

Green Trends in the Higher Education Environment

Strategically purchasing technology for a sustainable future

What is it?

Higher education institutions are hubs of research and intellectual activity, employing experienced scholars and schooling the future workforce. As such, they are also often the instigators of positive changes or shifts in the outside world around them. As climate change and pollution have become a reality and a threat to our nation's future prosperity, higher education institutions have been proponents of green initiatives, often leading the way in environmental construction, practice and purchases.

In addition to protecting the environment, green practices can go a long way in helping schools operate more efficiently and cost-effectively — measures that are desperately needed during tight fiscal times. This paper will look at some of the green trends happening in higher education today as well as the practices — including strategically purchasing technology — that colleges and universities can employ to lower costs, become more sustainable and help the environment.

Being Green in Hard Times

The recession and its attendant effects on the budgets of higher education institutions has understandably deterred initiatives and projects proposed during flush economic times. However, green initiatives continue to be important in higher education — spurred on by backing from the federal government. President Obama has made clear his priorities of addressing climate change — in part by reducing greenhouse gases — and lowering energy consumption.

Colleges and universities are stepping up to the plate. The higher education sector is now the largest purchaser of wind energy in the U.S. and 500 schools have institution-wide sustainability or environmental committees. In addition, 300 campuses have conducted campus sustainability assessments, with hundreds more working to implement assessments.¹

Higher education leaders are demonstrating their dedication to environmentally sound practices and serving as an example to the private sector and the general public. The American College & University Presidents' Climate Commitment (ACUPCC) is a network of over 650 college leaders who are working to eliminate net greenhouse gas emissions from specified campus operations and to promote research



and education efforts of higher education to equip society to re-stabilize the Earth's climate.²

Community colleges are also working to be more sustainable despite difficult financial times. Results from the Center for Digital Education's 2010 Digital Community Colleges Survey showed that higher education institutions are continuing myriad efforts to put sustainable practices in place. According to the survey:

- 54 percent of responding colleges have instruments to measure energy efficiencies;
- 60 percent use e-waste recycling efforts and Earth-friendly disposal; and
- 27 percent of responding community colleges are pursuing transparency about their carbon footprint — a 16 percent increase since last year.³

Green Trends in Higher Education

• Construction

Perhaps one of the largest trends in higher education is green building and construction. The nationally recognized LEED (Leadership in Energy and Environmental Design) certification program is used as a benchmark in the

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design and construction of green buildings to promote sustainability.

According to the U.S. Green Building Council, as of April 2010, there were 634 certified LEED projects in higher education and 3,179 registered projects.⁴

Florida Atlantic University recently completed its living and learning laboratory in the College of Engineering & Computer Science. The facility was the state's first academic building designed to LEED Platinum standards — the highest ranking — and was built to decrease the college's carbon footprint in every way possible.⁵

Butte College in Northern California has been a leader in sustainability over the past few years and was one of the first colleges to sign the ACUPCC. Recently, the college built its first LEED Gold-certified ARTS building, enabling the college to be environmentally friendly and to save money. The college is also currently working to complete its Phase III solar project which will add 15,000 solar photovoltaic panels and ultimately make the school the largest solar-producing college in the world. The college will produce enough clean, renewable energy to cover all of its electricity needs and generate slightly more than what is needed, bringing in an additional source of revenue.⁶

- **Technology Purchases**

Although much attention is paid to green construction and environmental practices in building, the decisions education leaders make in purchasing technology can also have a large environmental impact — and a significant impact on a school's bottom line.

Campus IT departments can take on green IT projects that don't take much investment up front but that can bring big benefits in the future. Replacing legacy desktops with more energy-efficient computers saves energy, reduces staff time on maintaining outdated equipment and streamlines hardware maintenance.

