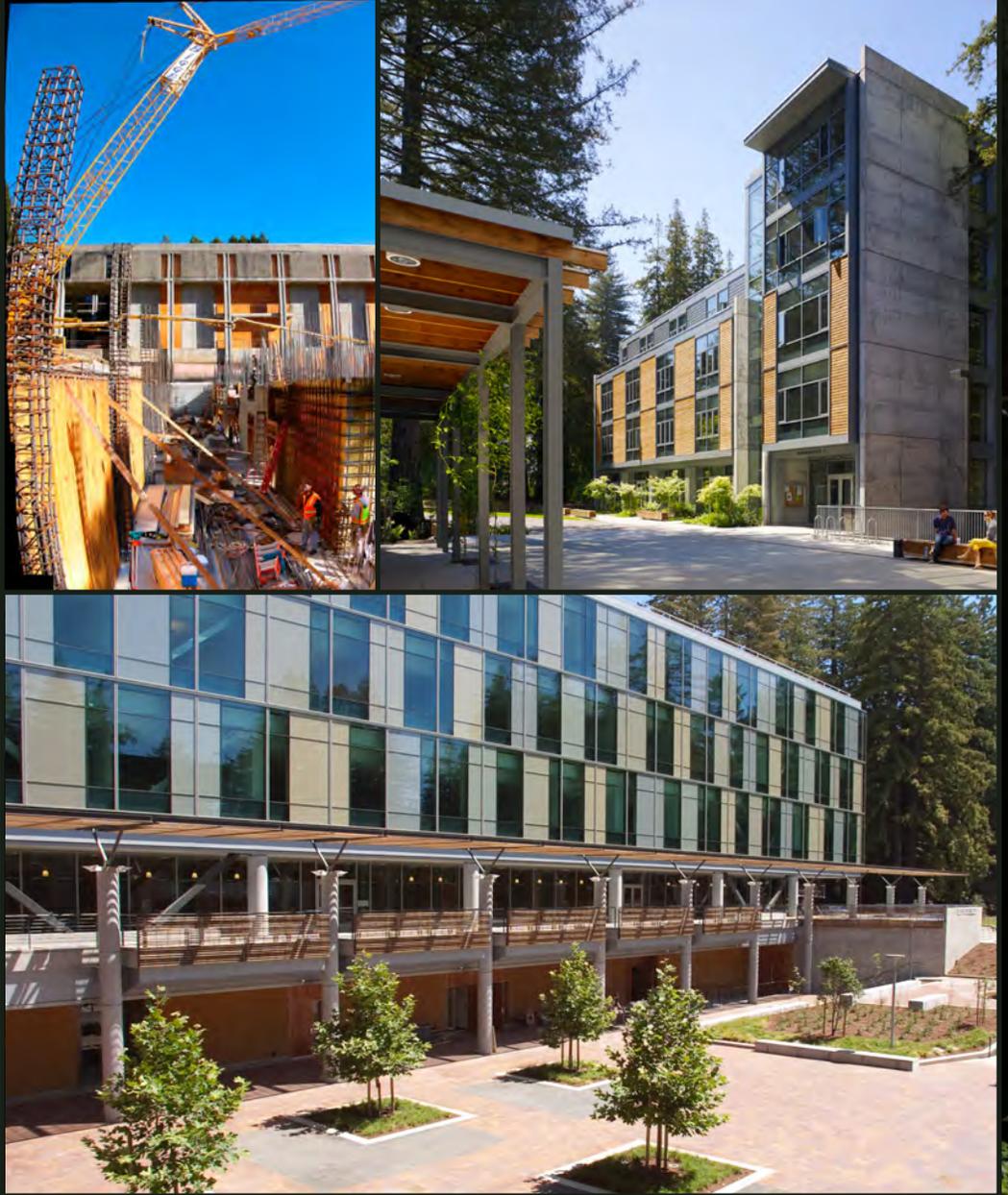


University of California, Santa Cruz
Physical Design Framework



March 2010

On the cover:

McHenry Library Addition, BOORA Architects, Portland, Devcon Construction, August 2006 (*upper left*)

Humanities and Social Sciences Facility, THA Architecture Inc., Portland, 2006 (*upper right*)

Engineering Building 2, CO Architects, Los Angeles, 2004 (*bottom*)

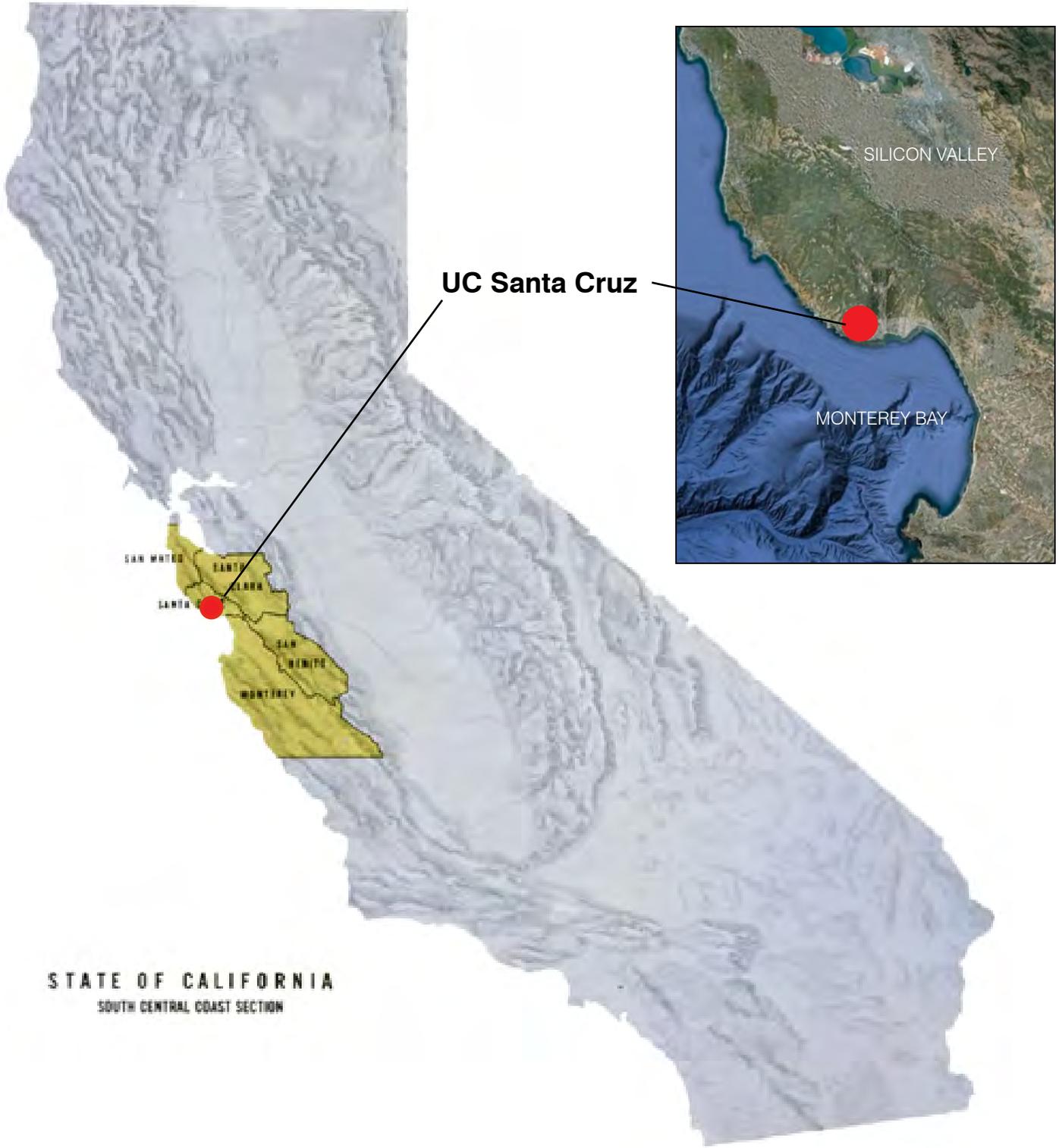
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1. Overview

- a. The Santa Cruz Campus
- b. The *Physical Design Framework* and UCSC's Planning Approach
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Map from *University of California*
South Central Coast Campus Site Selection Study, 1959

a. The Santa Cruz Campus

The 2,030 acres of the University of California, Santa Cruz, are home to a university campus unlike any other. Beginning with the selection of the Cowell Ranch site as the home of a new University of California campus in March 1961, the major challenge of UCSC's continuing planning enterprise has been to balance the requirements of a dynamic public research university with the preservation of its redwood forests, sweeping meadows, deep ravines, and expansive views of Monterey Bay.

Recognizing the extraordinary character of this piece of land, The Regents and UCSC's founders pledged to respect it, and to preserve it "as much as possible."¹ Their *1963 Long Range Development Plan* established a planning framework that created the remarkable UC Santa Cruz campus and has guided its physical development ever since. Written to support an innovative academic program, UCSC's founding document succinctly stated its goal:

"The primary concern of the Long Range Development Plan for the Santa Cruz campus is the arrangement on a remarkable campus site of the activities and facilities that grow out of the educational program described in the Academic Plan. The academic proposals must be related to the site in such a way that they can be accomplished as completely and as satisfactorily as possible; at the same time the site itself must be utilized so sympathetically that its natural aesthetic qualities are preserved, and remain to assist and enhance the development of the academic goals."
1963 Long Range Development Plan

It is the purpose of the Long Range Development Plan to translate the Academic Plan into terms of physical reality, and establish guidelines for the continuing development of the Santa Cruz campus. It is recognized that the plan must be flexible, so that possible changes in educational concept and other presently unforeseeable factors can be accommodated if need be. At the same time, it is believed that the campus must from its start make a bold statement, both in an academic and an architectural sense.

Four subsequent revisions to UCSC's Long Range Development Plan (LRDP),² the most recent approved by The Regents in September 2006, a Coastal Long Range Development Plan (CLRDP) for UCSC's nearby Marine Science Campus,³ dozens of detailed environmental investigations and campus planning studies, and the design and construction of nearly five million gross square feet of buildings, have consistently moved the campus towards that ambitious goal. Spanning nearly 50 years and several generations of faculty and students, they have resulted in:

"Since both college and academic core buildings are being built one-by-one, initial experience will indicate which patterns and locations function best to serve the learning process. This Long Range Development Plan is "a guide to future development." We have tried to plan ahead with as much precision as possible, but the future is dimly seen at best, and changes undoubtedly will be made from time to time. We think the plan has elements of flexibility that will make it possible to adapt to changed conditions and to further refinement of program as better methods of imparting instruction are discovered."

- an academic program and an organizational structure that fosters distinguished and innovative interdisciplinary teaching and research;
- ten distinct residential college communities, each with its own character and traditions, arrayed around a core of major academic buildings;
- a campus known for its respect and appreciation of a natural environment filled with remarkable spaces for learning, contemplation, and social interaction;
- a campus where the surrounding natural environment has been more important than individual buildings in creating a campus identity;

Dean McHenry's October 23, 1963, letter transmitting UCSC's initial Long Range Development Plan to University President Clark Kerr

1. "The site will constantly be respected, and preserved as it is as much as possible." *1963 Long Range Development Plan*, page 12.
2. The *2005 LRDP* is discussed at length in Chapter 2 of the *Physical Design Framework* beginning on page 9, and summaries of the 1963, 1971, 1978, and 1988 LRDPs can be found in *Appendix F: Bibliography of Past Planning Studies*, beginning on page 96.
3. A separate long-range development plan which satisfies the requirements of the California Coastal Commission was prepared for the Marine Science Campus, since the Marine Science Campus is located in the Coastal Zone.

- ancillary facilities that extend the influence of the main campus, further University-wide programs, and capitalize on regional resources and opportunities, including the Marine Science Campus, the Monterey Bay Education, Science, and Technology Center (UC MBEST), the Silicon Valley Center, and the University of California Observatories (UCO) and its Lick Observatory on Mount Hamilton.

As a maturing campus, UCSC now faces a set of interlinked challenges. To create a welcoming environment for an increasingly diverse student population, it must add facilities in response to rapidly evolving research needs at the same time that it renews an aging infrastructure. New buildings must be in harmony with the natural environment and with several generations of earlier buildings; they must also create a variety of attractive public spaces. This must all be accomplished within the financial constraints of a public university, in an environment of increasingly stringent regulations, and with an evolving awareness of the need to minimize the institution's carbon footprint. This document, the *UC Santa Cruz Physical Design Framework*, has been prepared, along with its companion document, the *UC Santa Cruz 2009-19 Capital Financial Plan*, in anticipation of those tasks.

b. The Physical Design Framework and UCSC's Planning Approach

The importance of the *1963 Long Range Development Plan* in shaping the fabric and creating the character of the UC Santa Cruz campus has already been noted. Indeed, all planning and architectural design during the intervening years have their roots in that document's commitment to marrying the campus's academic aspirations with a profound respect for the variety and splendor of its site.¹ As a consequence, physical planning at UCSC begins by studying the interwoven elements of the campus's natural fabric and moves toward principles and strategies that guide development of the facilities required by its academic mission. UCSC's planning enterprise is ongoing, continually working to understand how to build a complex campus community within the surrounding natural systems, respecting them during all stages of design, construction, and daily campus operations. Each planning effort builds on those that preceded it, and each project moves the campus toward increased comprehension, and appreciation, of its surroundings.²

Using the Physical Design Framework

Along with the *UC Santa Cruz 2009-19 Capital Financial Plan*, the *UC Santa Cruz Physical Design Framework* has been prepared as part of the "pilot phase" of the process redesign for approving capital improvement projects, approved by The Regents in March 2008. A companion document to both UCSC's *Long-Range Development Plan 2005–2020 (2005 LRDP)*, which was approved by The Regents in 2006, and the *UC Santa Cruz Marine Science Campus Coastal Long Range Development Plan (CLRDP)*, approved by The Regents in September 2004 and certified by the California Coastal Commission in January 2009, it chronicles the consistent vision of UC Santa Cruz as a vibrant institution in wonderfully complex and dynamic environmental settings and articulates the values that

1. The architectural and landscape architectural guidelines from the 1963 LRDP remain remarkably fresh. They are printed in their entirety in *Appendix D: 1963 LRDP Founding Guidelines*.
2. *Appendix F: Bibliography of Past Planning Studies and Guidelines* lists the most important of those studies. More detailed information about current planning, design, and construction activities can be found at UCSC's Office of Physical Planning and Construction website: ppc.ucsc.edu.

guide development at UC Santa Cruz. It looks simultaneously to the past and to the future: excerpts from both the 1963 and 2005 LRDPs and other foundational documents in the *Framework's* margins emphasize the continuity of UCSC's consistent approach to planning and campus development. More evocative than prescriptive, the *Physical Design Framework* encourages an approach of "structured improvisation" that allows the campus to make the most of all opportunities, anticipated or not.

