### OPPORTUNITIES FOR PHYSICAL INTERVENTIONS

NODES OF INFLUENCE: AREAS OF ENGAGEMENT THAT REFLECT AND/OR INFLUENCE THEIR SURROUNDINGS.



BOCCE BALL COURT

This permeable surface of sand and dirt allows for water to percolate into the soil rather than create undesired runoff. Bordering benches and tables also provide a space for social gatherings and interaction between community members.



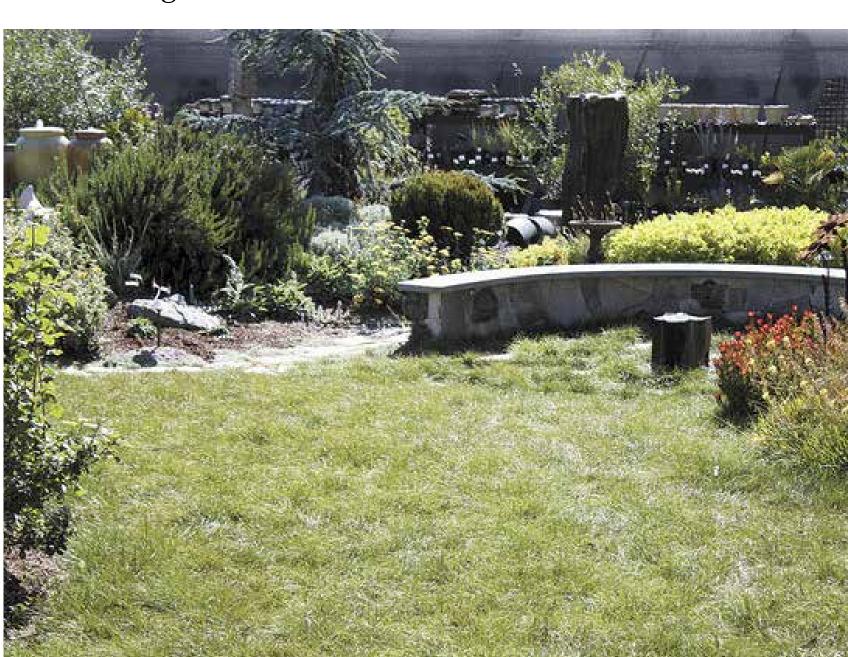
TERRACED STONE SEATING

These steps are a good alternative for steep lawns that serve to provide seating space. They do not require any irrigation and can potentially provide a space for moss to grow.



