

A woman in a red shirt is working on a bamboo trellis structure against a clear blue sky. The trellis is made of several bamboo poles tied together with ropes. The woman is looking up and adjusting the ropes. The background shows a modern building with large windows and some greenery.

2015 ANNUAL SUSTAINABILITY REPORT

Building a More Sustainable
One UC DAVIS

The background of the cover is a photograph of a large, leafy tree with some autumn-colored leaves. In the foreground, a person is sitting on a bench on the left, and a bicycle is leaning against the tree on the right. The scene is set on a grassy area with some bushes and a fence in the distance.

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UC DAVIS
**ANNUAL
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**CUTTING-EDGE FACILITIES
FOR THE 21ST CENTURY UNIVERSITY 4**

DIVERTING WASTE FROM LANDFILLS..... 5

**INVESTING IN EFFICIENCY TO MEET
OUR CLIMATE PROTECTION GOALS 6**

STEWARDING EVERY PRECIOUS DROP..... 8

**ENGAGING THE COMMUNITY
TO ADVANCE SUSTAINABILITY 10**

A HEALTHIER UC DAVIS 12

REIMAGINING THE LANDSCAPE 13

LETTER FROM THE CHANCELLOR 14

SOURCES 15



GOAL

All new building and major renovation projects will outperform California building code energy efficiency standards by 20 percent, achieve LEED Silver® certification at a minimum, and strive for LEED Gold®.

CUTTING-EDGE FACILITIES FOR THE 21ST CENTURY UNIVERSITY



UC Davis has more than 915,000 square feet of LEED® certified green building space, and another 1 million square feet of new or renovated space in the pipeline.

Last year, the Jess S. Jackson

Sustainable Winery Building was honored in the 10th Annual Energy Efficiency and Sustainable Design Best Practice Awards. The campus is currently seeking a Living Building Challenge Net Zero Energy Building Certification — a cutting-edge, rigorous green building standard — which would make the Winery Building the first UC facility to earn the prestigious recognition.

On our Sacramento campus, the UC Davis Medical Center's Parking Structure 3 won the 2013 Innovative Facility of the Year award from the National Parking Association. This seven-level structure includes rows of solar panels on the roof that provide shade for vehicles, while generating clean electricity.

From the LEED® Certified™ Platinum alpine environment lab in Tahoe, the first-of-its-kind LEED® Certified™ Platinum winery, brewery and food processing building, and the LEED® Certified™ Platinum residence halls, UC Davis is demonstrating that sustainable building can deliver major environmental and teaching benefits.

17

LEED® certified™ buildings



7 LEED Platinum®



7 LEED Gold®



3 LEED Silver®



GOAL

Divert 75 percent of solid waste from landfills by 2012 and reach zero waste by 2020 through active reduction, reuse and recycling programs.

DIVERTING WASTE FROM LANDFILLS



Recycling and reducing waste has a long tradition on both the Sacramento and Davis campuses. Through a variety of programs aimed at changing behavior, implementing new practices and installing unique systems, the Davis campus diverted 79 percent of its landfill waste this past year.

Not simply an administrative function, waste reduction is a key goal for academic

and research projects as well. A unique gravel washing operation using a cement mixer, a version of a sluice box used in gold mining, and recycled water, allows gravel used in animal cages to be reused. This process cleans over 1,800 tons of gravel annually and has increased campus waste diversion rates to nearly 80 percent.