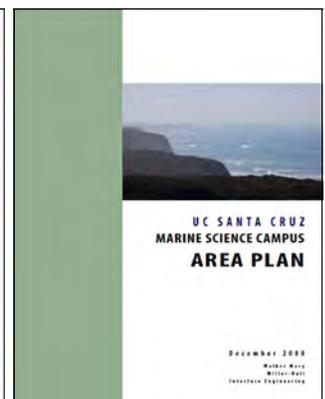
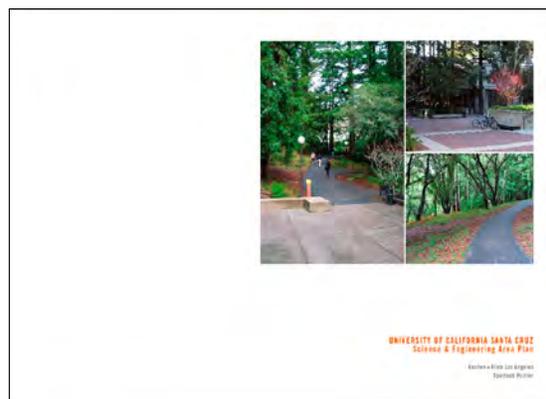
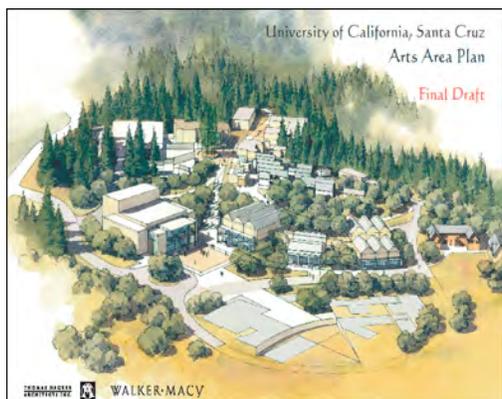
Using five simple ideas—the "**Unifying Concepts**" presented in Chapter 3—the *Physical Design Framework* has been structured to convey an easily understood, yet comprehensive, vision of campus lands, and to propose a series of design guidelines intended to ensure that future area planning studies, building siting decisions, and building and infrastructure designs remain true to that vision.

The 2005 LRDP, the Marine Science Campus CLRDP, and the *Physical Design Framework* are all intended to serve the core mission of the campus and to preserve its core values, while providing the flexibility required by an active, multi-faceted institution. None of these documents constitute a mandate for growth, nor are they intended to set forth detailed implementation plans for development. They do not commit the campus to carrying out development on any given timeline. Each specific capital project proposal will be analyzed individually for consistency with the *Physical Design Framework*, the 2005 LRDP or the Marine Science Campus CLRDP, and will be subject to review under the California Environmental Quality Act (CEQA).

Planning and Managing UCSC's Special Landscapes

The physical character of the Santa Cruz campuses—the main campus with rugged topography and complex natural systems and the Marine Science Campus immediately adjacent to the rocky Pacific coast—creates powerful settings for university life. Moreover, few college campuses present as many unique teaching and research opportunities, so close at hand, as these do. This *Physical Design Framework* has been written from a perspective mindful of the many demands presented by these singular landscapes. As a result, it reflects UCSC's approach to planning, design, and land management, which begins by developing a deep and detailed understanding of campus areas and project sites. Building on the foundation of the current LRDPs and their supporting environmental analyses, the campus prepares focused planning studies that examine in an appropriate level of

Area plans, several of which are illustrated below, examine regions of the campus in greater detail than an LRDP or physical framework can, and establish planning criteria and design guidelines for the projects that will follow.





Campus planning and design at UCSC involves frequent visits to project sites to develop a detailed understanding of their complexity, their opportunities, and their constraints, and to generate and consider a number of planning and design alternatives.



detail a specific set of problems. Some studies may focus on a single issue with implications for the entire campus—a campuswide bicycle plan or infrastructure analysis, for example. Others investigate a specific region of the campus—a “capacity study” that considers the amount of building appropriate for a certain area, or an area plan that develops specific recommendations for building sites and design guidelines.¹

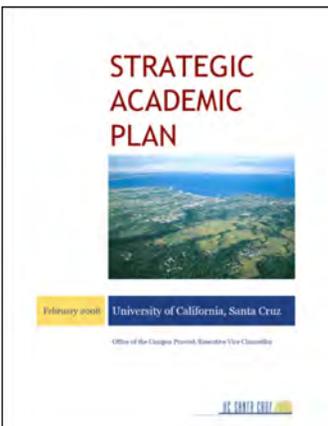
In all of these cases, the planning work includes close collaboration among campus clients, knowledgeable campus staff and skilled consultants. The results can inform both project design decisions and long-term management practices. Campus experience has taught that there is no substitute for frequent visits to project sites and close study of the unique characteristics of each, including their slope, terrain, vegetation, microclimate, solar exposure, and current use patterns.

The participation of the campus’s principal officers—deans, vice chancellors, vice provosts, and University Librarian—in monthly meetings of the Advisory Committee for Campus Planning and Stewardship ensures that capital planning and project development decisions are coordinated with UCSC’s Strategic Academic Plan (below).

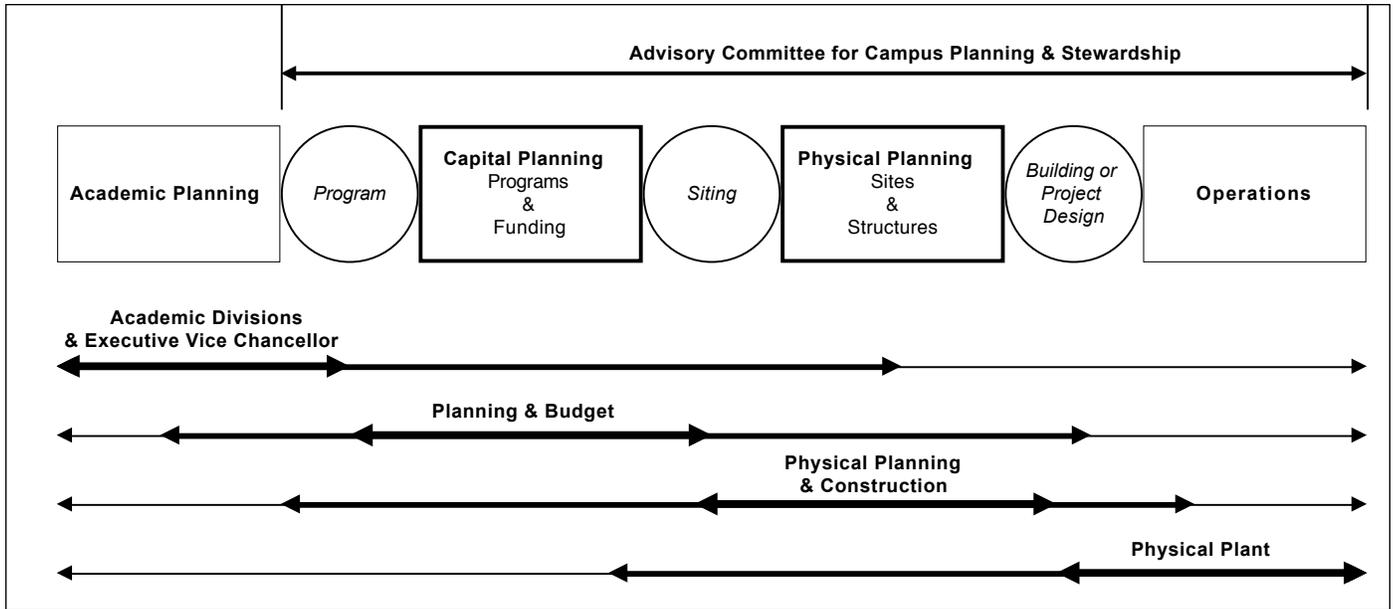
Campus Process

All campus projects follow integrated and collaborative processes of project planning and management, ensuring timely and cost-effective outcomes based on sound and thorough business case analyses. An informal **Planning Work Group**—including the Vice Chancellors for Business and Administrative Services, Planning and Budget, and Student Affairs, as well as the Director of Capital Planning and Space Management, the Campus Architect, the Director of Campus Planning, and other senior staff—meets weekly to share information and coordinate project development, assuring that their respective units are appropriately involved at each phase.

The **Advisory Committee for Campus Planning and Stewardship (CPS)** ensures that capital planning and development activities align with UCSC’s academic goals and institutional priorities. Consisting of all campus principal officers (Deans, Vice Chancellors, University Librarian, and Vice Provosts), the Campus Architect, the Director of Capital Planning and Space Management, a representative of the Academic Senate, and student representatives, the CPS meets monthly to review, advise, and make recommendations to the Chancellor and Campus Provost/Executive Vice Chancellor



1. The same approach—focused planning studies prepared at an appropriate level of detail—guides the campus’s planning work at its other properties, discussed in more detail in chapter 5.



The diagram above illustrates the role of the Advisory Committee for Campus Planning and Stewardship in ensuring that the efforts of campus units involved in campus planning and development are well integrated.

on UCSC's capital improvement program, physical planning studies developed in support of the 2005 LRDP, and each major capital improvement project. The committee oversees the full spectrum of project development activities, from programming and budgeting (where the Office of Planning and Budget holds primary responsibility), through building siting, design and construction (where Physical Planning and Construction takes the lead), and into operations (which is the responsibility of Physical Plant). This committee also ensures that UCSC's sustainability goals are met.

For each major planning or building project a **programming and building committee**, chaired by a campus principal officer and involving faculty, staff, and student stakeholders in the project's development, works with campus project managers and consulting design professionals to establish project priorities and to develop detailed program requirements, sustainability goals, and budget and schedule expectations. Once the design phases of a capital project are underway, the committee and campus staff use the resulting program document to guide the work of the project's consultant team and as a yardstick by which an evolving design is measured. Programming and building committees also participate in the campus's aggressive value engineering efforts and sustainability initiatives, evaluating design alternatives so as to make the thoughtful trade-offs necessary to provide an economical, functional, and durable facility that will serve the campus well for many years.

The **Chancellor's Design Advisory Board**, comprising three outside design professionals and established to satisfy The Regents' policy requirement for independent design review, meets regularly to review projects and make recommendations about their design, assisting the campus in the achievement of planning coherence and high design standards. Convened by the Campus Architect, the Board's involvement begins prior to the initiation of design work, when the Board typically meets on site with executive design professionals and involved campus staff to define

design goals necessary to satisfy the project program, the *2005 LRDP*, and the planning and design guidelines of this *Physical Design Framework*. Continuing dialogue with the Board at several stages of project development ensures that both building designs and campus planning studies are presented in a broad context, with due consideration given to issues of landscape design, circulation, and the environment, and that they meet the requirements of the *2005 LRDP* or the *CLRDP*, the *Framework*, and relevant planning studies. The Board also identifies and articulates to the campus community planning and design issues critical to ongoing campus development.

Links to
Selected Studies and Plans
Strategic Academic Plan, 2008

c. Sustainability

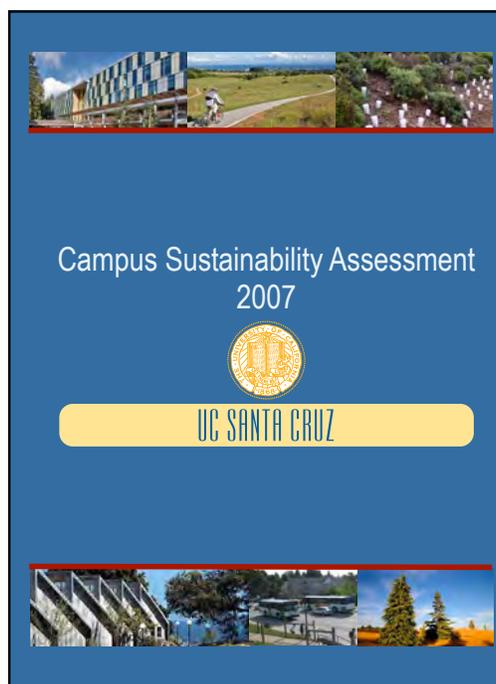
"UC Santa Cruz strives to integrate sustainability into every aspect of research, teaching, and public service.

"Sustainability is our way of thinking about everything we do in planning, building design and construction, renovation, purchasing, landscape, energy, water, waste, product consumption, emissions, transportation, etc.

Sustainable practices support ecological, human, and economic health and viability. Sustainability means meeting present needs without compromising ecosystems or the prospects of future generations to meet their own needs. Through its historic commitment to the environment, UCSC will be a steward of our community and a leader in advancing global sustainability."

UCSC Sustainability Vision Statement

Reflective of its founding commitment to environmental sensitivity, UCSC has a decades-long history of pursuing sustainable practices in campus-wide operations. These include a long series of energy saving upgrades of buildings' mechanical and lighting systems; a high proportion of commuters using alternative transportation, vanpooling, carpooling and bikes; prohibition of air conditioning (except for special circumstances); low water use; and sustainable food and dining programs. In addition, the campus uses the results of life cycle cost analysis, including the cost of known future expenditures, to guide the design of new buildings. This campus tradition is reflected in the *2005 LRDP*, which includes three sustainability principles: to promote sustainable practices in campus development, to promote sustainable practices in campus operations, and to encourage broad-based sustainability initiatives.



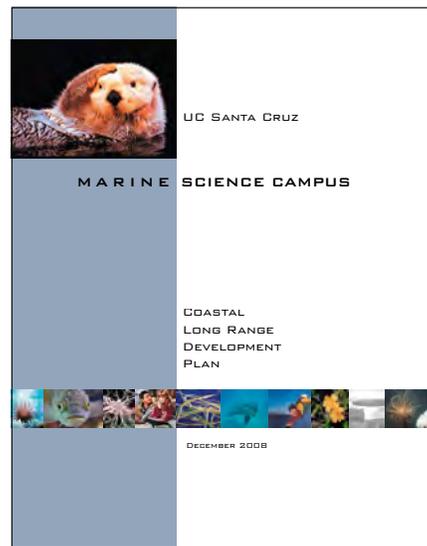
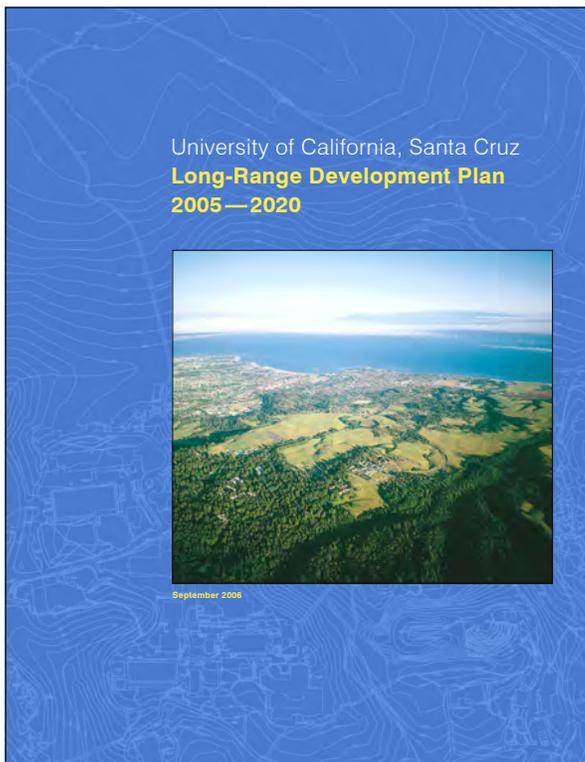
Building upon the *2005 LRDP* principles and a campuswide *Sustainability Assessment* completed in 2007, the campus began work on a comprehensive sustainability plan in 2009. The plan will assess progress made to date and identify medium- and long-range targets for each area of sustainability including: waste and recycling, food systems, construction and operation of green facilities, purchasing, transportation, water use, and land management and use. When complete the sustainability plan, in compliance with Regents' Policies and other commitments, will help the campus coordinate all sustainability efforts and track progress each year towards short, medium and long-range targets. In addition to the Sustainability Plan the campus has prepared a Climate Action Plan which identified ways to reduce campus carbon emissions.