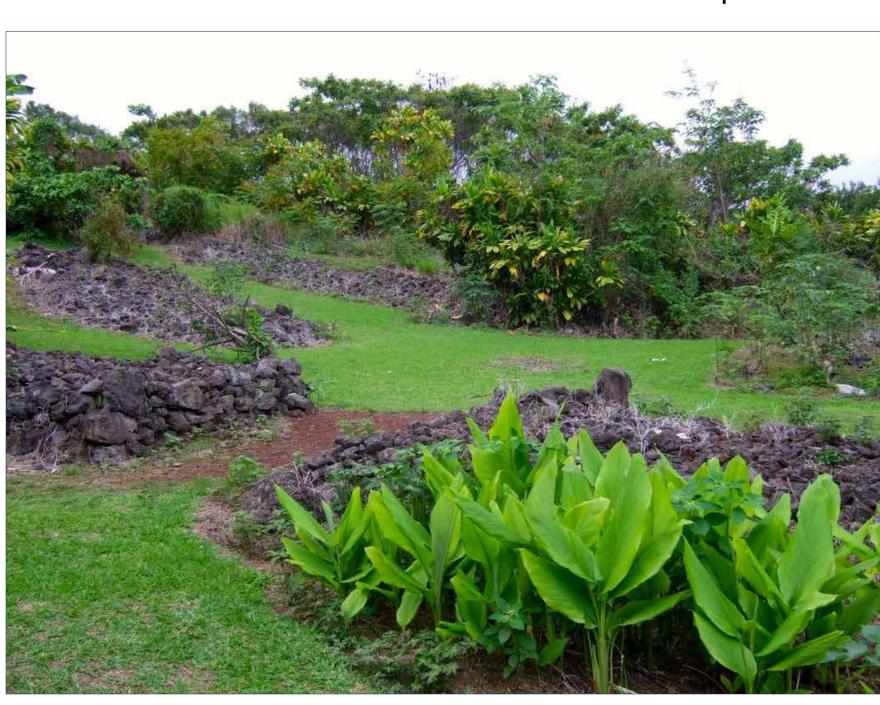
**C**EANOTHUS

Not only is Ceanothus drought tolerant, a California native, and a pollinator attractor, but it is also blue! As blue and gold are UC Berkeley's colors, we would love to see this theme carried into the landscape.



CAREX PRAEGRACILIS

California native field sedge, commonly used as lawn alternative, that requires watering weekly to biweekly when mature. Resembles turf when mowed, and can support various recreational usages.



ETHNO-BOTANY

These gardens teach about native history/culture, provide lessons in the variety of "productive landscapes" and the ingenuity of Native Peoples, and include native species require little or no supplemental water, fertilizer or pesticides.



RENEWABLE ENERGY STATION

University of Texas, Austin: solar charging stations. This is an example of an outdoor study space that uses renewable energy to provide shade to laptop users and doesn't need any irrigation.