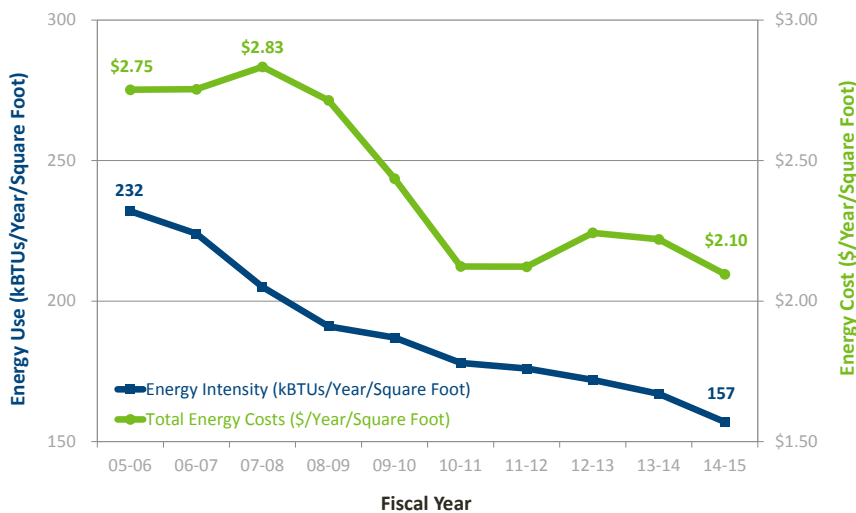
1,000 tons
recycled at the Health System in 2014



INVESTING IN EFFICIENCY TO MEET OUR CLIMATE PROTECTION GOALS

Campus Energy Use and Cost Per Square Foot

(includes renewable energy purchases and debt service for energy conservation projects)



UC Davis routinely invests in technology to make limited resources go further. Already, investments in energy efficiency upgrades have saved more than \$15.5 million in operating expenses since 2009 — money that can be invested back into the University’s core mission. As an example, the energy efficient design of UC Davis Health System’s two newest clinics will provide about \$100,000 in cash rebates from utility partners.

Efficiency improvements are a key component of the institution’s Climate Action Plan which is committed to reducing greenhouse gas emissions. On average, our buildings use 28 percent less energy today than they did eight years ago. Thanks to those reductions, per-building energy costs have dropped by 20 percent over this same timeframe.

Our efficiency measures expand outside of our walls. For example, outdoor lighting configured in a unique mesh network saves energy and increases safety and convenience. Here’s how it works: outdoor lights are maintained at 50 percent until a motion sensor detects movement, then they power up to 100 percent and send out a signal to nearby lights to power up as well.



GOAL

Reduce greenhouse gas emissions to 2000 levels by 2014, 1990 levels by 2020 and achieve carbon neutrality by 2025; reduce consumption of non-renewable energy using a combination of energy efficiency and clean energy projects.

Also critical to achieving our greenhouse gas reduction goals is the switch to clean renewable energy sources. Later this year, 16.3 megawatts of clean, solar energy will go online, making the 62-acre photovoltaic system the largest of any North American university campus. We also are harnessing the power of the sun in solar thermal systems at Leach Hall, Cuarto Dining Commons, Tercero and Solano Park student housing.

But the most efficient buildings are the ones that never get built. UC Davis Health System's Center for Health and Technology is revolutionizing the way quality healthcare is delivered throughout California. The Center's telehealth program — one of the largest in the country — gets critical care to more patients while cutting vehicle trips and reducing the need to build new buildings.

UC DAVIS WEST VILLAGE



UC Davis West Village is the nation's largest planned zero net energy community. Efficient building design to minimize energy demand is being combined with on-site solar production of green, renewable electricity. The end result is that the community — eventually the home to 4,200 students, faculty and staff — will produce as much energy as it uses each year.



Cut greenhouse gases nearly

36,000 metric tons

in 2014



\$15.5 million

energy efficiency savings since 2009



Installed **1,900** LED outdoor lights



STEWARDING EVERY PRECIOUS DROP

The Davis campus has nearly tripled its population over the past 40 years, and yet has managed to hold water use relatively flat through a wide variety of water efficiency projects and water conservation education (see chart on page 9).