Portland State University expects an annual savings of \$15,000 just from replacing older CRT monitors with LCD monitors.⁷

Montgomery County Community College has “policies and procedures in place to reduce our environmental impact,” says Frank Lieb, director multimedia specialist for the college. The IT decisions the college has made have



a positive influence on the college's environmental efforts. “On an IT level, the purchase and installation of projectors and displays further enhances the college's commitment to sustainability. Because each projector lamp lasts 3,000 more hours than those used previously, the college has seen a 60 percent reduction in the number of lamps purchased and discarded. In addition, all of the college's projectors and displays are remotely managed to power down on evenings and weekends, resulting in significant energy savings,” says Lieb.

Consciously green engineered products reduce carbon output and lower power consumption. These factors combine to yield an overall lower cost of ownership.

Considerations When Purchasing Technology

- **Energy Efficiency/Energy Star**

Cutting costs by improving energy efficiency is a real and tangible goal for any higher education institution. Energy wasted by computers and monitors alone accounts for about \$1.5 billion a year and more than half of this energy is wasted just because monitors are left on at night.⁸

Energy Star, a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy, is now an international standard for energy-efficient products. When campuses purchase Energy Star-certified products they can expect them to use about 20 to 30 percent less energy.

By adopting Energy Star power management software, the Harvard University Kennedy School of Government is saving more than \$14,000 a year by enabling 800 computers to power down to sleep mode when not in use.⁹

- **Desktop Virtualization**

Desktop virtualization follows a server-centric computing model that separates a personal computer desktop environment from a physical machine and provides on-demand customized desktops. Desktop virtualization

uses less energy, reduces hardware and software costs and requires less IT support.

When Pepperdine University in California was faced with having to replace outdated computers in the various labs across campus, IT leaders estimated it would cost about \$25,000 even with low-cost PCs. By turning to desktop virtualization instead, the university saved about \$18,000 in up-front costs and gained environmental benefits by reducing the 19,000 kilowatt hours used annually to 2,208.

- **E-recycling Programs**

About 130 million new PCs are produced each year and only about 12 percent of discarded computers are recycled causing a surplus of e-waste and environmental dangers across the nation.

To deal with this issue, many higher education institutions are adopting e-recycling programs. Leaders from Ohio University ensure that all e-waste components have their own recycling route. The surplus department resells old computers; cell phones go to an electronic-waste collection company; and monitors and TVs get shipped to a buyer in California.

Other campuses such as the University of Hawaii and the University of Indiana Bloomington host e-waste collection days to spread e-recycling efforts throughout the larger community. E-waste efforts such as these all contribute to a larger effort of reducing toxicity and creating a better use of resources.

Conclusion

Higher education institutions across the nation have been leaders when it comes to green construction, practices and purchases. The campuses highlighted in this paper prove that you can still be environmentally conscious under tight budgets. Making smart investments in technology now can decrease your bottom line and prepare your campus for a sustainable future.

How can I find out more?

- American College and University Presidents' Climate Commitment
<http://www.presidentsclimatecommitment.org>
- Association for the Advancement of Sustainability in Higher Education
<http://www.aashe.org/>
- Energy Star for Higher Education
http://www.energystar.gov/index.cfm?c=higher_ed.bus_highereducation
- U.S. Green Buildings Council
<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=124>
- Panasonic Projectors
<http://www.panasonic.com/higher-ed/projectors>

Endnotes

1. <http://www.educause.edu/EDUCAUSE+Review/EDUCAUSEReviewMagazineVolume44/HigherEducationandtheCleanEner/185407>
2. <http://www.presidentsclimatecommitment.org/>
3. <http://www.convergemag.com/awards/digital-community-colleges/Converge-Data-Expose-2010.html>
4. <http://www.usgbc.org/ShowFile.aspx?DocumentID=7087>
5. <http://www.green.fau.edu/>
6. <http://www.builditgreen.org/en/art/153/>
7. <http://www.edtechmag.com/higher/november-december-2010/going-green-one-step-at-a-time.html>
8. http://www.energystar.gov/ia/products/power_mgt/University_Case_Studies.pdf
9. Ibid.
10. <http://campustechnology.com/articles/2010/04/01/managing-ewaste-responsibly.aspx>

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