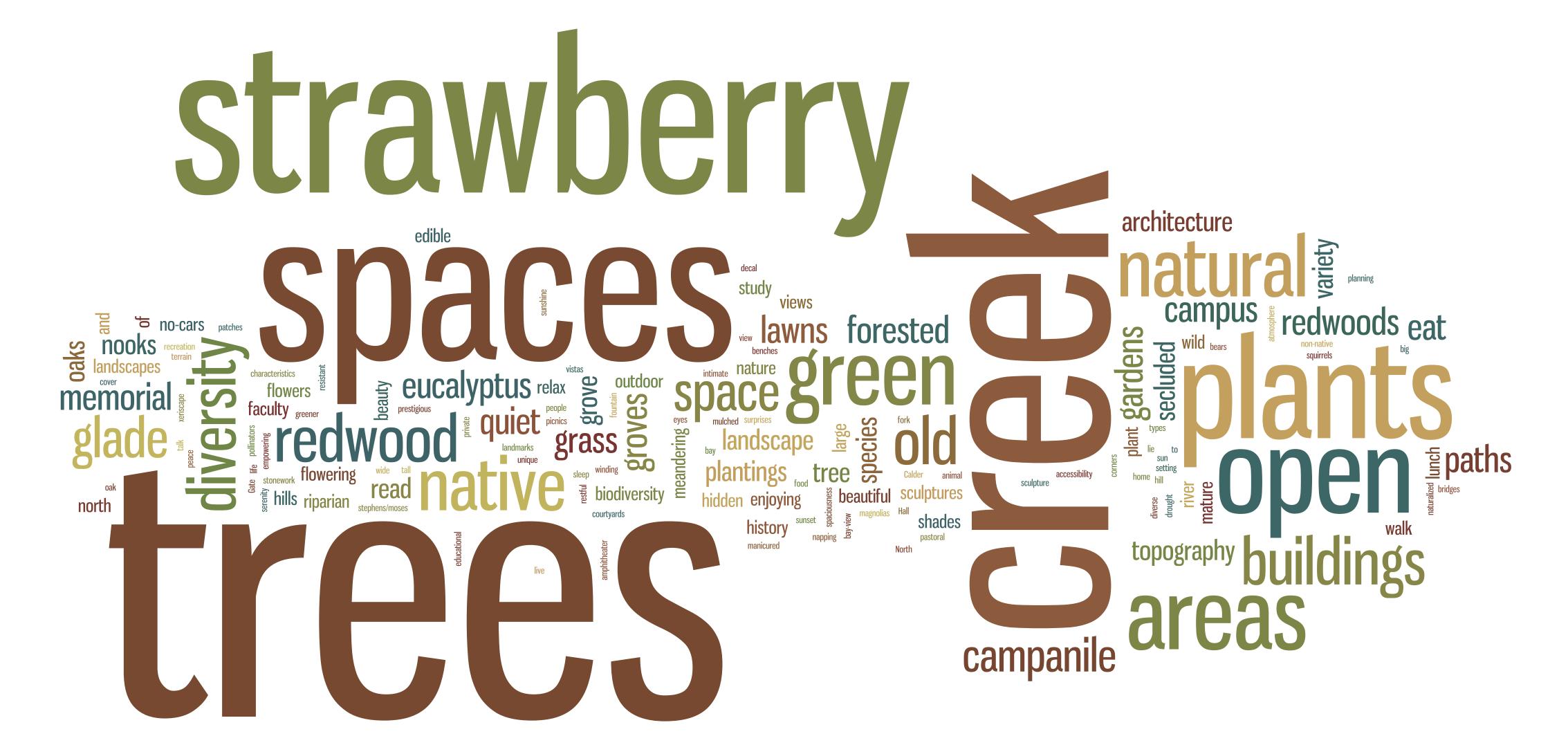
RAIN GARDEN

Rain gardens are composed of low maintenance plants that can withstand heavy moisture and extreme nutrient conditions. They clean and slow down stormwater runoff, while also providing habitat to birds and butterflies.

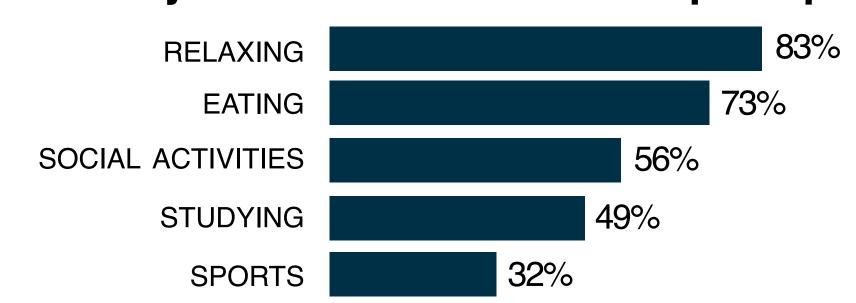


THYME Lawn

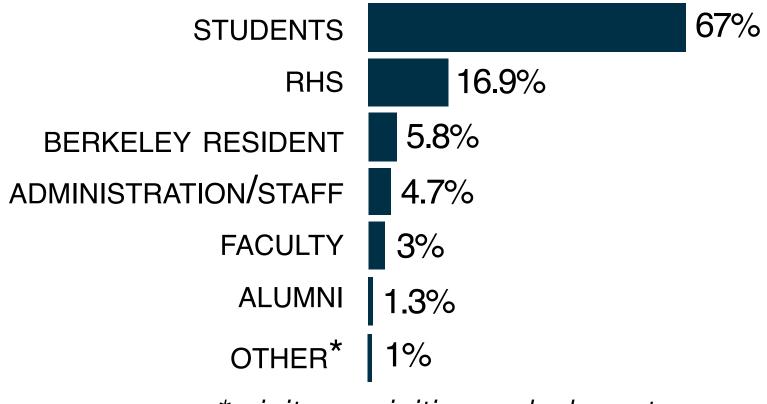
This drought tolerant lawn is a great way to preserve the visual aid of lawns. It is green for most of the year, but blooms into various shades of white and purple during the blooming season.



