



# Burnt Orange and green

Across the globe, millions are joining the movement to save the environment.  
What's slowing UT's — and the rest of the world's — progress is a lack of coordination.  
But a united front for sustainability may not be far off for the Forty Acres.

BY REBECCA FONTENOT

**S**AVE THE PLANET. These three simple words certainly fit in with the enviro-axioms. Save water, save energy, save resources ... All straightforward tasks. But saving the planet? Not so simple. That takes changing habits and, much harder, attitudes.

There's no simple fix for politicians to legislate. We can't go to war for it; we'd be fighting ourselves. They can't just outlaw something. Gas is needed to run cars to get people to work and allow them to shop and to keep the economy afloat. It will be up to the leaders of tomorrow to roll out alternative energy sources, invent water-saving products, and live, promote, and teach eco-conscious values. Those leaders are today's college students. And so is it too much to expect universities to be leading the way?

The University of Texas at Austin is filled with some of the world's smartest brains, most innovative researchers, and most persuasive lecturers. It attracts students from all over the world, with award-winning academics, outstanding athletics, and a reputation for good ol' Texas fun. But it's yet to be recognized as a leader in sustainability initiatives.

That isn't to say the effort isn't being put forth. In the past decade, student organizations recognizing a need for a shift in the University's attitude toward global warming, climate change, sustainability, and all those other buzz words have popped up all over campus. Professors who have long researched these fields jumped at the growing student interest with new courses and research centers exploring global warming's effect on all professions and the measures each needs to take. Campus operating services started devoting more time to conservation efforts, and in 2006, the administration answered the call from faculty, students, and staff for an official plan with the President's Task Force on Sustainability.

Yet something is still missing. The three campus communities

of academics, activists, and administrators continue to do their parts to push ahead in the world-wide race to save Earth. What may take us to that next level is uniting all three, which members of the task force hope to do.

"I think we have a ways to go," says Pat Clubb, UT vice president for employee and campus services and co-chair of the task force, "but we're on the right track." Her sentiment was echoed in almost the exact same words by green leaders across campus. The University has gotten a similar stamp of approval from the Sustainable Endowments Institute, a nonprofit based in Cambridge, Mass., that engages in research and education to advance sustainability in universities in the United States and Canada. Each year, they issue a college sustainability report card rating the 200 universities with the largest endowments in five categories of campus operations and three relating to how endowments are invested in sustainability-promoting funds. The 2008 report card, released in October, gave the entire UT System a B-minus, noting such positive efforts as the Task Force on Sustainability, a sustainability coordinator — Chelsea McMellen, who arrived in September, energy conservation projects, recycling, UT's move toward meeting U.S. Green Building Council's LEED certification in construction, and students' ability to ride Capital Metro buses free of charge. The rating was an improvement from last year's C-plus and it was better than all of Texas' other rated schools. The University just missed the top quarter of schools, but when has UT ever settled for average?

#### SERVING & CONSERVING

The University isn't just jumping on the "green bandwagon." In fact its conservation measures have been saving water, energy, and money for decades. UT is one of about 100 universities in the nation to produce its own electricity (and has been since 1929) and one of only a handful that produce 100 percent. By





Campus Environmental Center students sort through bags of recycling collected on campus, separating plastic, aluminum, and trash for the Recyclemania competition. Photo courtesy CEC.

producing rather than purchasing, the University emitted half as much carbon as it would have by buying all of its power. In the last 10 years, that accounts for 2.5 million tons of CO<sub>2</sub> not released. Within that handful, UT has the largest combined heating and power system of any university in the country, says Juan Ontiveros, Utilities and Energy Management director.

“We have this legacy of efficiency, and we want to maximize what we have already and take it to the next level,” Ontiveros says. Maximization has been key the last 10 years when the campus has seen a 10 percent growth in size and close to 25 percent growth in electricity use yet no rise in fuel use. How is it done? By recycling energy. As a combined heating and power plant, the by-products of production from one type of energy are used to produce another.

There are basically three end goals of production: power, steam, and chilled water. The steam is funneled out to campus for heating needs, and the chilled water is used to cool buildings and lab equipment. Every bit of energy is being used and reused, bringing the power plant’s overall efficiency far above a normal generator or power plant. The past decade has also been focused on replacing and upgrading outdated equipment, and to date the whole system is almost 75 percent efficient, Ontiveros says. By 2010, he’s hoping to bring its efficiency even higher and, therefore, fuel use to a decade low.