Key actions to reduce water consumption include the following:

- **Design & Construction Management** revised the Campus Design Guide for new construction and building renovations to maximize water savings;
- **Environmental Stewardship & Sustainability** provided leadership and coordination of conservation efforts, and developed and managed campaigns to encourage voluntary conservation in partnership with other administrative and academic units;
- **Facilities Management** installed low-flow fixtures in about 1/3 of campus facilities, installed water-saving technology in renovation projects, and reduced waste in various building water purification systems;
- **Arboretum and Public Garden** has worked for a decades to both educate visitors and model water conservation, including converting thousands of square feet of turf to drought-tolerant landscaping, implementing high-efficiency irrigation, and capturing and using of rainwater;
- **Student Housing** installed low-water use fixtures, engaged in aggressive outreach campaigns to encourage residents to conserve water, and used its purchasing power to select a green-certified linen service provider;
- **Utilities** installed an extensive pipe and pump system to replace potable water with clean, recycled water used in equipment at the central cooling plant, and provided leadership across campus to help researchers and administrative units implement water conservation efforts; and,
- **Health Systems** made operational improvements at the central plant that reduced water use by 5.4 million gallons per year, and installed a new hospital medical gas / media vacuum system conversion to reduce water waste.

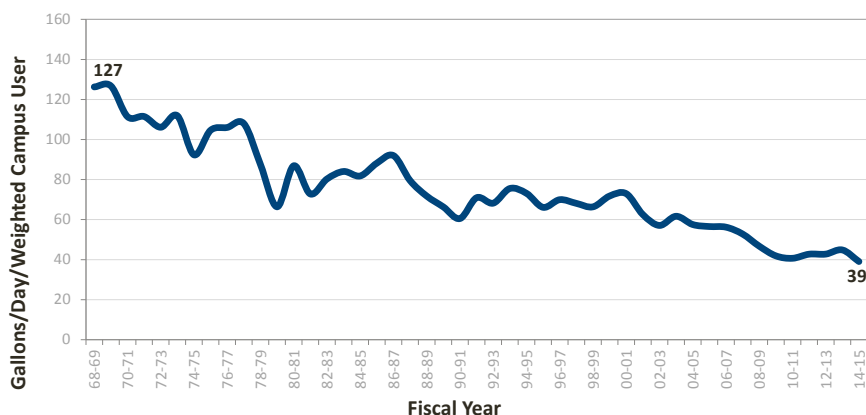
Together, these efforts have led to a total savings of 208 million gallons of water over the last 12 months compared to 2013 levels. Members from all sectors of the university continue to work together to identify projects to steward every precious drop of water.



GOAL

Reduce per capita potable water consumption by 20 percent by 2020.

Campus Potable Water Use, Per Capita



RECYCLED WATER PROJECT SAVES 61 MILLION GALLONS OF WATER

The utilities division opened the valve on a project that will save 61 million gallons of potable water annually on campus. In this cooling system project, the utilities division started using recycled water instead of well water to help chill the water that keeps the campus cool. The saved water amounts to about 9 percent of the campus's total potable water use for a year.

UC Davis has already met its policy goal to reduce potable water use by 20 percent by 2020.

Water use cut by

208
million
gallons

since June 2014



ENGAGING THE COMMUNITY TO ADVANCE SUSTAINABILITY



Student-led projects are an important component to the University's sustainability and efficiency efforts — from running a bus system to get more people out of cars, to working on a student farm, and participating in dozens of academic programs, clubs and organization. Our community engagement and volunteer opportunities earned UC Davis the respected 2015 Carnegie Community Engagement Classification.

Staff work regularly with faculty and students in their classes on projects related to campus energy use, conservation, and even generation. In spring quarter 2014, students worked with staff on several campus-based projects, including developing an energy-water savings factor to describe the relationship between water and energy use on

the campus. Campus staff members plan to use the factor to calculate potential water savings associated with future energy conservation/efficiency projects.

The campus infrastructure and operations offers students and faculty an extensive array of opportunities to work with staff and use the campus as a test-bed for learning, research and practical applications that advance sustainability on campus and lead to developments that can have national and international impact.



GOAL

Utilize our campus infrastructure and operations for student learning, research and practical work that advances sustainability on campus and leads to developments that can have national and international impact.

RENEWABLE ENERGY ANAEROBIC DIGESTER



In April 2014, UC Davis added a new chapter to its legacy of environmental sustainability by unveiling the UC Davis Renewable Energy Anaerobic Digester. Using technology developed at UC Davis, this new facility holds the capacity to turn 50 tons of organic waste each day into 5.6 million kilowatt hours per year of clean, renewable energy that powers the campus.