Links to
Selected Studies and Plans
2009 UCSC Blueprint for a Sustainable Campus
Campus Sustainability Assessment. 2007 (Updated 2008)
UCSC Climate Action Plan. 2010

As the field of sustainability is rapidly evolving, see sustainability.ucsc.edu for information on UCSC's most recent efforts and accomplishments.

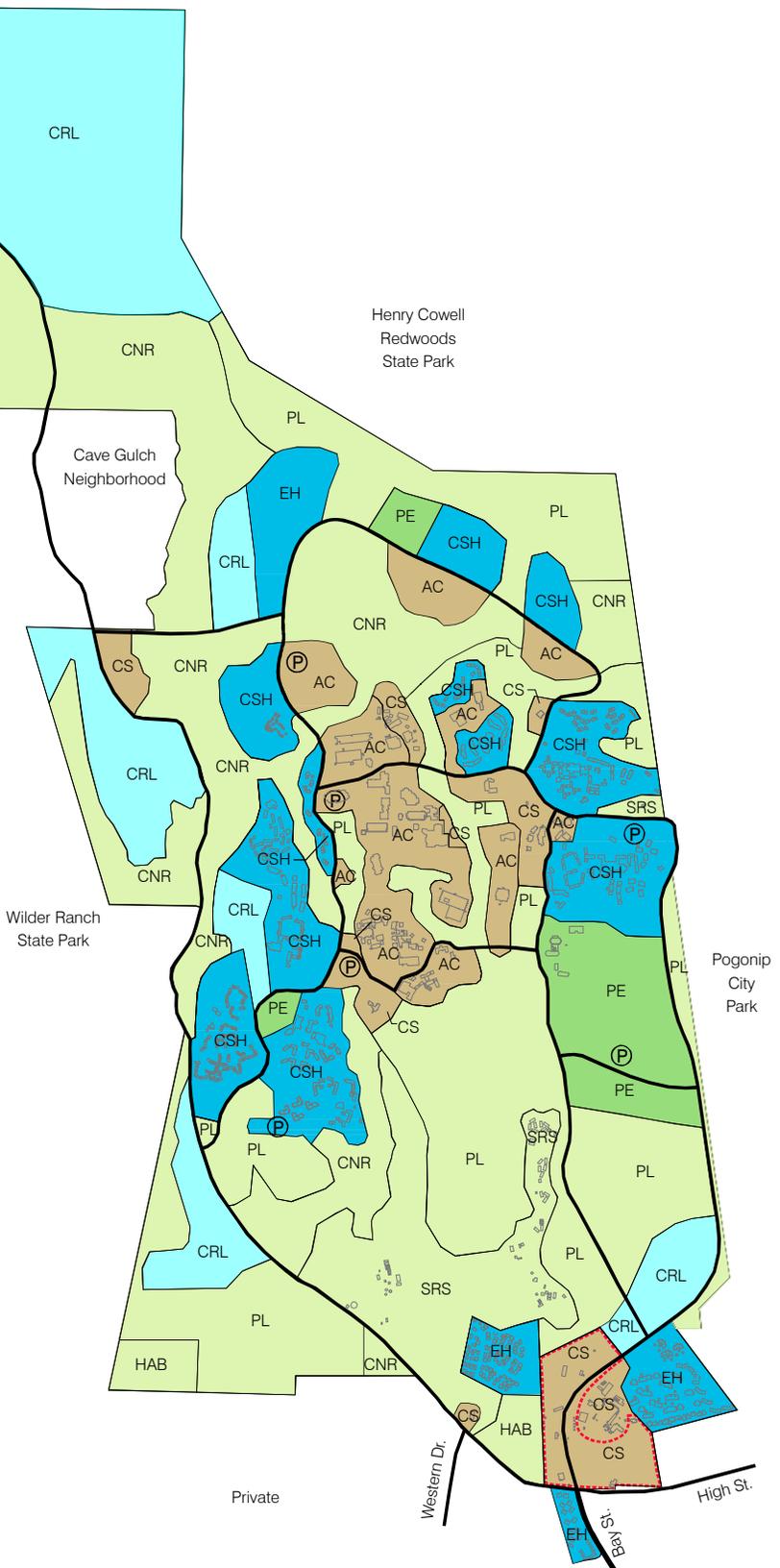
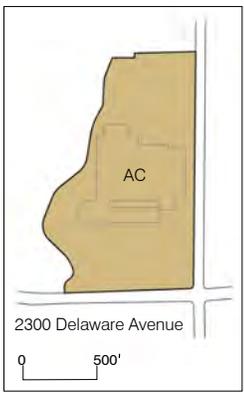
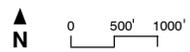
2. Long Range Development Plans

- a. Main Campus: *Long-Range Development Plan 2005–2020*
- b. The 2005 *LRDP* and the Santa Cruz Community
- c. *Marine Science Campus Coastal Long Range Development Plan*



LEGEND

- AC Academic Core
- CS Campus Support
- CSH Colleges and Student Housing
- EH Employee Housing
- PE Physical Education and Recreation
- PL Protected Landscape
- CNR Campus Natural Reserve
- SRS Site Research and Support
- HAB Campus Habitat Reserve
- CRL Campus Resource Land
- P Parking Facilities
- Cowell Ranch Historic District



**UNIVERSITY OF CALIFORNIA, SANTA CRUZ
LONG-RANGE DEVELOPMENT PLAN 2005-2020
SEPTEMBER 2006**

LAND-USE MAP

**a. Main Campus:
Long-Range Development
Plan 2005–2020**

Development of the main UC Santa Cruz campus, including the University's land and facilities at 2300 Delaware Avenue¹, is guided by the *University of California, Santa Cruz, Long-Range Development Plan 2005 – 2020*, or *2005 LRDP*. The outcome of a multi-year public planning process, it was approved by The Regents in September 2006, along with its accompanying Environmental Impact Report (*2005 LRDP EIR*).²

The *2005 LRDP's* objectives, included as *Appendix A* on page 83 of this *Framework*, reinforce UCSC's commitment to provide the facilities and infrastructure needed to accommodate anticipated enrollment growth; support a broad range of academic programs; expand the campus contribution to regional cultural life and economic well-being; encourage interdisciplinary collaboration; and serve an increasingly diverse population. A complementary set of physical planning principles and guidelines—organized under the categories of Sustainability, Land-Use Patterns, Natural and Cultural Resources, Access and Transportation, Campus Life, and the Santa Cruz Community—were adopted with the *2005 LRDP*; they are included as *Appendix B* on page 84. They are the foundation of this *Framework* and will guide all future planning efforts.



1. See discussion of 2300 Delaware Avenue in Chapter 5 on page 71.
2. Copies of the *2005 LRDP* and the *2005 LRDP EIR*, along with detailed information about the planning process that led to their development, are available at lrpd.ucsc.edu.

The *2005 LRDP* is intended to permit physical development of the UC Santa Cruz campus necessary to accommodate a three-quarter-average on-campus enrollment of 19,500 full-time equivalent (FTE) students by 2020. It would allow construction of up to 3,175,000 gross square feet of additional building space needed to accommodate UCSC's academic, research, and public service mission. Its land use plan and development strategy continue directions established by previous LRDPs, most notably by the *1988 LRDP*. In particular,

- UCSC's original configuration of a central academic core surrounded by residential colleges is reaffirmed;
- the campus's southern meadows will be protected from development;
- infill and densification of developed areas will continue;
- north campus development will include a loop road and a new north campus entrance from Empire Grade.

Sustainability and environmental stewardship are the *2005 LRDP's* guiding principles; they helped shape its land use plan. To maintain essential wildlife habitat and movement corridors, to preserve hydrological balance, and to protect programs on the Campus Natural Reserve, the plan retains contiguous areas of unbuilt natural areas in both the developed campus and in areas to the north proposed for future development. The plan's circulation network was designed to support UCSC's commitment to transportation alternatives to the single occupant vehicle, including increased use of shuttles, car pools, and public transportation and improved pedestrian access.

Anticipating the need for more detailed planning studies, the *2005 LRDP* "encourages careful design consideration with the natural landscape context and character of each site."¹ This is in keeping with past campus practice, under which a series of area plans, infrastructure plans, and similar studies have been prepared in order to establish building and infrastructure locations and guide similar siting decisions with more specificity than is possible in an LRDP.² The intention of the *2005 LRDP*, this *Physical Design Framework*, and these supporting studies is a well-integrated, functional, and beautiful campus.

Links to
Selected Studies and Plans

[2005 Long Range Development Plan](#)

[2005 Long Range Development Plan
Final Environmental Impact Report](#)

[Comprehensive Settlement Agreement,
August 2008](#)

As required by the California Environmental Quality Act (CEQA), Regental approval of the *2005 LRDP* included adoption of an extensive set of mitigation measures and a mitigation monitoring and reporting program from the *2005 LRDP EIR*.

1. *2005 LRDP*, p. 75.

2. The most important of these are briefly described in Appendix F on page 96.

b. The 2005 LRDP and the Santa Cruz Community

The UC Santa Cruz campus is located in Santa Cruz County and is surrounded on three sides by the lands of two California State Parks and Pogonip, a city park. As a result, unlike many college campuses, UC Santa Cruz is isolated from the developed city, except along its southern boundary. Approximately 53% of the campus land, including nearly all developed portions of the campus, is within the Santa Cruz city limits; the remainder lies in the unincorporated area of the County. The physical separation of the campus from nearby urban infrastructure poses challenges to developing the utility and transportation systems necessary to serve the campus. In addition to the physical attributes of the campus location, the relationship of the UC Santa Cruz population to the population of the community is disproportionately large. The population of the City of Santa Cruz is 56,300¹ while the campus population is currently about 19,700, including students, faculty, and staff.

Although the local community invited The Regents to choose Santa Cruz as the site for a new University of California campus in the early 1960s, over the years UCSC's growth became a source of town-gown tension. The City and County frequently asserted that the impacts of a growing institution disproportionately and adversely affected a relatively small community. Tensions escalated during the development and approval of the 2005 LRDP.

The planning process for the LRDP began in 2003 with multiple public planning sessions and topic-based sub-committees, including a Campus and Community Work Group that included local elected officials and community members. In 2006, after The Regents approved an alternative to the original draft LRDP that reduced the proposed 3-quarter average enrollment target from 21,000 to 19,500 on-campus FTE, the City, County and citizens' groups filed a series of lawsuits challenging the validity of the Environmental Impact Report. The local Superior Court found the EIR deficient in its analysis of potential housing, water and traffic impacts on the local community. Starting at the end of 2007 and for next 10 months, the campus, the City, the County and several citizens' groups engaged in formal mediation, in hopes of negotiating a settlement that would avoid further litigation and conflict over the 2005 LRDP. This process led to a landmark Comprehensive Settlement Agreement² among all parties that The Regents approved in July 2008.

The importance of a productive working relationship between town and gown was noted in the 1963 LRDP, which said "Ongoing communication and collaborative planning will enable UCSC and the surrounding communities to anticipate and address particular challenges and work together toward common goals." The Comprehensive Settlement Agreement has the potential to initiate a much desired and long awaited period of greater cooperation and communication.

"Ongoing communication and collaborative planning will enable UCSC and the surrounding communities (especially the City of Santa Cruz) to anticipate and address particular challenges and work together toward common goals."

2005 LRDP
Physical Planning Principle - The Santa Cruz Community

"The potentiality of achieving a University centered community and the possibility of influencing community growth so as to secure appropriate development in the campus environs were important factors in the choice of Santa Cruz as the site for the South Central Coast campus of the University...."

"The influences will be in two directions: the University, through its staff, students, and program of activities, will have a strong impact on the surrounding communities; at the same time the character of Santa Cruz will continuously affect the growth and life of the University campus."

1963 Long Range Development Plan

1. City of Santa Cruz web site, citing January 2004 California State Department of Finance statistics.
2. A copy of the signed agreement can be found at lrpd.ucsc.edu/settlement-agreement.pdf.

**c. Marine Science Campus
Coastal Long Range
Development Plan**



The UC Santa Cruz Marine Science Campus (MSC) is located at the coast two miles away from the main campus, at the southwesternmost point of the city of Santa Cruz. Situated on the central California coast and near the center of the Monterey Bay National Marine Sanctuary, researchers at the MSC have direct access to one of the largest protected marine areas in the world. Stretching along one-fifth of the California coast, the 5,300-square-mile Monterey Bay National Marine Sanctuary extends an average of 30 miles from shore, reaching as far as 53 miles out to sea. Since the University's initial acquisition of property in 1973, hundreds of research projects have been undertaken as a result of the availability of high quality seawater and research lab and pool space, ranging from the more visible pool research involving dolphins, sea lions, seals, sea otters, sharks and fish, to the research that takes place in the sea water labs focused on a wide variety of marine invertebrate organisms and questions.

The 100-acre site of the MSC is on a coastal terrace at the western edge of the City of Santa Cruz. Agricultural land stretches to the west and northwest of the site in the unincorporated County. The Campus shoreline provides views of the ocean and a dramatic placement at the transition point between Santa Cruz County's rural North Coast area and the urbanized City of Santa Cruz.

Currently the campus includes 140,000 square feet of research, education and public access facilities. One of the innovative aspects of the MSC is the presence of non-University research entities. These include the National Oceanic and Atmospheric Administration Fisheries Service, United States Geological Survey – Coastal and Marine Group, California Department of Fish and Game, and other organizations. The Seymour Marine Discovery Center is a significant educational facility promoting public understanding of the importance of marine science, which attracts over 50,000 visitors annually.