At the same time that energy is being recycled, water on campus is being reused. Four chilling stations cool water through evaporation. “When you go swimming and you get out of the water and the wind blows across your skin, you feel cool because of the evaporation of the water molecules off your skin,” technical staff assistant Rusty Osborne explains. On a hot summer day one million gallons of water may evaporate from the chilling stations.

So they look for reusable water wherever they can get it, which turns out to be from four major sources: water used to

cool laboratory equipment, ground water collected from drains surrounding subsurface buildings, swimming pool water that’s past its prime, and condensation from air conditioners — the best kind, Osborne says, due to its cold, distilled nature. This water-recovery program, begun in the ‘80s, has recycled more than 1.25 billion gallons of water and brought total usage down 200 million gallons a year — UT now consumes around 800 million gallons of water annually.

While the University is saving millions of dollars with these conservation measures — \$7.5 million to date from water recovery and about \$20 million per year by producing rather than purchasing electricity — it’s not all about the dollar sign. None of the initiatives taken would impede the growth of the University. Ontiveros says there are two ways to be sustainable: by using green energy like solar or wind power or, he says, “the cheapest green energy is the one you don’t use.”

In that mind-set, the Demand Side Energy Management and Conservation Program kicked off last fall. Under the umbrella of Facility Services, DSEMC (duh-sem-see) is a \$16 million endowed initiative to use less energy through equipment upgrades, renovations, and a campaign to change the attitudes of the University community regarding energy use. Their goal is to reduce energy usage by 25 percent, Facility Services manager Al Lewandowski says. It’s projected payback occurs in six years, though Lewandowski estimates it will be even sooner.

Though not official University departments, the divisions of Recreational Sports and Housing and Food Services have also chosen to opt into the program. DHFS has shown growing interest in green activities the last few years, cooking with locally grown foods and encouraging students to use tote bags rather than plastic when shopping in their stores. They partnered with the student-run Campus Environmental Center (CEC) last fall for an energy-saving competition among dorms.

CEC also partners with Facility Services to expand the recy-

cling program on campus, which began in 1994 when the city of Austin mandated that all large institutions recycle 40 percent of their waste. Once the University attacked its paper, it immediately met that mark. To date, UT still recycles only paper, but Facility Services director Mike Miller says there’s great excitement surrounding the grass roots effort to expand the recycling program beyond paper. CEC currently fills the gap left by Facility Services by recycling cans and bottles. Twenty-five large blue barrels maintained by the students are placed outside of buildings around campus, and volunteers come by buildings as requested to pick up recyclables collected from offices.

This is also the second year that UT has participated in Recyclemania, a competition among universities. In the 2007 challenge, UT ranked first in waste minimization — lowest cumulative pounds of waste per person on campus. The 2008 competition ran from January 28 through April 5. (At press time, results were unknown but UT was not expected to place in the top five.)

Miller says Facility Services is eco-friendly in other ways during their day-to-day work, like recycling metal and wooden pallets and replacing campus vehicles with electric carts or alternative-fuel-powered trucks. UT will even be acquiring one of the first propane-run lawn mowers in the country.

Environmental Health and Safety, the department managing occupational health and safety on campus and in labs, maintains similar efforts and recently added an environmental operations section. Working with EHS and the Center for Science and Practice of Sustainability, Chelsea McMellen became UT’s first sustainability coordinator last fall. Director Shere Abbott initiated the center in 2006 to bridge the gap in sustainability work between operations and academics.

Abbott also co-chairs the task force with Clubb. Within Clubb’s office, Project Management and Construction Services now plans all new construction to meet LEED certification, preferably a silver rating, Clubb says. LEED ratings are based on a points system with one point each given for meeting a variety of standards, such as building on a site within a community (close to a number of businesses, churches, restaurants, etc.), construction waste management, indoor air quality, meeting minimum energy performance, or building with recycled or renewable materials. The first completed building meeting this standard was the Research Office Complex at the J.J. Pickle Research Campus. Upcoming projects include the AT&T Executive Education and Conference Center, the Student Activities Center, and the Experimental Science Building rebuild, which will have the campus’ first green roof.

The roof will be two layers, one of which, making up the one-third of the building towards Gearing Hall, will be a flat surface made of materials that allow for an area to grow grass or wildflowers, rather than the typical gravel or shingle rooftops. The growing plants will emit oxygen and take in carbon dioxide. This is modeled after the U.S. Green Building Council’s definition of a green roof and research done at the Lady Bird Johnson Wildflower Center, says John Rishling, associate vice president for campus planning.

