can cut heating or cooling bills by 2-3%. Extending that to three or four degrees can produce savings of 10 percent or more.

•CASE IN POINT – Aster Publishing Building (Eugene, Oregon)

•In 1994, the Aster Publishing Building (APC) upgraded the HVAC system, energy management controls, air handlers, and economizers in its downtown headquarters building. At the time of the upgrades, this 66,300 square foot office building was approximately 11 years old. **As a result of the system corrections, APC saves more than \$40,000 annually on its electric bill.**



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•Heating and Cooling (HVAC-Heating, Ventilation, Air-Conditioning)

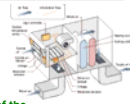
•Proper Maintenance and Efficient Products

•**Good equipment maintenance pays off in higher reliability of the equipment and reduced operation costs.**

•Older HVAC equipment is usually not as efficient as newer products. Inexpensive HVAC equipment costs more to operate than the premium HVAC technologies. When replacing heating and cooling equipment, specify the most efficient models.

•CASE IN POINT – Barker-Haaland Insurance (Corvallis, Oregon)

•This insurance company upgraded its HVAC system. The primary goal was to improve employee comfort and productivity. **A new, properly sized air conditioner provided the same amount of cooling with 50% less electricity. A continuous speed fan was replaced with a variable speed fan that reduced fan electric load by 42%. While the energy savings are significant, the improved employee productivity made possible by a more comfortable office delivers far more in dollar savings. A 2% labor productivity improvement would pay for the entire retrofit in one year.**



What if I'm not building a new building but I want my work place to be green?

• How to **green** your office environment:

•Heating and Cooling (HVAC-Heating, Ventilation, Air-Conditioning)

•**Programmable Thermostats**—eliminate unnecessary HVAC use during hours when a building is unoccupied.

•**Window Films / Shading / Energy Efficient Glass**—Interior shades and blinds can help keep the heat out. Shading options include awnings, solar shade screens, or tinted window film. High energy efficient glass also comes with the coatings that prevent too much heat gain.



What if I'm not building a new building but I want my work place to be green?

• How to **green** your office environment:

•Other Ideas

•**Carpooling, Biking, Showers and Lockers**—reduce gas miles and improve employee health and productivity...but most will not bike without available showers!

•**Re-refined motor oil / Recycled Antifreeze**—make non-renewable resources last longer if you have automobile fleets.

•**Establish Resource Conservation Managers**—savings are often much greater than their salary.

•**Form an employee Green Team**—get people excited and engaged in the green initiative.

•**Adopt an Organization-Wide Sustainability Policy**—build sustainability into the DNA of your company.



So what's the bottom line?

• Being a green business will help save the world AND save some money!



Now you're talking my language... where can I learn more about being green?

• USGBC.com

• treehugger.com

• www.dxdempsey.com (click on evergreen in the center of the X)



DxDempsey
Architecture Design Planning

Now you're talking my language... where can I learn more about being green?



www.the570.com —click on Videos then Evergreen

Now you're talking my language... where can I learn more about being green?



• www.dxdempsey.com (click on Downloads for a copy of this presentation & this desktop wallpaper w/ an office checklist)