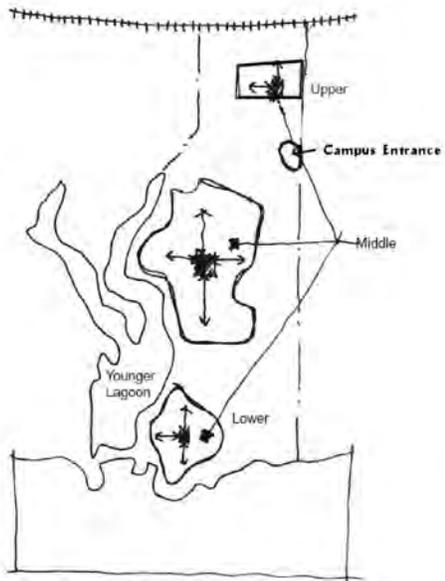


The MSC is located in the Coastal Zone and therefore, development of the campus is governed by the California Coastal Act of 1976. The Coastal Act includes provisions for Long Range Development Plans related to properties within the coastal zone owned by universities or colleges. In 1999, UCSC initiated a planning and approval process for the MSC to create the campus's first Coastal Long Range Development Plan (*CLRDP*) consistent with the Coastal Act. The *CLRDP*, approved by The Regents in September 2004 and certified in January 2009 by the California Coastal Commission, plans for and accommodates additional buildings, outdoor development and parking in four land use areas set aside for "coastal dependent" and/or "coastal related" development and expands trails and other opportunities for public access to the coast. The *CLRDP* also permanently protects over 70% of the site including the Younger Lagoon and terrace areas by incorporating these areas into the UC Natural Reserve System.¹ These undeveloped lands will be restored to their native condition over the first twenty years of the *CLRDP*. In 2009, The California Coastal Commission certified the *CLRDP* and the campus is in the early phases of implementation.

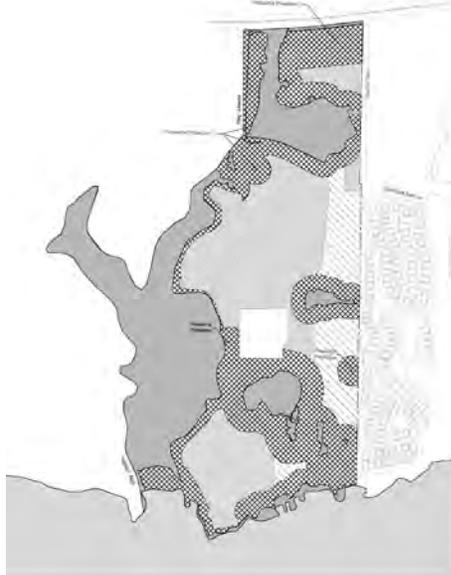


Because the MSC is in the Coastal Zone, the California Coastal Commission requires that its planning documents include significant detail. As a result, its *CLRDP* is considerably more

1. See discussion of the UCSC Natural Reserves beginning on page 80.



DEVELOPMENT ZONE CONCEPT



LAND USE DIAGRAM



WETLANDS DELINEATION

prescriptive than the LRDP for UCSC's main campus in defining the restrictions for future development. The *CLRDP* includes Planning Objectives, which include programmatic objectives and objectives for protecting on- and off-site resources (*CLRDP* Chapter 4). The plan includes a detailed set of Implementation Measures related to land use, natural resource protection, scenic and visual qualities, circulation and parking, public access and recreation, hydrology and water quality, and utilities (*CLRDP* Chapter 5). Lastly the *CLRDP* includes complete and detailed Design Guidelines (*CLRDP* Chapter 6) for buildings, streets, parking areas, trails, landscape, exterior lighting, signage and fences.

Links to
Selected Studies and Plans

*UC Santa Cruz Marine Science Campus
Coastal Long Range Development Plan.*
September 2004,
revised December 2008.

*Marine Science Campus
Area Plan.* 2008.

The *UC Santa Cruz Physical Design Framework* covers all future development at the Marine Science Campus and, for guidance on its design and implementation, incorporates by reference all the physical design guidelines of the *CLRDP*.

3. Five Unifying Concepts

- a. Major Landscape Types
- b. The Core-College Configuration
- c. Building in Clusters
- d. "Ladder" of Roads
- e. "Warped Grid" of Paths



Aerial View of the
UC Santa Cruz Campus,
2003

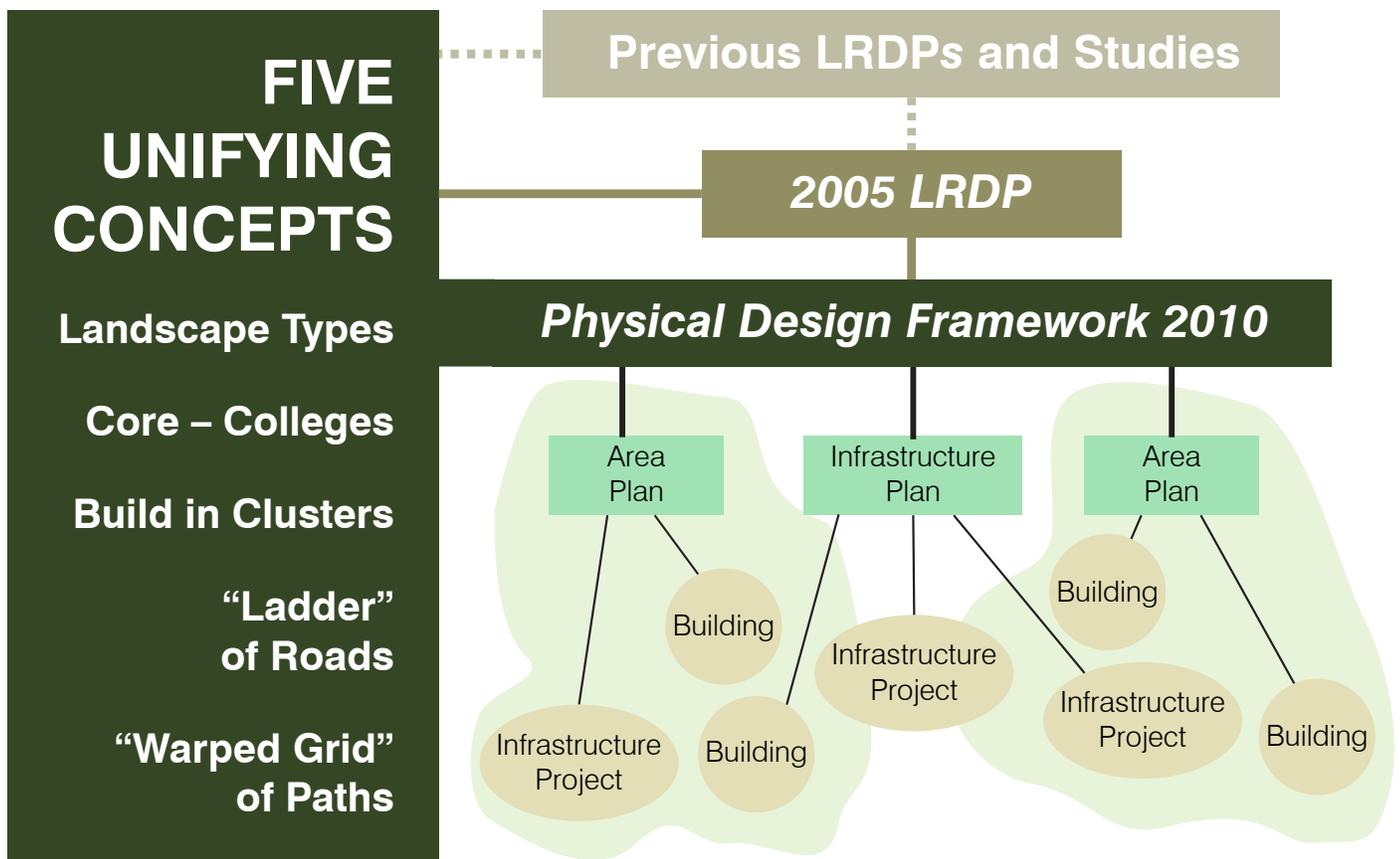


The *Physical Design Framework* is organized around a set of five **Unifying Concepts** that emanate from the distinctive physical structure of the UCSC campus and its historic pattern of development:

- Major Landscape Types
- Core–College Configuration
- Building in Clusters
- “Ladder” of Roads
- “Warped Grid” of Paths

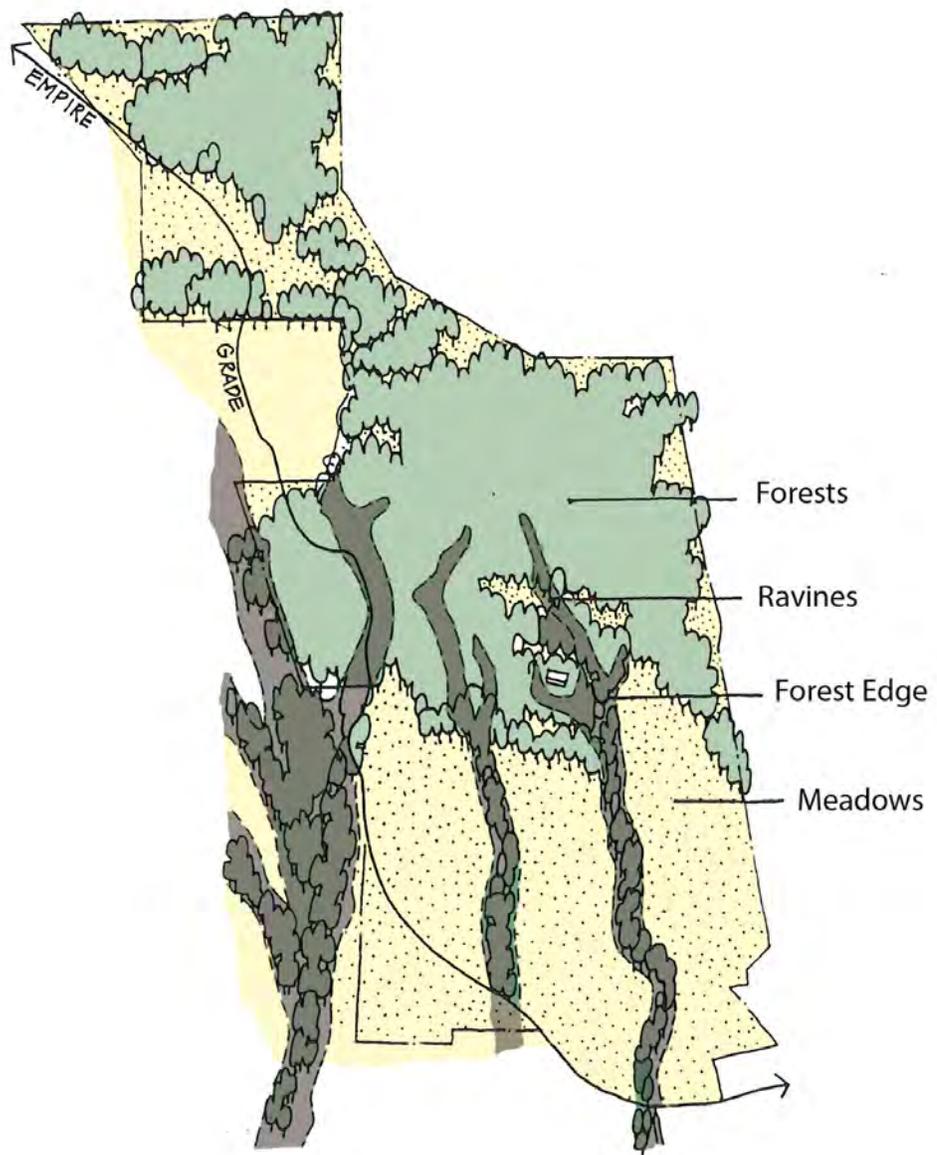
Originally presented in the *1993 Implementation Program for the [1988] LRDP*, these five concepts reinforce the founding intentions of the *1963 LRDP*. They informed the preparation of the *2005 LRDP*, they are embodied in the *2005 LRDP*’s physical planning principles and land use plan (which can be found in Appendices B and C beginning on page 84), they are at the heart of the planning and design guidelines in this document, and they will serve as a basis for its implementation by guiding subsequent area plans, infrastructure master plans, design guidelines, and building siting decisions.

By articulating and reiterating these Unifying Concepts, this *Framework* aims to create a cohesive campus profoundly influenced by the natural landscape, resulting in a built environment both beautiful and functional.



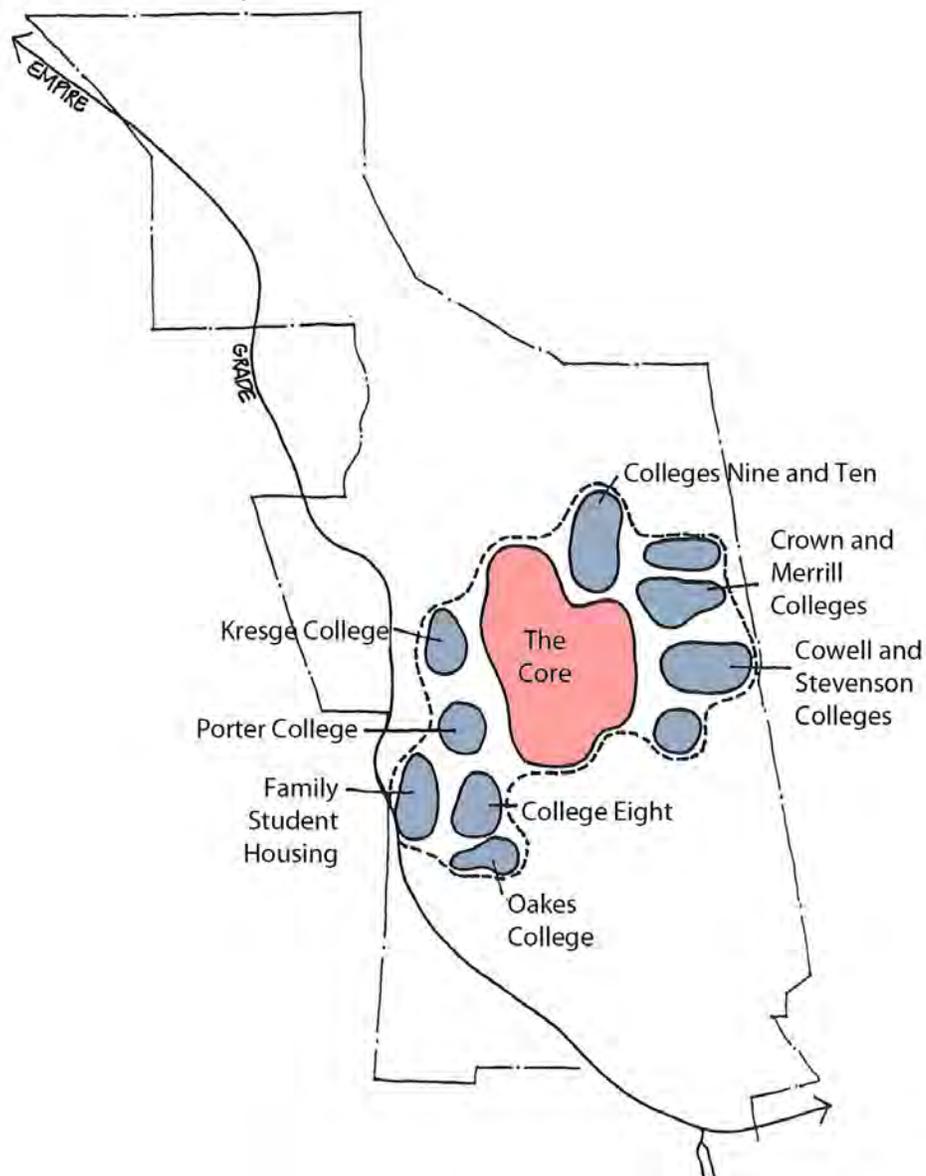
**a. Major
Landscape Types**

Three major landscape types—**Meadows, Forests/Forest Edge, and Ravines**—create the powerful physical presence characteristic of the UC Santa Cruz campus. In order to protect the integrity of each landscape type and to maintain and enhance the campus's ecological diversity, a different approach to development in each area is required.