#### How do you like to use the lawn/open space?



#### What is your relationship to campus?

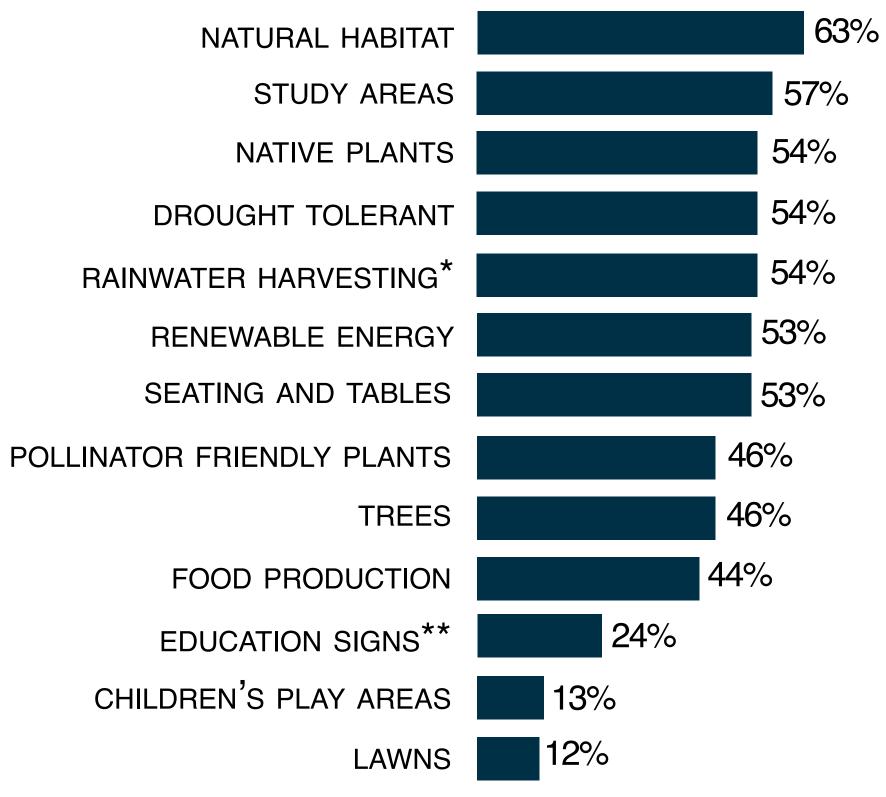


<sup>\*</sup> visitors, visiting scholar, etc.

#### **Composition of Campus Individuals**

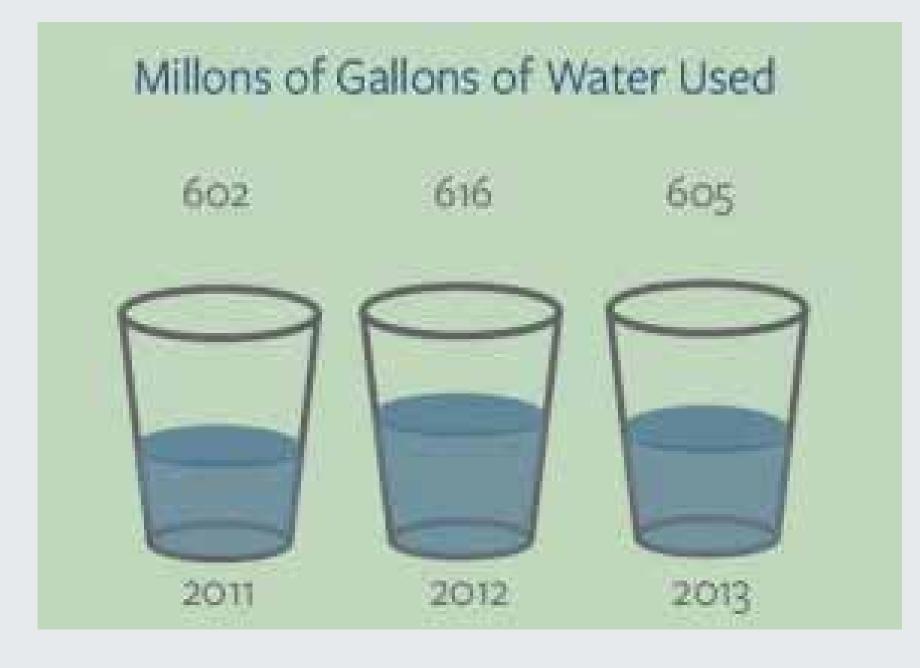
60%	37%	<b>-3%</b>
STUDENTS	STAFF	FACULTY

