



Overview of UCSB's Sustainability Efforts

University of California, Santa Barbara

May 2, 2005





History

- Bren Hall
- Hosted the first and fourth UC/CSU Sustainability Conference
- Fall 2002, Virtual Office of Sustainability formed: Central Campus Sustainability Committee (CCSC) and Sustainability Working Team (SWaT)
- Winter/Spring of 2003 a full time position was developed to work on sustainability
- Academic year 2003/04 SWT/CCSC reached a consensus on indicators and populated them for benchmarking





History

Benchmark/Indicators

- General Information
- Energy
- Water
- Land/Built Environment
- Recycling/Waste Disposal
- Transportation
- Purchasing

Other areas Considered

- Education/Outreach/Community
- Food
- Research





Environmental Issues Task Force Charge

- Catalog what UCSB has and is already doing in the field of environmental study, including existing interest in campus and interdivisional/unit/personal collaboration
- Identify environmental interest themes that cross campus borders and might be of assistance in identifying future cluster hires
- Make recommendations to the EVC on ways that the campus can support and improve UCSB's educational endeavors in the area of environmental studies/issues. Identify the impediments to broader interdisciplinary work, be they structural, administrative, and/or individual





Environmental Issues Task Force Scenarios

- **Status quo**
- **Umbrella**
- **Sustainability institute**
- **College of the Environment**





Campus Structure

Acting Vice Chancellor for Administrative Services Donna Carpenter

Assoc. VC, Campus Design & Facilities

Marc Fisher

Asst. VC Physical Facilities, Parking & Trans Services

David Gonzales

Director, Design & Construction Services

Jack Wolever

Director, Physical Planning

Tye Simpson

Director, Env. Health & Safety

Larry Parsons

Director, Housing & Residential Services

Wilfred Brown

Chief of Police

Bill Bean (Acting)

Director, Accounting Services & Controls

Jim Corkill (Acting)

Director, University Center/Events Center

Alan Kirby

Director, Audit Services

Wanda Lynn Riley

Director, Business Services

TBN

Director, UCSB Bookstore

TBN

Director, Human Resources

Cynthia Cronk

Director, Information Systems & Computing

Arlene Allen (Acting)



Campus Structure

Acting Vice Chancellor for Administrative Services Donna Carpenter

Assoc. Vice Chancellor, Campus Design & Facilities
Marc Fisher

Asst. Vice Chancellor, Physical Facilities,
Parking & Transportation
David Gonzales

Landscape, Environmental & Custodial Services
Jon Cook, Assoc. Director

Building and Utility Maintenance & Commissioning
George Lewis, Assoc. Director

Facilities Projects Group
Paul Gawronik, Assoc. Director

Transportation & Parking Services
Tom Roberts, Director

Design & Construction Services
Jack Wolever, Director

Physical Planning & Design
Tye Simpson, Director

Financial & Admin. Services
Alan Williams, Director

Contracting Services
Anna Galanis, Director

Wilfred Brown, Executive Director

Coordinator, Resource Planning
Chuck Haines

Special Projects Coordinator
Delilah Poupore

H&RS Residential Operations
Director

Jackie Treadway

Asst Director, Custodial & Landscape Services
Tom Beland

Coordinator Operational Services
Jacque Hilliard

Manager, Residence Hall Services
Terry Campbell

Grounds Superintendent
Ric Williams

Maintenance Supervisor (Francisco Torres)
John Fowler

Assistant Director, Project Management
Dan Heedy

Maintenance Supervisor (Apartments)
Mark Coony

Maintenance Supervisor (Res Halls)
Jeff Monteleone

Manager, Env & Energy Programs
Mark Rousseau



Campus Planning Committee

Subcommittee on Sustainability

Marc Fisher, Associate Vice Chancellor, Campus Design & Facilities -Chair

Roland Geyer-Faculty, Bren School

Aaron Gilliam-Undergraduate Student

David Gonzales, Assistant Vice Chancellor, Physical Facilities

Chuck Haines, Coordinator, Resource Planning, Housing & Res Services

Shari Hammond-Budget & Planning

Mo Lovegreen-Ex. Officer, Geography

Sarvy Mahdavi-Graduate Student, Bren

Soumil Mehta-Undergraduate Student

Perrin Pellegrin-Campus Sustainability Manager, Design & Const. Services

Jim Richmond-Faculty, Ecology, Evolution and Marine Biology

Bruce Tiffany-Faculty, Geology

Kim T Yasuda –Faculty, Art & Architecture

Ex-Officio

Martie Levy, Director Capital Development, Budget & Planning



Resource Conservation

- Energy Management team looks for lowest hanging fruit
- Lighting retrofits: re-lamping and de-lamping
- Night set backs, boilers turned off during summer months
- Retrofit old eddie current drives to variable frequency drives
- Conversion of CV to VAV