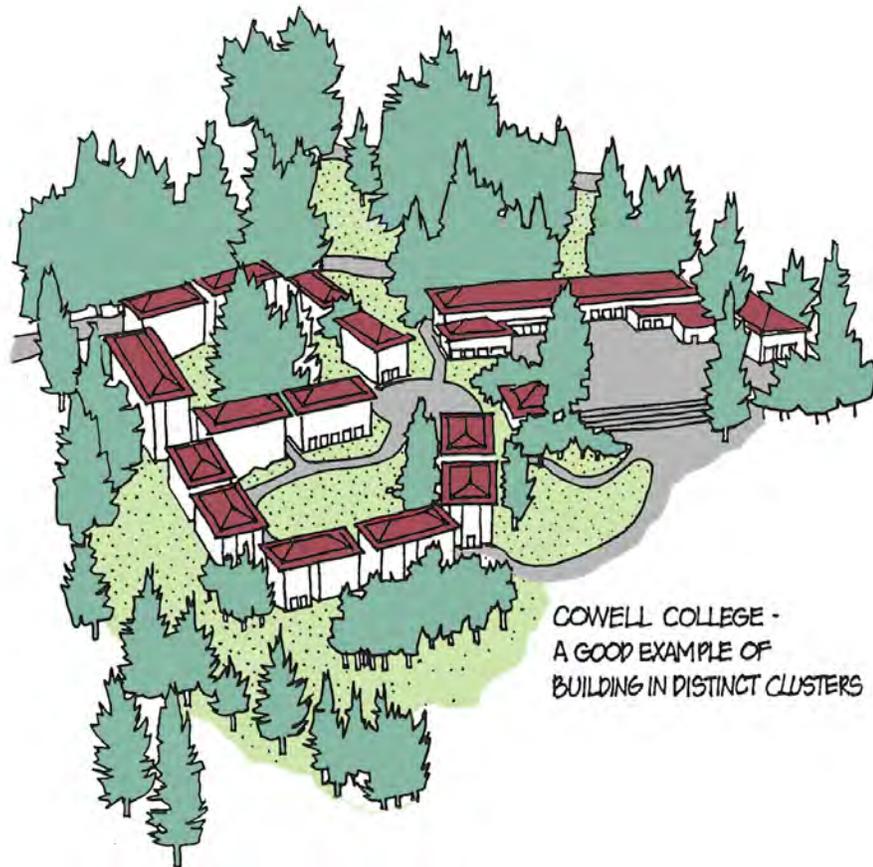
b. The Core-College Configuration

The central campus begins where the meadows and the forest meet, and it extends north into the forested lands. At the center is the academic and service “core” of institutionally scaled buildings—libraries, lecture halls, laboratories and other research facilities, art studios and performance venues, bookstore and student activity buildings—surrounded on three sides by smaller scale groupings of residential colleges and housing. The 2005 LRDP calls for two-thirds of future new building to be infill within already developed areas, supporting existing clusters or creating new ones. The Framework encourages concentrated development in both the core and the colleges in order to leave as much land as possible in its natural state, avoid sprawl, and support pedestrian movement.



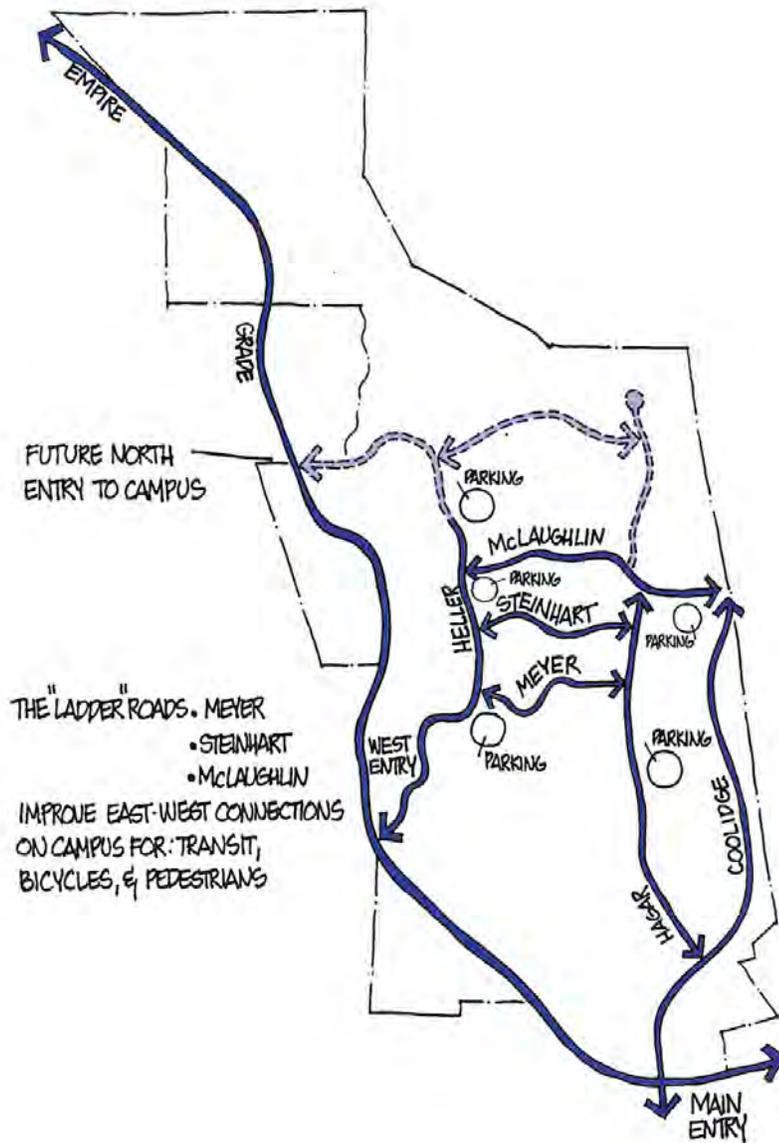
c. Building in Clusters

The tradition of developing residential colleges in distinct clusters has proved to be a successful and effective approach to building in UCSC's extraordinary environment. To continue this development pattern, the *Framework* intends that future buildings, for all uses and in all areas of the campus, form (or anticipate) compact clusters, creating a hierarchy of public exterior spaces that support and encourage gathering and interaction. While building clusters may integrate a variety of uses, an overall spatial and architectural unity within and between neighboring clusters is a major goal of the *Framework*.



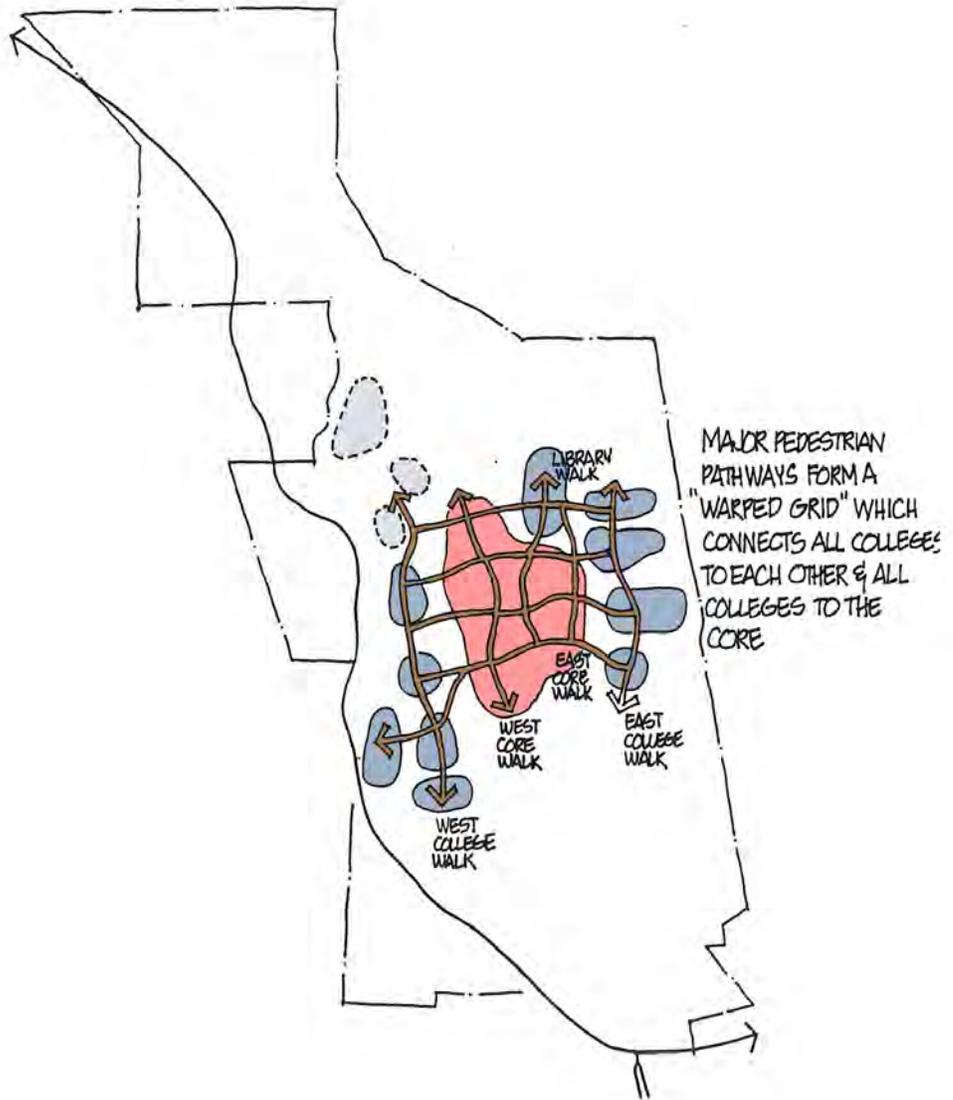
d. "Ladder" of Roads

The roadway system, which is structured as a "ladder" stepping up the contours of the land and connecting the east and west colleges, will be developed to emphasize transit, pedestrian, and bicycle use. Driving to and on the campus will be discouraged. Roads will be laid out to conform as closely as possible to existing topography. The experience for those who do drive will be clear and efficient: since campus circulation is not readily understood by the newcomer, the circulation system must be organized simply and marked clearly. Most parking is proposed as peripheral to the campus core.



**e. "Warped Grid"
of Paths**

The *Framework* calls for a pedestrian path system that, while responding sensitively to trees and contours, is organized in an overall "warped grid" pattern connecting the colleges to each other and to the core. Paths that are safe and easy to traverse, with new bridges where necessary, will increase pedestrian circulation and create opportunities for informal encounter and engagement. Upon completion of the path network, it will be possible to walk to all major classrooms, the libraries and other academic and support facilities within 10 to 15 minutes from nearly everywhere on campus. Interpretive information on paths and trails will lead to deeper understanding and enjoyment of all the campus landscape types.



4. Planning and Design Guidelines

Guidelines

- a. Land
 - i. Topography, Geology, and Hydrology
 - ii. Major Landscape Types
 - iii. Open Space Network
- b. Buildings
 - i. The Colleges and Housing
 - ii. The Campus Core
 - iii. The Main Entrance
 - iv. North Campus
- c. Roads and Paths
 - i. “Ladder” of Roads
 - ii. “Warped-Grid” of Paths
- d. Infrastructure



Introduction

The planning and design guidelines that follow form the core of the *Physical Design Framework*. With their roots in the *Five Unifying Concepts*, these guidelines grow out of the landscape character and academic identity of the campus and, like the unifying concepts, are intended to enhance and strengthen them both. They are open-ended guidelines, not regulations or mandates; as such, they are not absolute. They are intended to be evocative rather than prescriptive; inspiring rather than repressive; to convey a set of intentions rather than a set of rules. They have been developed in the belief that, like the University's academic enterprise, good design is a process of investigation, analysis, discovery, and implementation. Not all of them will be appropriate in all circumstances, and on occasion there may be good reasons to vary from them or to revise them.

The *Physical Design Framework*, along with the *2005 LRDP* and any relevant planning studies, will be provided to executive architects, landscape architects, engineers, or other design professionals in the initial stages of the design process. Project requirements and the *Framework's* planning and design guidelines will be discussed with them in detail at their first meeting with the Chancellor's Design Advisory Board, typically at the project site as described in the *Campus Process* section beginning on page 6. The design response will be reviewed in the context of the guidelines at each subsequent Board review.

"A major theme of the campus's approach to physical development is creating the connections that support a vital intellectual community—one that supports strong disciplinary inquiry but also facilitates the interdisciplinary collaborations among departments and programs in providing research and educational opportunities"

UC Santa Cruz
2009-19 Capital Financial Plan

The planning and design guidelines are organized in the same fashion as the *Five Unifying Concepts*: guidelines related to the campus landscape precede those concerning building configuration, and they are followed by those related to the "ladder" of roads and "warped grid" of paths.

a. Land

"Integrate the natural and built environment: New development will respond to the aesthetic qualities of UCSC's unique natural environment through siting, development patterns and architecture that are sensitive to the natural setting."