#### REUSE, RECYCLE, RESEARCH

The School of Architecture is also advancing by leaps and bounds in green building. Their sustainable design program offers a master’s degree and PhD in the field. Biennially, architecture students team with engineering, interior design, and other majors to compete in the U.S. Department of Energy’s college Solar Decathlon, in which the teams must design, build, and transport to Washington, D.C., an attractive and energy-efficient solar house. UT’s 2007 entry, BloomHouse, achieved an overall standing of 10th place, out of 20 teams, winning first in the hot water category.

The school is also home to the inter-disciplinary research Center for Sustainable Design, founded in 2002 by professors Steven Moore and Kent Butler and with great support from then-new dean Fritz Steiner. The Center for Energy and Environmental Resources, organized in 1974, also brings researchers together at the Pickle Research Campus and reports to the Bureau of Engineering Research in the Cockrell School of Engineering. Researchers there are currently working on several

projects relating to air quality. The director of the center, chemical engineering professor David Allen, will also serve as director of a new entity in the school, the Energy Institute, set to open in the fall.

Across campus, the Jackson School of Geosciences partners with several other schools to provide interdisciplinary research and community outreach through the Environmental Science Institute’s programs, like the popular “Cool Science — Hot Talks” series open to the public and a project that pairs graduate students with K-12 science classes for field trips and interactive workshops.

These professors aren’t letting their expertise go to waste. Courses in geology, geography, biology, law, and even economics have been designed to accommodate the growing interest students from all disciplines have shown in environmental issues.

By producing all of its power, UT has prevented the release of 2.5 million tons of CO<sub>2</sub> over the past 10 years — the equivalent of 200,000 acres of forest.

commodate the growing interest students from all disciplines have shown in environmental issues.

#### SUSTAINABILITY WANTS YOU!

The administration can do everything in its power to be sustainable on the physical campus, and professors can research for hours on end, but students have been hearing since grade school it’s they who will change the world. And the ones at UT are not falling behind.

Student groups exist to encourage others into activism and practice, such as the Global Warming Organization and the student-organized event in January, Act Local — Think Global, which featured booths from student organizations and businesses and panel talks on four issues igniting the international agenda — sustainability, human rights and humanitarian intervention, public health and globalization, and social innovation.

University and community leaders addressed the issues to rooms full of students, answering questions about the causes of the issues, the future consequences, and the current things people can do. During the sustainability panel, UT sustainability coordinator Chelsea McMellen brought up the issue of a rising “green-collar job market” in which today’s students are going to have the upper hand from learning specialties in sustainability from classes, research, and peer discussion.



REBECCA FONTENOT

Above: Part of UT's combined heating and power plant

Right: the AT&T Executive Education and Conference Center, and all future construction projects, is expected to earn a silver LEED rating when completed in August.

Far right: the 2007 entry in the U.S. Department of Energy's Solar Decathlon, Bloomhouse, brought students from all studies together.



TIM TALIAFERRO



TIM TALIAFERRO

Schools across the Forty Acres boast organizations promoting sustainability in their fields. McCombs School of Business hosts a student chapter of the national professional organization Net Impact, which preaches sustainability in business practice. Similarly, the Cockrell School of Engineering is home to a student chapter of Engineers for a Sustainable World.

Faculty and staff play their part through green teams formed in numerous departments. The Green 'Horns, organized by EHS safety specialist Michele Hallahan and a colleague, sends an e-mail newsletter to the teams each month with ideas for conservation at work and in their personal lives. Faculty, staff, and students are invited to monthly meetings as part of the UT Sustainability Network, which strives to unite the University's three communities. McMellen tries to do her part with a monthly newsletter communicating projects and efforts across campus. She's also working on a sustainability directory and Web site to be launched later this year that will serve as hubs for information on all things UT and green.

It would be impossible to cover every green effort on campus. Every day new people are implementing new ideas. Though a lot is being done, campus experts agree even more is needed. But soon it may be easier, at least as far as securing monies for all these projects is concerned.

In 2007, an act to amend the U.S. Higher Education Act of 1965 was introduced directing the secretary of education to make grants available for universities to develop and implement sustainability practices that integrate campus operations with multidisciplinary educational programs, as well as to convene a summit of experts and leaders to encourage the efforts and implement them in communities and workplaces. A similar act was introduced in 2005, but did not make it out of committee before the legislative session ended. With politicians, academics, students, and, increasingly, the general public working together for Mother Nature, green might become as much a part of the campus scene as burnt orange. 🍌