Resource Conservation

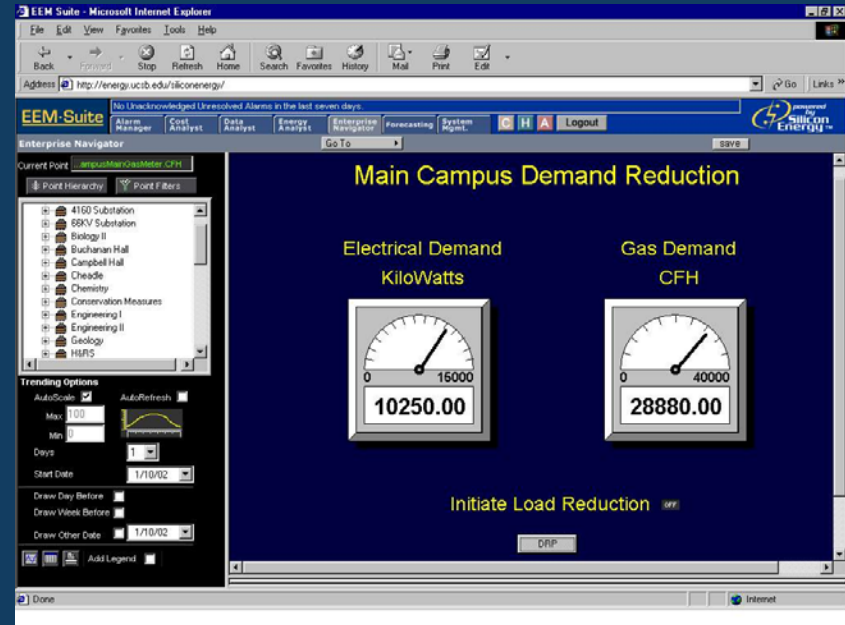
- Virtual chilled central plant
- Microturbines distributed cogeneration
- New campus exterior light fixtures reduces light pollution
- New campus electrical infrastructure





Resource Conservation

- Extensive metering and building controls
- Funding for these projects comes from grants and rebates through local utility





Resource Conservation

Housing & Residential Services

Energy:

- Lighting upgrades and sensors
- Installed energy management system
- Solar hot water on 5 residence Halls, 1 apartment complex
- 5kW system on Carrillo dinning hall
- 1 pool heated by solar hot water
- Purchase all energy star appliances
- Replaced boiler burners to low Nox
- Change out washing machines to front loader, major water savings



Resource Conservation

- **Water conservation: retrofit plumbing fixtures to low flow**
- **Established landscape does not receive irrigation**
- **90% of campus is irrigated with reclaimed water**





Resource Conservation

- **Meter all water that comes in and out of UCSB**
- **Backflow prevention for all water to protect water supply from contamination**
- **Piloted reclaimed water in toilets on first floor of Bren Hall**
- **Waterless urinals installed in all new construction**





Resource Conservation

Housing & Residential Services:

- Water conservation:new dish machines called Savajor- recycle the dish water
- Installing reclaimed water at dorm lawn, first phase this summer, second phase summer of '06
- Dual flush toilets and low flow fixtures



Landscape

Housing & Residential Services:

- Bioswales for stormwater management
- Native plants grown from local genotypes
- Reduction of nutrient run-off
- Create natural habitat
- Biology dept. is working on models to prove the efficiency of bioswales





Landscape

Grounds Department Practices:

- Hosted a green gardening training class
- Does not use any pesticides and has developed a green site maintenance plan
- Chooses xerophytic plants
- Uses IPM tactics
- Mulches green waste and uses it in landscaping around campus





Landscape

Museum of Systematics and Ecology

- UCSB has native plants on the north side of campus by the slough/airport, on the east side by the processing plant, south and east sides of Manzanita Village and lagoon area
- Restoration project was completed for the lagoon sand dunes
- Native plant restoration guide for campus was completed by the Museum
- Museum also restores wetlands/vernal pools etc on campus, thus improving water quality



Transportation

- Campus has 2 bus stops, a third is coming on the east side of campus
- Extensive bike paths run throughout campus, into Goleta and Santa Barbara
- Ample bike parking is found around campus
- Campus has installed new bike lockers on campus





Transportation

- Campus owns 50 NEVs to travel around campus
- Campus fleet is mostly internal combustion, however UCSB does own 5 hybrids
- Housing dept. has slow fill CNG fueling stations, and most of their vehicles run off CNG





Transportation

Transportation

- Transportation Alternative Program (TAP)

	Staff/Faculty	Students
Bus	4%	6%
Bicycle	9%	49%
Vanpool	3%	0%
Carpool	11%	3%
Walking	0%	20%



Education & Outreach

- **Education for Sustainable Living (ESLP)**
- **Student run and organized curriculum: lecture series and group studies projects**
- **ESLP is offered on 5 UC campuses and growing to CC and CSU**
- **Students, faculty, and staff use the campus operations as a “learning laboratory”**





Education & Outreach



- ESLP works with other campus organizations including:
 - Environmental Affairs Board (EAB)
 - California Student Sustainability Coalition (CSSC)
 - Surfrider Foundation
 - Shoreline Preservation Foundation (SPF)
 - Engineers Without Borders
 - and many others.....