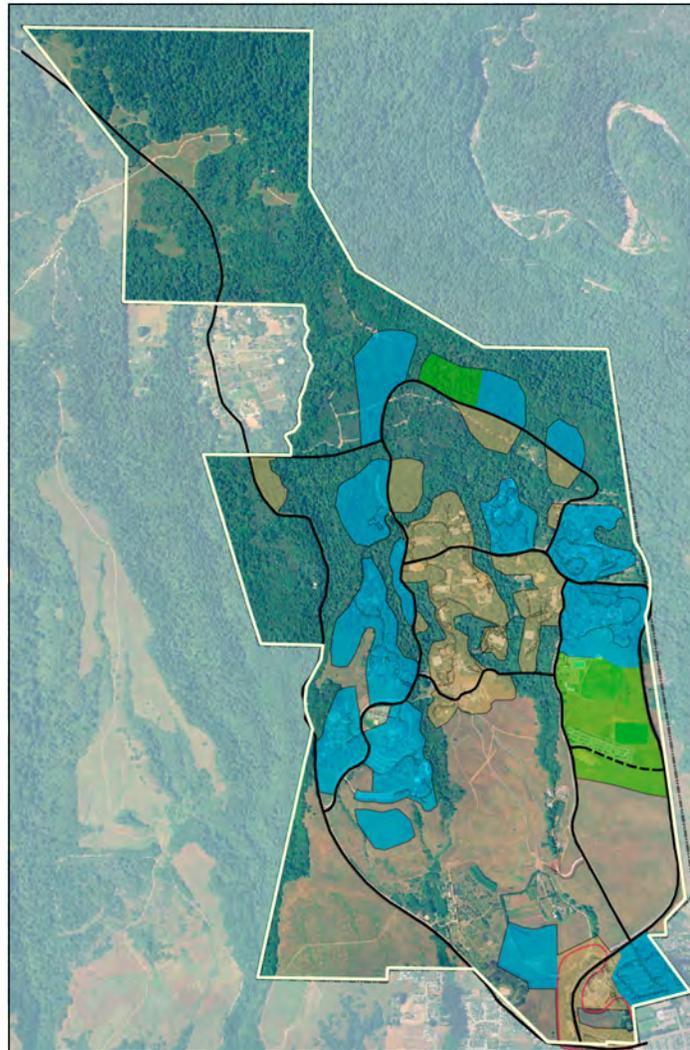
2005 LRDP
Physical Planning Principle -
Land-Use Patterns

"THE CHALLENGE. The campus of the University of California, Santa Cruz, offers an unparalleled opportunity to build freshly, in a beautiful setting, structures that will implement a stimulating educational concept. Such opportunities have been extremely rare in the history of our country; never, perhaps, has the site chosen for the development of such a venture been so inspiring...."

"The site demands unique attention. Everyone who saw it during the planning stage was awed and impressed by the need to keep it as unspoiled as possible. 'Any manicuring of this area will produce a commonplace effect,' said Ansel Adams. 'To a greater extent than any of us have faced heretofore, the buildings are less important in the visual composition than the trees,' commented Thomas Church."

1963 Long Range Development Plan

UC Santa Cruz draws much of its identity from the campus landscape: as much as our buildings have, our remarkable site has shaped us. The principal determinant of UCSC's campus form has been the surrounding landscape. Its remarkable beauty and rich variety has been acknowledged from the earliest visits of campus planners and architects; understanding it and enhancing it has formed the core of planning efforts ever since.



Aerial View of the UC Santa Cruz Campus with 2005 LRDP Land Use Plan Superimposed

As illustrated above, the land use plan in the 2005 LRDP proposes a landscape and open space framework built on the campus's historic pattern of development clusters, located carefully to balance programmatic need with ecological sensitivity. The unbuilt areas of the UCSC campus have been as carefully planned as the developed areas have; like the developed areas, they require continual management and maintenance. As a result, this *Framework's* planning and design guidelines begin with those derived from the campus landscape, its shape and structure, its several landscape types, and its open space network.

Links to
Selected Studies and Plans:
UCSC Landscape Management Plan,
1995

i. Topography, Geology, and Hydrology

There are few, if any, flat sites at UC Santa Cruz. The campus is sited on a series of marine terraces that rise nearly 900 feet from the campus entry to its northern boundary. Several long ravines and their branches transect the terraces, dividing the central and south campus roughly into thirds. The intersecting terraces and ravines form a topography and landscape of extraordinary complexity and diversity, shaping the campus's 2,030 acres into four distinct watersheds.

Below grade, the configuration of the campus soils and geology is as rugged and varied as its visible surface. A marble terrane underlies most of the developed campus, and a granitic terrane underlies the northern one-third. Karst¹ features—ravines, sinkholes, and caverns—are readily apparent in the lower and central campus, developed as a result of the dissolution of marble along fractures, joints, and faults.

Taken together, the ravines and the underground fissures and caverns, form a natural storm water system. Most campus runoff flows to one of numerous on-campus sinkholes and from there into a complex aquifer of underground fissures and caverns, ultimately surfacing at several off-campus springs. Only a limited amount of runoff leaves the campus as surface flow.

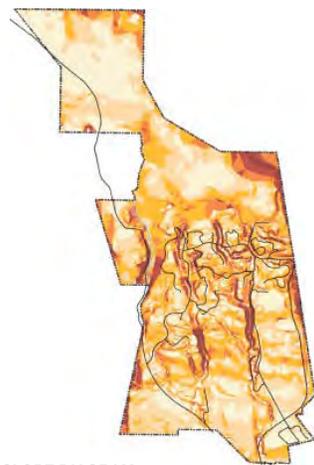
Since its soils are characteristically derived from underlying rock, they too form a complex pattern. Pinto and Felton loams support both grasslands and forests in the central and lower campus. Marble-derived clay loams underlie wooded areas of the western campus. Granite-derived loams in the northern campus support grasses, oaks, and pines. Sandy loams are found in northern campus lands supporting chaparral, oaks, and pines.

The dramatic combination of varying slope, soils, hydrology, and orientation supports a range of physical environments and plant communities that make each campus place unique. A

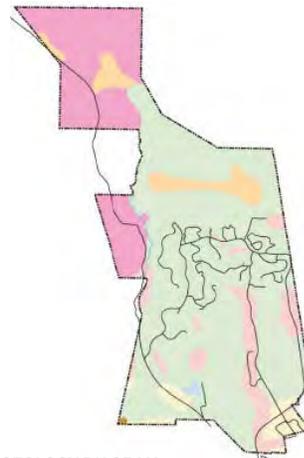
"The campus climate is characterized by warm, dry summers and mild, rainy winters. High temperatures and low precipitation are the norm from approximately April through August. The months from November through March are dominated by cooler temperatures and heavy rains. Though winters are typically mild, colder winds from inland regions with more continental climates can result in short-term cold snaps. Both summer and winter temperatures are moderated by the marine influence, and summer fog is a common occurrence. Winds are generally northwesterly and seldom reach severe intensities; in addition, much of the campus is sheltered from prevailing winds by hills and trees.

"Rainfall averages approximately 30 inches per year. Over the past 25 years, it has ranged from 15 inches in 1989 to 59.8 inches in 1983. Rainfall levels vary considerably on campus with elevation; the lower campus receives an average 30 inches of rainfall annually, while the upper campus receives 40 to 45 inches."

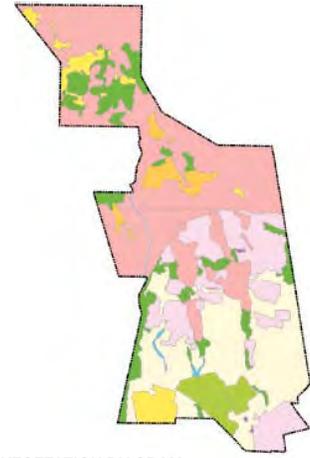
2005 LRDP



SLOPE DIAGRAM
illustrations from 2005 LRDP



GEOLOGY DIAGRAM



VEGETATION DIAGRAM

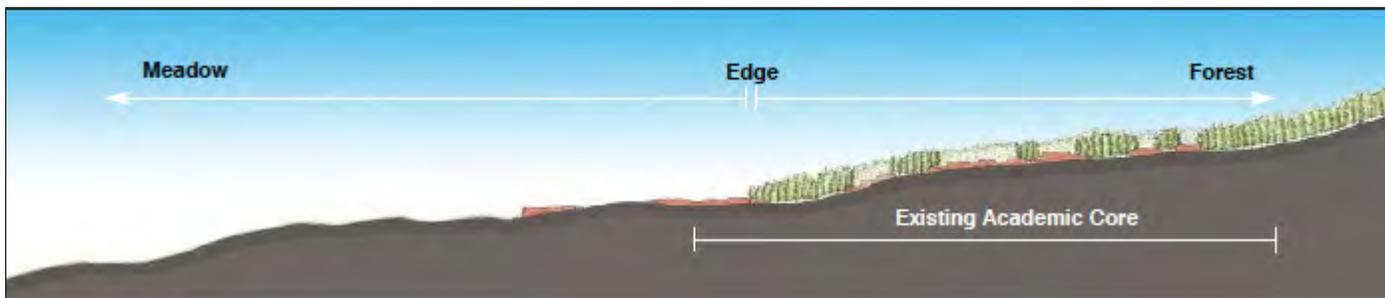
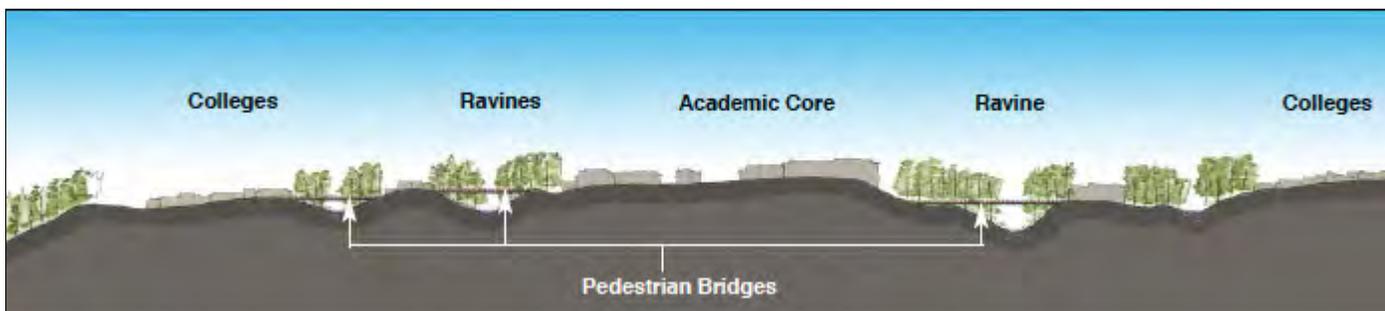
1. Karst is a type of topography that is formed on limestone, gypsum and other rocks, primarily by dissolution. It is characterized by sinkholes, caves, and underground drainage.

cross-campus walk reveals a world of contrasts—brilliant sun in the open meadows, the deep shade of the redwood forest, isolated places of intimate scale, breathtaking vistas of Monterey Bay—creating a special relationship to the natural surroundings for students, faculty, staff, and campus visitors.

Guidelines Related to Topography, Geology, and Hydrology

Links to Selected Studies and Plans:
Geologic and Hydrologic Resource Assessment, North Campus Planning Area, 2000
Report on Drainage and Erosion Conditions, North Campus Planning Area, 2000
Preliminary Geotechnical Investigation for North Campus Planning Study UCSC, 2000
Dye Tracing Study in Limestone Karst – various proposed building sites, 2000-04
Revised Geology and Geologic Hazards 2005

- Respect site topography and immediate surroundings. Small floor plates, stepping or terracing that responds to the terrain, and terraced open spaces are design strategies that have proved successful.
- Limit grading beyond project footprint to reduce impacts on existing trees, vegetation, and landscape. Avoid highly geometric grading patterns; transition gradually from constructed slopes to original topography.
- Integrate new development into the landscape by using storm water designs that minimize and balance runoff, maximize infiltration and preserve natural drainages. Low Impact Development (LID) stormwater management strategies are a campus standard.

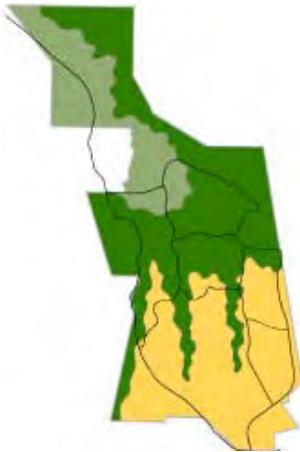


ii. Major Landscape Types

Three major landscape types—meadows, forests and forest edge, and ravines—combine to create the powerful physical presence of the UC Santa Cruz campus. Each type has its own distinct characteristics and each requires a different development approach in order to protect its essential character and to maintain and enhance the campus’s ecological diversity.

Meadows

When entering the campus from the south, the undeveloped meadows form a dramatic foreground to the larger campus landscape beyond. When viewed from above, their broad sweep extends to distant views of the City of Santa Cruz, the Monterey Bay, and the Pacific Ocean. The meadows, rolling downhill from the redwood forest edge, provide a sense of rural open space unique to UC Santa Cruz. The historic Cowell Ranch and Lime Works buildings at the campus entrance and the meadow landscape surrounding them accent this rural impression.



Development of buildings, roads, parking, or extensive planting can fragment meadows, destroying their visual scale, reducing their value as wildlife habitats and natural communities, and impinging on the historic integrity of their setting. Likewise, encroachment of brush and trees, which tends to happen naturally in the absence of wildfire, can transform the character of the meadows. Ever since the 1963 LRD^P declared that “the great meadow toward the south of the campus should not be built upon [and] that the first buildings to be encountered in entering the site would be at the crest of the hill where the trees begin,” UCSC campus plans have discouraged new growth in the meadows. The “Great Meadow,” stretching between Hagar Drive and Empire Grade, has become a cherished campus symbol, a spectacular foreground to the central campus,

“If the University maintains this [meadow] space as an open area, by the year 1990 it may well be one of the most rare, gratifying and valuable assets of the campus.”

1963 Long Range Development Plan

The 2005 LRD^P designates most of the undeveloped lower campus meadow areas as Protected Landscape, Site Research and Support, and Campus Natural Reserve. Adjacent to existing development, however, some meadow areas are designated Physical Education and Recreation, and development could occur there. To protect the sweeping visual effect of open meadows, the 2005 LRD^P and LRD^P EIR also identify policies and mitigation measures restricting new development

Looking south over the meadow west of Porter College, which is visible at the upper left.



to meadow margins, limiting night lighting and other visual intrusions, and requiring that any road alignments across the meadows be screened.