# What would you like to see more of in the campus landscape?



\* rain gardens, bioswales, grey water, etc.

Data gathered via online and in-person intercept surveys.



#### WATER OVERVIEW

According to the UC Berkeley campus Water Action Plan, 8% of all water usage goes toward lawn irrigation.

Through implementation of the plan, irrigation is reduced by 50% through ongoing efforts of lawn conversions to drought-tolerant landscapes.

**UC BERKELEY GOAL**: Reduce potable water use to 10% below 2008 levels by 2020. Double the water use reduction target if the local utility provides a non-potable source of water for irrigation.

**STATUS**: On Track

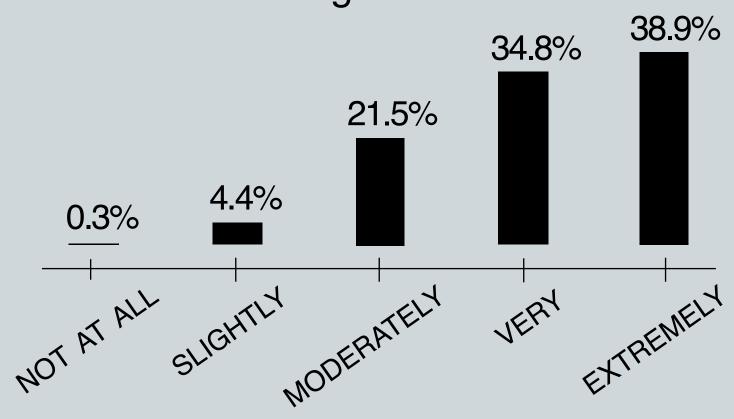
**SYSTEM-WIDE GOAL**: Reduce potable water consumption adjusted for population growth by 20% by the year 2020.

Source: UC Berkeley, Campus Sustainability Report | December 2014

"Almost all of California is in a "severe" drought, and nearly sixty percent, including Berkeley, is in an "exceptional" drought, which is the worst ranking on the US Drought Monitor report's five-step scale."

- Every Drop Counts: The California Drought and the Campus

## How concerned are you about the California drought?



<sup>\*\*</sup> regarding the campus landscape

# IDENTITY, IMAGE, VALUE:

# CAMPUS SYMBOLOGY



#### STUDENT INVOVLEMENT

There is no centralized system of communication for everyone - administration, staff, students, faculty, design/landscape experts, and more - to be involved with campus landscapes decisions. One of the key things taught in sustainability courses is the need for more collaborative design approaches, and this is lacking within the current structure for landscape changes.

**Question**: How do we create a centralized communication system that is efficient and effective and is a truly collaborative and inclusive process?



#### Communication

With increasing student tuition, students feel like they should have more decision making status within the UC structure. There is a great desire from students to be involved in helping UC Berkeley reach its sustainability goals. Students are already working to convert specific plots on campus and want to see these changes happen while they are still enrolled at UC Berkeley.

**Question**: What structures can be placed to prevent barriers to student involvement while also providing the expertise and encourage long-term thinking?



#### **FINANCES**

Being the oldest campus within the UC system, the majority of funding at Cal needs to go towards seismic upgrades, general repairs/maintenance of buildings. To fund the installation and maintenance of landscape conversions it is essential to investigate sources of income that do not rely on state funding. Donors, public-private ownership (P3), and taking out debt are the main options for funding. There is great potential for alumni & student connections to make this happen.

