

## 3. Environment



### **Research Team:** Greening of UCSD

**Grand Challenge:** Sustainability Science and Greening the University

#### **Key Terms:**

Ecological footprint, sustainability, energy flows, community engagement, recreational space

**Student Leader:** Rahul Sharma

#### **Student Members:**

- Elyse Sanchez - Sustainable University Expansion: Energy Use and Regional Impact
- Everlynn Lleva - Energy Flow of UCSD's Food Consumption: Event Planning's Impact on the Environment
- Rahul Sharma - Recreational and Vital Losses: A Study of Green Spaces at UCSD

#### **Mentor(s) Leader:**

- John Dilliot

#### **Team Narrative:**

Our research team focused on the University of California, San Diego's (UCSD) efforts to green its campus. Over the last five years, the UCSD campus has expanded by more than 1 million square feet of facility space. The campus plans to add another 1 million square feet in the next five years. As the university expands, it becomes even more crucial for us to efficiently plan for a greener campus. Our group focuses on three areas at UCSD: catering, CO<sub>2</sub> emissions from facilities, and recreational spaces. We assessed the degree to which practices in these areas are green and sustainable.

My name is Everlyne Lleba and I did a case study of UCSD Catering. I designed a study to measure the greening of UCSD's catering practices. Food planning is still in its early stages and sustainable planning in the food division has not yet developed. I hypothesized that through local collaboration and networking UCSD Catering can minimize its environmental impact. I highlighted UCSD Catering's sourcing, waste and culture. The Regents of the University of California adopted the Policy on Green Building Design and Clean Energy Standards to promote sustainable building practices at all UC campuses. This prompted UCSD Catering to incorporate more sustainable practices such as using cups made out of corn for cold beverages. This in turn coincides with the campus-wide Environmental and Sustainability Initiative (ESI), which shows the whole campus involvement and UCSD Catering's level of awareness. Through my research I concluded that food planning is beginning to show up on the University's radar screen but that there is still much more to do in terms of sustainability. Awareness of the importance of food planning is growing and the future for food sustainability can only go up from here.

My name is Elyse Sanchez and I took a closer look at energy use and sustainability at UC San Diego. In my research, I asked the following questions: Are UCSD CO<sub>2</sub> emissions high compared to other universities? How do UCSD emissions compare to other large institutions in the region? Are the current sustainable practices regarding energy production and consumption going to be significant enough to improve the current ecological footprint? Energy use and natural gas consumption as well as waste production is a large part of what constitutes an ecological footprint. Though UCSD stands as a leader in sustainable energy use, its expansion in facility space has inevitably led to an increase in carbon dioxide emissions. According to the California Climate Action Registry, Qualcomm and UC Santa Barbara have significantly lower CO<sub>2</sub> emissions in the last few years than does UCSD. Focusing on UCSD, I hypothesized that if the medical buildings are more energy-intensive, then they should be the areas where any renovations or expansions need the most focus in green architecture and planning efforts. After analyzing the electricity use at three buildings on campus – the Stein Clinical Research Facility, the Leichtag Research Facility, and the Pepper Canyon Lecture Hall – I found that the two research laboratories, Stein and Leichtag, used significantly more electricity than did a lecture hall over a one year period. Additionally, the Stein laboratory even used more electricity per square foot than did the Leichtag building due to a venting system that sometimes uses more energy than is needed. It is the construction and usage of these buildings that most need our attention if we are to achieve a greener UCSD. To make UCSD's energy use more efficient, we need also to be more efficient in where we focus our efforts. To make it happen, we need only use the most powerful renewable energy source: ourselves.

My name is Rahul Sharma and my area of study is the design of green and recreational spaces. My project examined the integrated planning of green spaces for beneficial uses here at UCSD. I sought to evaluate how effective green spaces within the college residential neighborhoods have been in serving as sources of vitality and recreation for students. With 6 college residential neighborhoods here in campus I focused on 3 built environments that integrated distinct open spaces. The college neighborhoods of Eleanor Roosevelt, John Muir, and Earl Warren Colleges, each have recreational greens of comparable sizes designed into the centers of their residential complexes. These

were my areas of study and observation. As a campus UCSD employs a Long Range Development Plan that embodies goals and guidelines for the school's built environment future. This governing document spells out the need for green and recreational spaces to provide sources of campus vitality and recreational. Thus my research sought to evaluate how effective the existing spaces have been in serving this purpose. By observing usage patterns and proportions of residents by college neighborhood I was able to build upon the relationship between built environments and their resident's behaviors. Usages varied significantly between the colleges, creating another reason to research and establish their differences, successes, and failures. Ultimately by finding significant variances in infrastructural support for these spaces and by interpreting noteworthy design flaws a need for full evaluations of current spaces proved vital and necessary for the university.

Each of these projects shows that there is rising concern for building and incorporating green practices. However, we all find that there is still much room for improvement. UCSD is a large institution that needs to be smarter in terms of its future development and longevity. The environment and the limited resources that it provides have to be considered and protected. Personally each of us can do our part practicing greener actions. As a community we can encourage each other to continue being green, but nationally, there has to be a major change in our overall approaches to production and management. A holistic approach that includes all three levels of integration will help our goal of preserving what we have and where we project to grow.

### **References:**

Baines, James, and John Peet. 1992. Sustainable development and stock resources. In Sustainability and environmental policy: Restraints and advances., 86. Berlin: Edition Sigma.

Uhl, Christopher, and Amy Anderson. 2001. Green destiny:Universities leading the way to a sustainable future. BioScience. January 2001.

American Planning Association. Policy Guide on Community and Regional Food Planning (May 2007). <http://www.planning.org/policyguides/food.htm>

Search of Standards for Preserving Open Space (1964); by Gerald F. Vaughn; Public Administration Review, Vol 24, No. 4 <http://links.jstor.org/sici?sici=0033-3352%28196412%2924%3A4%3C254%3AISOSFP%3E2.0.CO%3B2-7>

Campus Landscape: Functions, Forms, Features (2000); by Ricard P. Dober; John Wiley and Sons

### **Links:**

Green Campus Overview - UCSD - <http://blink.ucsd.edu/Blink/External/Topics/Policy/0,1162,19561,00.html>

UCSD Long Range Development Plan 2004 - <http://physicalplanning.ucsd.edu/PPW-PlansStudiesProjects/LRDP2004/Default.htm>

UCSD Physical Planning Studies - <http://physicalplanning.ucsd.edu/PPW-PlansStudiesProjects/studies.html>

UCSD Neighborhood Planning Studies - <http://physicalplanning.ucsd.edu/PPW-PlansStudiesProjects/nplans.html>

**Multimedia Archive:**

Available presentations for this group can be found on the Senior Sequence website at:  
[http://seniorsequence.net/?page\\_id=440](http://seniorsequence.net/?page_id=440)