Education & Outreach



- **Students carry education beyond the classroom because they are incorporating tangible change with their research**
- **Public presentation and a report to the appropriate campus affiliates on findings - to increase awareness and propose implementation of results**
- **Create a working relationship between students, staff, and faculty towards the greater goal of making UCSB a truly sustainable campus!**



Education & Outreach

Green Campus Grant:

- The mission of the Green Campus program is to save energy at UCSB with student-led, energy conservation programs
- Save energy at UC Santa Barbara with a student-led campaign to identify and reduce waste through improvements in energy use behaviors, student purchasing decisions, and operational changes;
- Build student awareness about the need to use energy efficiently and understand the relationship between energy efficiency and the environment; and
- Strengthen academic learning by bringing students and faculty together on Green Campus initiatives



Built Environment – New Construction

- Spring 2002, first green building on campus, Bren Hall
- Academic year 2002/03 students across the UC systems pushed for a clean energy and green building policy





Built Environment – New Construction

- Spring 2003 UCOP came out with a green building policy, LEED certified “equivalent”
- UCSB raises the bar on the UCOP policy, to LEED silver for buildings programmed after July 1, 2004





Built Environment – New Construction

•Current LEED NC status on buildings to date:

ESSB- LEED Silver*

OSEB- LEED Gold*

MSRB-LEED certified

SRB-LEED registered

**San Clemente-LEED
silver**





Built Environment – New Construction

- USGBC signed off on our in-house commissioning plan
- Currently piloting in-house commissioning on first building





Built Environment – New Construction

Developing LEED campus-wide credits, or Multiple Building for:

- Sustainable Sites credit 1- Site Selection
- Sustainable Sites credits 4.1 and 4.2- Alternative Transportation, Public Transportation Access and Bicycle Storage and Changing rooms
- Energy and Atmosphere prereq. 1- Fundamental Commissioning
- Energy and Atmosphere prereq. 2- CFC HVAC reduction





Built Environment – New Construction

Developing LEED campus-wide credits, or Multiple Building for:

- Energy and Atmosphere credit 4- Ozone protection
- Indoor Environmental Quality, prereq.2- Environmental Tobacco Smoke Control
- Innovation- Green Building Outreach, Green Procurement, Sustainable Curriculum, Green Site Maintenance





Built Environment – Existing Buildings

- Piloting LEED for Existing Building (LEED EB)
- Expecting LEED EB certification in late summer
- If the program is successful we plan to use LEED EB as a benchmark for other existing buildings on campus





Operations & Maintenance-Custodial

- Green Seal cleaning reagents
- Paper towels made from recycled content and chlorine free
- Next steps- floor strippers and cleaning machinery
- Play a role in the energy management plan





Recycling

- Campus has 72 recycling bins around campus
- Waste audits are performed quarterly
- Inter-departmental recycling is volunteer
- UCSB diverts ~45% of waste from the landfill
- Divert up to 98% of construction waste
- More information:
<http://facilities.ucsb.edu/projects/recycling/>





Recycling

Housing & Residential Services:

Recycling:

- Recycle all construction waste
- Recycling in every dorm and dining hall
- Extensive recycling plan
- Train and collect hazardous waste
- Dinning Commons compost vegetable prep waste on campus and then use compost in landscaping

Contest:

- Have contest for energy conservation, recycling,
- Guest speakers on sustainability
- Contest for staff and students, receive green awards
- Also provide outreach to people on sustainability



Procurement

Goal of green procurement: significant savings, reduced ecological footprint, environmental stewardship and leadership-recognition for that role

Housing is negotiating contract with local sustainable farms for the purchase of fruits and vegetables

- **Currently an ESLP student project is:**
 - **Evaluating campus and system-wide procurement**
 - **Tracking green procurement on a departmental level, educating department purchasing managers, evolving ecological criteria**
 - **ESLP and Green Campus grant have been Students goal is to demonstrate green procurement can provide significant operational savings**



Procurement

Challenge to get buy-in from purchasing managers around the campus as well as administrative and academic authorities

- **Future Plans:**
- **Negotiating contracts at the systemwide level**
- **Educating departments on purchasing green products**
- **Students coordination of statewide effort to incorporate environmentally preferred purchasing (EPP) into Strategic Sourcing Initiatives**



Research

Currently the campus does not capture information on environmental/sustainable research

Some Current projects:

Land Cover Conversion and Forest Degradation in Amazonia: Evaluating Environmental and Land Use Controls on Pasture Sustainability, Forest Integrity and Forest Succession – Chadwick

Campus Climate Neutral Project – Bren MESM Students

ESLP Undergraduate Projects



Sustainability on Campus:

For more information:

<http://sustainability.ucsb.edu>

Today's PowerPoint will be posted on the website above