**Question**: How can UC Berkeley both increase funding to landscape conversions while also minimizing the cost of design, installation, and maintenance with student involvement in a way that is mutually beneficial?



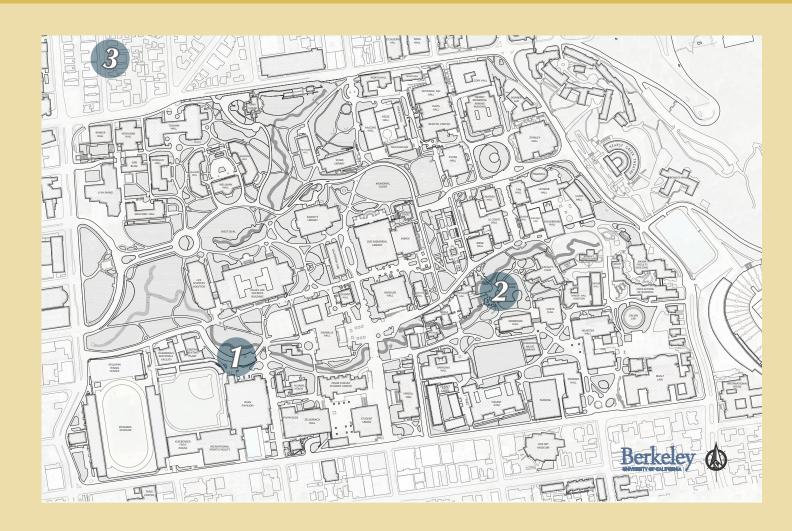
#### CLIMATE CHANGE

Climate change requires fast action to create resilient built environments and communities able to adapt to uncertain conditions. A recent study from Stanford University, and edited by the Oregon State University, "Anthropogenic warming has increased drought risk in California," shows how drought is related to human activity. The drought an issue that everyone in California must work together to ensure that our generation and the future generations are able to live here.

**Question**: How do we plan for campus landscape in a way that connects drought concerns with energy usage, global warming, and essentially not view the drought in a vacuum?



- More transparent communication and access to information between the administration and the student body
- Creation of a student land use committee
- Streamlined process of landscape conversion that incorporates existing efforts on campus (i.e. tgif, decal programs).
- Student design competitions, with rolling application periods and fast turnaround times for New Landscape ideas.
- Creation of online interface that provides current information about proposed landscape conversion projects.
- Creation of New Programs and the extension of existing programs in the sustainable environmental design curriculum, as well as other relevant majors, that can work on research and design projects regarding the campus landscape.
- Growing alumni network connected to landscape conversion projects.



#### POTENTIAL PROJECT TEMPLATES:

- 1. Grinnell Glade Bio-Retention Area
- 2. Strawberry Creek Ecological Stabilization Project
- 3. STUDENT ORGANIC GARDEN ASSOCIATION



#### 1. GRINNELL GLADE BIO-RETENTION AREA

This alternatives project was a parternship between UC Berkeley, East Bay Municipal Utility District (EBMUD), and campus Environment, Health & Safety (EH&S). One of the sustainable features of this project include weather sensitive irrigation control system that conserves water.



### 2. STRAWBERRY CREEK ECOLOGICAL STABILIZATION PROJECT

A collaboration of UC Berkeley faculty, staff, and students - in partnership with Environmental Science Associates, Philip Williams and Associates, Ltd. (ESA PWA) - are working to assess, design, and implement solutions to improve riparian habitat and ecological function at the confluence of Strawberry Creek on the Berkeley Campus.



#### 3. STUDENT ORGANIC GARDEN ASSOCIATION

The garden was created by a group of students as a class project (Interdisciplinary Studies 10) in 1971, shortly after the first Earth Day in 1970. This group of students wanted to create a beautiful organic garden where they could learn to grow healthy food while studying the ecology of food production and land management.