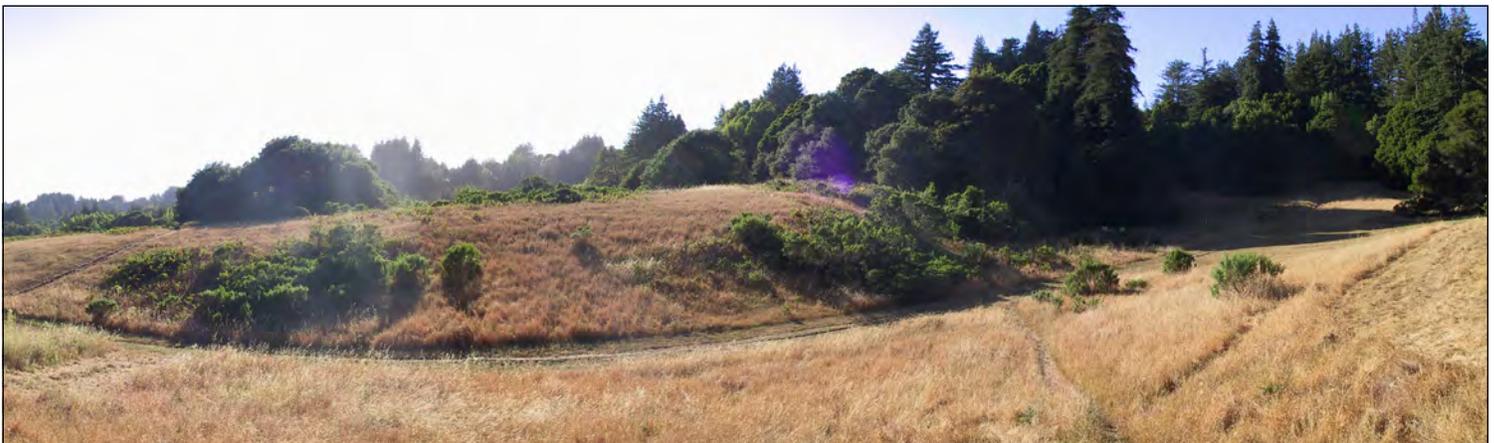
Guidelines for Meadow Areas

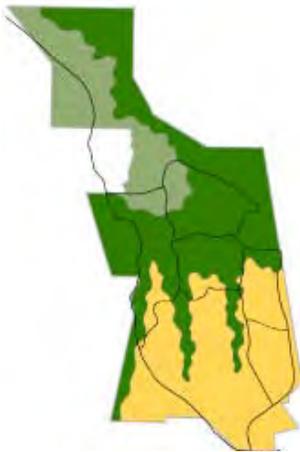
- Maintain the continuity and visual “sweep” of the meadow landscape across the lower campus, from the Pogonip east of the campus to Wilder Ranch State Park on the west.
- Maintain the lower campus meadows as a buffer between central campus development and the city of Santa Cruz, continuing the role of campus lands as an important element in the city’s greenbelt.
- Do not permit new plantings or plant succession to change the overall visual character of the lower campus meadows. Avoid new fencing, except where necessary to manage meadows or grasslands.
- Preserve the integrity of meadows by maintaining a clear meadow boundary. Site development so as not to encroach on the meadow open space.
- Consider opportunities to manage, restore and enhance native meadow habitat as appropriate to maintain the visual expanse of open space and natural vegetative and wildlife diversity.
- Consider long-range views in the siting and design of facilities, both south towards the ocean and north towards the forest edge, particularly where the meadows meet the forest edge.

Links to
Selected Studies and Plans

*Visual Analysis of the
Lower Campus Grasslands, 1986*

*Visual Assessment of the
UCSC LRDP, 1987*





Forests and Forest Edge

Redwood and mixed evergreen forest is the landscape environment most commonly associated with UC Santa Cruz. As originally proposed in the 1963 LRDP land use plan, it is the landscape type where most campus development would be located. The 1963 LRDP also proposed that the central challenge of developing the campus site would not be one of shaping a new landscape, but rather of protecting what was already here. Accordingly, maintaining significant contiguous forest areas and, to the extent possible, preserving healthy, mature trees has been a campus goal ever since.

During the late nineteenth and early twentieth centuries nearly all the redwood, oak, and fir on the site were cut and used to fuel the kilns that the Cowell Lime and Cement Company used to transform limestone quarried nearby into cement. As a result, the existing forest is entirely second growth and still in transition, shaped by extreme human intervention over 100 years ago. Wise management will present opportunities to restore a badly scarred landscape, improving and enhancing its environmental integrity.

Covering well over one-half of the campus, the forest's towering redwoods dominate the scale of the buildings, paths, and roads they surround, providing a unifying force compatible with a wide variety of building types and styles. Within the deeply shadowed forest individuals find areas of privacy and isolation, rare on university campuses, that punctuate the collegial and social open spaces of the campus's building clusters.



McHenry Library, in the middle of the forest in the central campus.



The meeting point of forest and meadow—the forest edge also known as the “ecotone”—contains species native to both forest and meadow, making it an area of particular beauty and ecological diversity. The transition between the shaded and confined forest spaces of the central campus and the bright, expansive meadows with their spectacular distant views provides moments of great drama and delight.

Design for forested areas :

(above) The Physical Sciences Building was carefully set into the surrounding redwood forest.

(middle) Kresge College’s “street” captures and reflects welcome sunlight.

(far right) There is a clear sense of entry from the forest into the Humanities and Social Sciences complex.

UCSC’s sustainable strategy of siting most new development as infill, rather than spreading out into undeveloped woodland areas, will nevertheless require the removal of some trees, but the 2005 LRDP’s emphasis on concentrating development to the greatest extent feasible protects the natural integrity of other forested areas for vegetation and wildlife communities. Replanting and ecological restoration in the forest will be a critical part of many future projects. Campus exploration of the forest’s potential as a resource for ecological restoration and remediation techniques—to manage storm water or to offset carbon emissions, for example—are in an early stage, but show great promise.

Guidelines for Forested Areas

- Build carefully in the forest. Make development compatible with existing vegetation.
- Build no taller than the surrounding tree canopy.
- Create a clear sense of entry from forest path to building cluster.
- Site and design future development to preserve the visual and ecological integrity of the forest, to maintain contiguous forest cover and habitat for wildlife, and to maintain public safety. Protect trees and understory vegetation of mixed age and species to maintain forest diversity.
- During project planning, identify trees and tree clusters of particular aesthetic value and incorporate them in the design.

Links to
Selected Studies and Plans:

*Proposed Forest Management Plan for
Upper Campus Lands, 1982*

*Campus Lands
Management Plan, 1986*

*Analysis of Vegetation and Land
Management Program, Prepared for the
University of California,
Santa Cruz, 1987*

*Land Management Study for
Fire Prevention, 1995*

- Design building clusters to create welcoming sunny public outdoor spaces that contrast with the shaded forest, in order to encourage activity and social interaction.
- Design nighttime lighting in the forest to provide a safe environment while minimizing light pollution and intrusion into wildlife habitats.
- Site and orient buildings to optimize natural light and to take the best advantage of site conditions of sunlight and forest shade and their potential to provide natural heating and cooling.

Additional Guidelines for the Forest Edge

- Consider the visual continuity of the forest edge as seen from a distance when designing buildings there. Maintain heights of buildings and infrastructure elements significantly below the tree line.
- Arrange building elements and clusters to create an irregular building profile against the forest edge. Avoid long, unbroken horizontal roof lines.
- Choose exterior colors to blend with the forest edge. Avoid using bright colors or highly reflective exterior surfaces.
- Use plant materials, either existing or newly planted, to blend new development appropriately into the forest edge.
- Incorporate the dramatic sense of transition when moving between the shade of the forest and light of the meadow into the design of buildings there.

*The heights of the buildings of the
arts area and the Academic
Resource Center (below) are well
below the top of the forest edge
against which they are seen.*



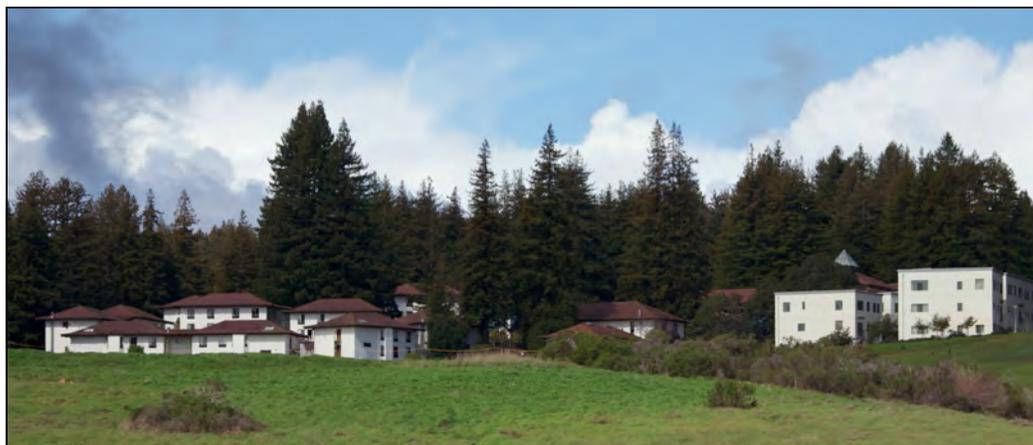


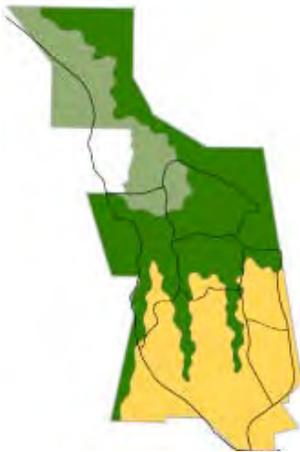
Design at the forest edge.

The entrances to Cowell College (above) and the Academic Resource Center (right) recreate the dramatic transition between shaded forest and bright meadows beyond.



The informal site plans and varied roof lines of Cowell and Stevenson Colleges (right) sit comfortably between a foreground of rolling meadows and a backdrop of redwoods.

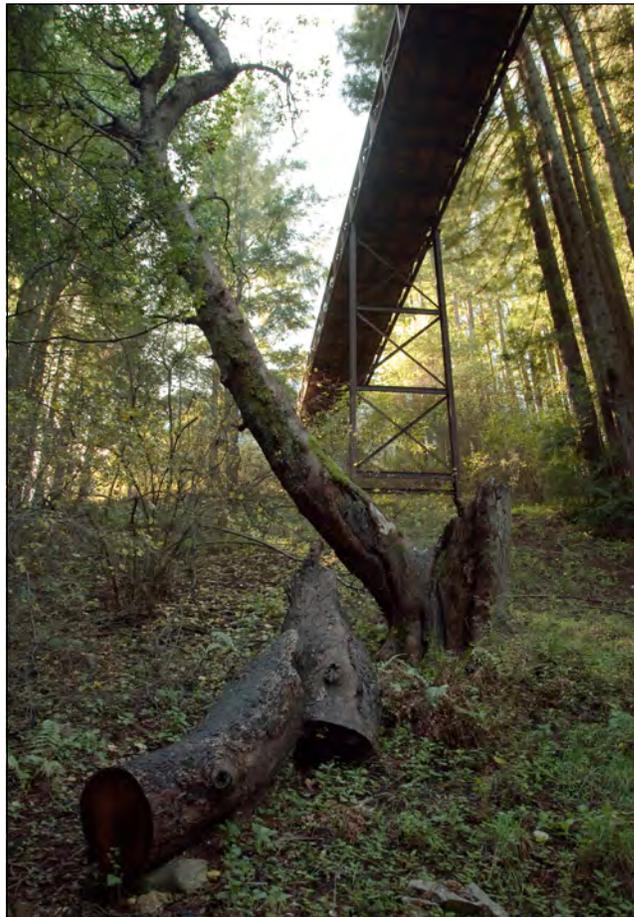




Ravines

The Moore Creek and Jordan Gulch ravines and their several fingers run north-south through the forest of the campus core, cutting deeply into the terraced topography. On a sunny day, the deep shade of the ravines contrasts sharply with nearby sunny meadows and forest clearings; temperature differences on a warm summer day can approach 20°F. As the ravines join together and emerge from the forest into the meadows, their routes are marked by the dense and visually powerful stands of bay, buckeye and oak they contain. As much as 70 feet deep and 350 feet wide, they provide topographic definition between the colleges and sub-areas of the academic core. Their steep sides provide a challenge to development of east-west cross-campus travel routes. Although the ravines are generally excluded from building development in the 2005 LRDP land use map, construction of bridges and utility infrastructure is likely and must be done with care.

The ravines are important wildlife corridors that also provide secluded travel routes and natural spaces for the campus's human occupants. Historically Jordan Gulch and its tributaries were industrial travel paths used by the lime works that operated on the campus during the nineteenth century; remnants of a historic rail bed still remain.



The ravines function as major campus storm water conveyances, channeling significant flows to several sinkholes in the channel bottoms and thence into the karst aquifer that underlies the campus. Increases in storm water flows from campus development could exacerbate existing erosion problems in the Moore Creek and Jordan Gulch drainages and cause sinkholes in the karst to clog and overtop, increasing the potential for erosion and resulting adverse water quality. With the continuing use of the ravines as storm water infrastructure and informal travel routes, it will be important to protect the ecological integrity and water quality of the ravines through erosion control and sensitive maintenance of infrastructure.



UCSC's ravines serve multiple functions: storm water conveyance (left), infrastructure routes (center), and wildlife habitat and activity corridors.

Guidelines for Areas in and near the Ravines

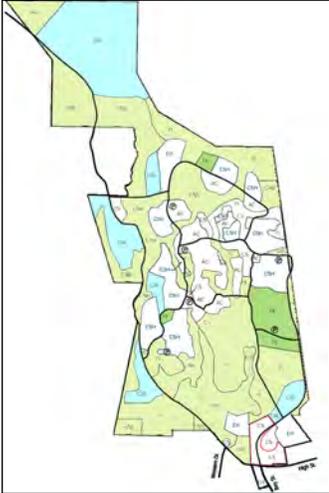
- Protect the visual qualities, ecological values, and historic resources of the campus ravines.
- Limit development within ravines or riparian zones to minimize effects on natural water flows. Grade minimally near ravine edges. Minimize impervious surfaces in new development. Incorporate “green” Low Impact Development (LID) storm water management practices into construction and operations.
- Protect wildlife corridors in the ravines by minimizing infrastructure intrusions and avoiding the introduction of excessive artificial night lighting.
- Locate major circulation routes, whether vehicular or pedestrian, over bridges that span the ravines rather than along paths and roads through them.

Links to
Selected Studies and Plans

Evaluation of Drainage Conditions at the University of California Santa Cruz Under Existing and Proposed Campus Development, 1988 (1989 Revised)

Stormwater and Drainage Master Plan, 2004

iii. Open Space Network



2005 LRDP Land Use Map
Showing Open Space Areas

The 2005 LRDP and long-standing campus practice recognize UCSC's open spaces as an important campus resource requiring protection and active management: "open space" does not mean "empty space." Open spaces define the physical character of the UCSC campus, serve as "living laboratories" for teaching and research, provide essential plant and animal habitat, and allow formal and informal recreational activities.

The 2005 LRDP land use map includes an open space network that covers over 60% of the campus's 2,030 acres, categorized into four land use designations¹:

- The **Campus Natural Reserve** (CNR designation; 410 acres, 20.2% of main campus lands) protects certain natural features and processes for teaching and research. Campus Natural Reserve land will remain in its undeveloped state except as required for maintenance, and construction is prohibited, except as required for teaching and research or the limited extension of utilities, roads, and paths.
- **Protected Landscape** (PL designation; 505 acres, 24.9%) maintains special campus landscapes for their scenic value and protects special vegetation and wildlife continuity zones. To the extent feasible, Protected Landscape will be retained in an undeveloped state as the campus grows, and any development there will not impinge on its overall character.
- The **Campus Habitat Reserve** (HAB designation; 25.5 acres, 1.3%) was established under a 2005 Implementing Agreement between the U.S. Fish & Wildlife Service and the University to retain and manage high-quality grassland and forest habitat for the California red-legged frog and the Ohlone tiger beetle, two Federally-listed species.
- **Campus Resource Land** (CRL designation; 335 acres, 16.5%) is assigned to lands that are not planned for development under the 2005 LRDP and would be maintained in their

*Playing fields are an integral part
of UCSC's open space network*



1. A complete description of each land use designation is included in *Appendix C: 2005 LRDP Land Use Designations*, page 86.