40
 environmental and sustainability related clubs on campus


260+
 green events on campus each year


180
 courses per year with emphasis on sustainability



GOAL

Procure 20 percent sustainable food products by 2020 for campus food service operations.

A HEALTHIER UC DAVIS



Created more than a century ago with a singular focus on agriculture, UC Davis is now one of the world's leading academic institutions committed to finding transformational solutions to feed and nourish the world for decades to come. The University recently opened the Global Food Center to tackle one of the most critical issues facing society today — how to feed a growing planet in an environmentally sustainable way.

In addition to our discovery research, UC Davis has instituted aggressive sustainable food standards university-wide to serve as a model of the industry. Given our size, we have the opportunity to influence an entire supply chain focused on promoting locally grown, water-wise, organic fruits, vegetables, meat and dairy products.

Already, residential dining halls on the Davis campus serve 29 percent sustainable food products; with retail dining more than halfway to the 20 percent sustainable food goal by 2020. The Health System has maintained the 20 percent sustainable food products for three years, and this year, launched a weekly farmers market to promote fresh, locally grown produce sold directly to consumers.



29%
sustainable foods in residential dining



20%
sustainable food served at UC Davis Medical Center



48%
food waste diverted from landfills



GOAL

Build sustainable landscapes that engage students and community to increase impact.

REIMAGINING THE LANDSCAPE TO CO-CREATE A MORE SUSTAINABLE FUTURE



The Arboretum and Public Garden has been creating beautiful landscapes adapted to our local climate for decades. Now, through the UC Davis GATEways Project (Gardens, Arts, Technology and the Environment), we are engaging student leaders and community members to dramatically transform the whole campus into a model of valley-wise gardens and grounds.

This unique approach results in more sustainable landscapes and transformational learning and leadership outcomes. Every person who helps create a new garden can emerge with a new “pride of ownership” for UC Davis, and a new stake in a healthy future for our campus and planet.

The Arboretum GATEway Garden project resulted in



\$1.3 million

raised from external sources



140

students designing, leading and participating



450

community volunteers engaged



UC Davis has a long tradition of embracing sustainability standards that advance best practices in higher education and beyond. Our history as a land-grant university makes us especially mindful of the natural resources we are called to steward.

Advancements discovered here at UC Davis in technology, science, social science, public health and the humanities are helping to develop new innovative solutions that will have a positive impact on our environment for generations to come.

While we have made great strides and continue to look for innovative ways to make a more sustainable institution, we continue to set aggressive goals to ensure we are both modeling and advancing environmental sustainability to our community and the world.

Please join us in building a more sustainable UC Davis.

Sincerely,

Linda Katehi

SOURCES

GB 2014 Annual Report on Sustainable Practices

Sustainable 2nd Century Green Building Ratings page

STARS 2015 data

2015 CHESC Best Practice Award application for sustainability innovation

UC Davis Institute of Transportation Studies Research Report – UCD-ITS-RR-14-14

Results of the 2013-14 Campus Travel Survey, September 2014

<http://blogs.ucdavis.edu/sustainability/2013/05/13/an-insiders-look-at-becoming-the-first-college-or-university-platinum-level-bicycle-friendly-business/>

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UC Davis Drought Action Plan Briefing (draft) April 2015 v2; UC Davis Drought Response Water Action Plan; GB 2014 Annual Report on Sustainable Practices

<http://sustainability.ucdavis.edu/progress/buildings/ratings.html>

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Expand transportation demand management programs to reduce environmental impacts from commuting.



76%

Aggies use alternative transportation

The League of American Bicyclists awarded the campus a double Platinum rating for Bicycle Friendly Business and Bicycle Friendly University, making UC Davis the first campus to achieve this rare distinction.

For more information, contact

Environmental Stewardship and Sustainability
436 Mrak Hall
University of California, Davis
One Shields Avenue
Davis, CA 95616

sustainability@ucdavis.edu
<http://sustainability.ucdavis.edu/>
www.facebook.com/UCDavis.Sustainability

One UC DAVIS