"An interconnected natural and built environment: The built environment, resource lands, and natural areas should be strongly linked—the close proximity of classrooms and research space to these different habitat types provides a living laboratory for teaching and research. Campus planning efforts should reflect a long-term vision for particular uses and for connections between the built and the natural systems that influence the environment; the natural reserve lands should be directly linked to and managed in support of the campus's academic mission."

Strategic Futures Committee
Final Report
June 2004

natural state to serve as long-term reserve lands for future use. Any development in this land use designation will require additional environmental review and an LRDP amendment.

Two other 2005 LRDP land use designations contribute to UCSC's open space network:

- **Site Research and Support** (SRS designation; 154 acres, 7.6%) consists of land used by the Center for Agroecology and Sustainable Food Systems (CASFS) and the UCSC Arboretum. This land use designation permits development of new buildings associated with these and future similar research programs.
- The **Physical Education & Recreation** designation (PE designation; 86 acres, 4.2%) permits construction of indoor recreation facilities, playing fields and courts, a future recreation and event center, and parking and transit facilities. Because playing fields and courts are an integral component of the campus' open space network, the *Physical Design Framework* discusses this land use category together with the open space land use designations.

General Guidelines for the Open Space Network

- Minimize construction of structures within the open space network. When structures are required, site and design them and their supporting infrastructure sensitively, using massing, height, materials and color that are compatible with the surrounding landscape.
- Site development in land areas designated for development—the Academic Core, Campus Support, Colleges and Student Housing, Employee Housing, and Physical Education and Recreation—so as to create open spaces that form compatible links into and among



Campus Natural Reserve, Protected Landscape, and Site Research and Support designations.

- Provide opportunities for interpretation or informal recreation in Campus Natural Reserve, Protected Landscape, and Site Research and Support designations.

Guidelines for Site Research and Support Facilities

- Reduce the visual impact of buildings as much as possible, consistent with program needs.
- Arrange buildings in compact clusters, limit building mass and height, and use vernacular forms, materials, and colors appropriate to a central California agricultural setting.



Aerial view of the UCSC Arboretum.

Buildings at Site Research and Support Facilities, like those at the Center for Agroecology and Sustainable Food Systems shown at right, play a role secondary to the use of the lands that have been set aside for research purposes.



Guidelines for Physical Education and Recreation Facilities

- Step playing fields with the terrain and avoid grouping fields into “super fields” requiring large amounts of grading and major tree removal.
- Site buildings and parking, particularly large scale recreational and assembly facilities, so as to leave the campus open space network intact.
- Enliven the exterior surfaces of and spaces around recreation facilities with uses that encourage human activity and interaction (e.g., climbing walls, exterior playing courts, intimate lawn areas for stretching and yoga, etc.)
- Consider the use of green walls and sod roofs to protect views from adjacent areas, particularly at meadow sites.
- Design and develop facilities that minimize water demand and energy use.
- At meadow sites, limit plantings to low, water-conserving grasses and shrubs.
- Shield outdoor lighting to avoid night sky light pollution, and schedule its use to minimize lighting intrusions upon local residents and wildlife.

(See also the Guidelines Related to Topography, Geology, and Hydrology on page 29.)

Links to Selected Studies and Plans

Recommendations for Teaching and Research in Natural Resources at Santa Cruz. 1963.

Natural Resources Study for the Santa Cruz Campus of the University of California. 1966.

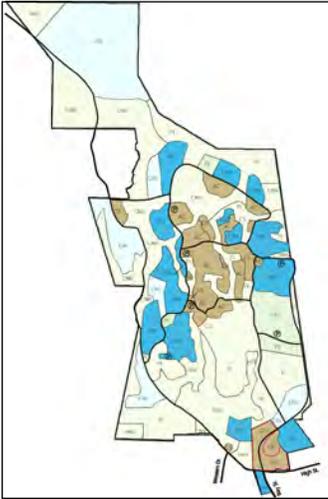
A Plan for a Natural Areas Reserve on the UC Santa Cruz Campus. 1983.

Academic Plan for the Campus Natural Areas Reserve. 1985.

UCSC Campus Natural Reserve Academic Plan. 2002.

East Campus Facilities Study, 2008

b. Buildings



2005 LRDP Land Use Map
Showing Buildable Areas

As the campus plans for further growth, a review of UCSC's historical development (shown in the series of illustrations at right) is instructive. For the first twenty years, there is a clear distinction between the residential colleges, each of which was designed as cluster of smaller buildings, and the more formal or monumental buildings that tended to exist as individual objects within the campus core. With the completion of Sinsheimer Laboratories in 1989 and the Science and Engineering Library in 1991, however, major public spaces began to be created within the campus core, and the importance of careful design of clusters and linkages between them became more apparent.

The 2005 LRDP land use map allows significant building development on only 25% of main campus lands, in one of four land use designations:

- The **Academic Core** (AC designation; 132 acres, 6.5% of main campus lands) accommodates instruction and research space, organized research activities, academic support functions, libraries, student services, public services, and institutional support.
- **Campus Support** (CS designation; 85 acres, 4.2%) includes buildings and areas necessary for campus facilities management and transportation operations, fire protection and police facilities, heating and cooling infrastructure, campus-service commercial and retail functions, public-oriented and visitor services, and student service functions.
- **Colleges and Student Housing** (CSH designation; 228 acres, 11.2%) areas are designated for student housing and food service, and related parking, student service, student academic support, child care, and physical education and recreation functions.
- **Employee Housing** (EH designation; 69 acres, 3.4%) accommodates housing for faculty and staff, child care facilities, and affiliated accessory buildings, parking, and recreation space.

"Diversity and distinctiveness: The scale and forms of campus physical space should be as varied and engaging as its intellectual endeavors.

The "marketplace of ideas" that characterizes the research university will take place in venues ranging from the idea-forming conversation occasioned by a chance meeting to the organized laboratory or large lecture hall in an academic building complex. Meaningful and diverse connections—the spaces between, around and within campus buildings—provide important places for gathering, social engagement, civic discussions and advocacy, cultural programming, and other types of co-curricular activity."

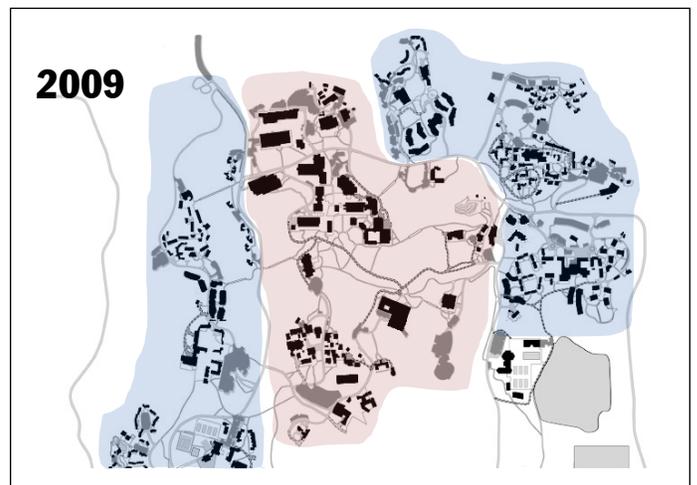
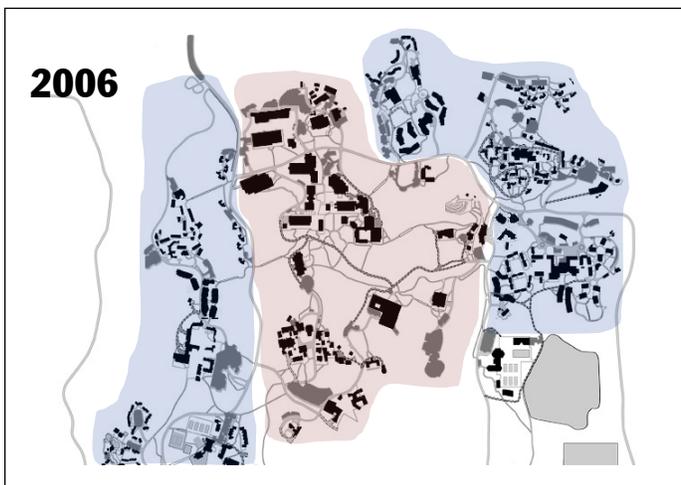
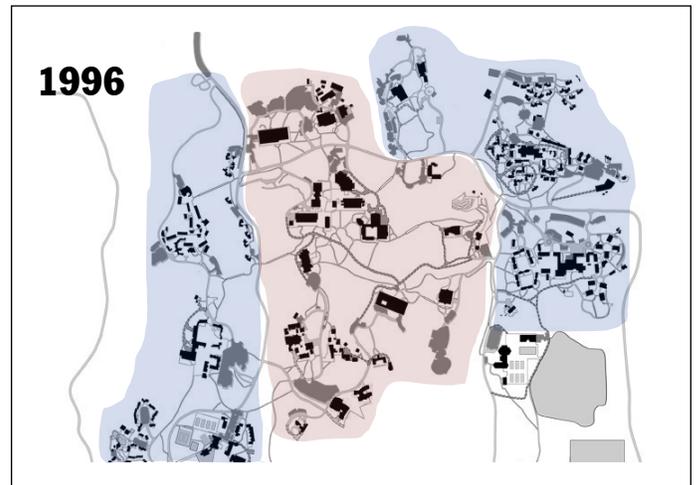
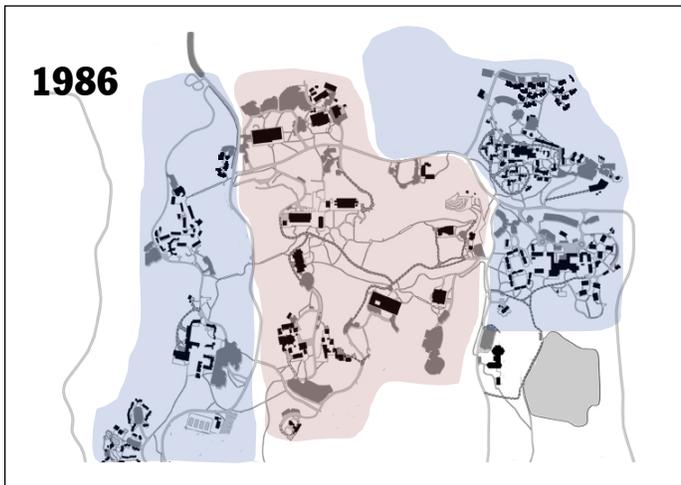
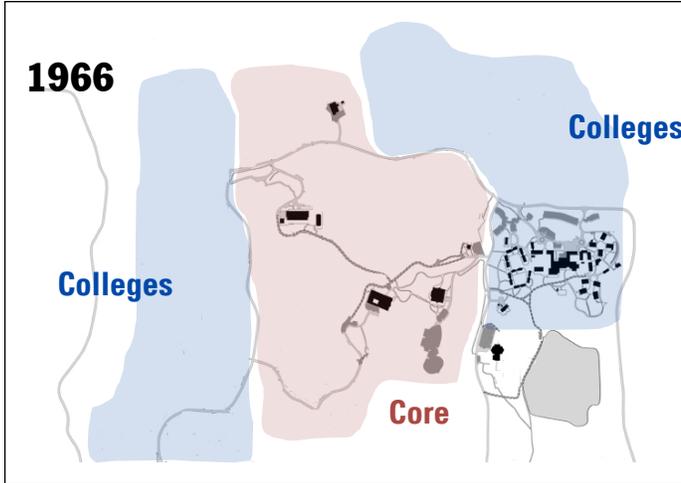
Strategic Futures Committee
Final Report
June 2004

With the campus growth anticipated by the 2005 LRDP, whether by infill and densification of developed areas or by expansion to the north campus, thoughtful planning and sensitive architectural design will be required to maintain UCSC's unique qualities of place.

General Building Guidelines: Programming

- When developing building and facility programs, seek opportunities to cluster complementary facilities and to maximize the potential use of every building site. (The combination of programs for the Bay Tree Bookstore, the Graduate Commons, Career Center, and Student Affairs conference rooms to create the complex around Quarry Plaza is a good example of this.)

UCSC's Development over Time



General Building Guidelines: Siting

- Site buildings so as to protect visually and ecologically significant landscape features.
- Connect future buildings and public spaces to an integrated campus circulation system. Design buildings in clusters that support the larger “warped grid” of campus pedestrian paths. Find opportunities when siting and designing building clusters to improve disabled access throughout the campus, particularly for wheelchair users.

Successful building clusters :

The Humanities and Social Sciences Facility (right), a single project that was built as a cluster of smaller buildings.

Crown and Merrill Colleges (far right).



Strategies for engaging the surroundings (above left to right):

Large window in a study area of the Science and Engineering Library.

The colonnade and courtyard—an “outdoor room”—of the Academic Resource Center.

Outdoor eating area and roof deck of the Graduate Commons.

- Avoid free-standing single buildings set as objects in the landscape. When a building’s program or scale requires a single building, and particularly when it is anticipated to be a first phase with future additions, design the building to anticipate future clustering.
- If programmatically desirable, consider infill buildings at existing colleges for all appropriate uses: academic, research, faculty offices, housing, etc.

General Building Guidelines: Design

- Build no taller than the surrounding tree canopy.
- Make buildings that allow all their users to engage with their surroundings, by means of careful window placement, use of outdoor “rooms,” construction of roof terraces, and the like.

“...an architecture must grow out of the problems, restrictions, and potentialities of the site... Any attempt of a designer to compete in grandeur with this site is doomed to failure... color and texture will be as important as form.

“There must not be any cliché type of stylized “modern” architecture. The site, the program, and the unparalleled opportunity to start from scratch all argue against the use of any standard, tired building types, either traditional or modern.

“Buildings averaging no more than three stories can meet the initial needs of the campus. Later, as the site becomes highly utilized, more intensive use of the land will be required to preserve trees and maintain open areas. It will probably be necessary to rise gradually to an average of six stories. Any architectural approach adopted in the early buildings must be compatible with higher rise buildings to be erected later.”

1963 Long Range Development Plan

- Design buildings to respond to both the natural and the built elements of UCSC’s complex visual environment, reflecting its variety and richness without disrupting its cohesion.
- Integrate energy saving elements and carbon reduction strategies into each building.
- Use exterior building materials and massing that integrate visually with the surrounding landscape.
- Design buildings and other facilities within or adjacent to clusters, whether new or existing, using massing, height, materials, and color that relate sensitively to each other and to their natural surroundings.
- Visually screen service functions and delivery areas from public spaces and pedestrian ways.

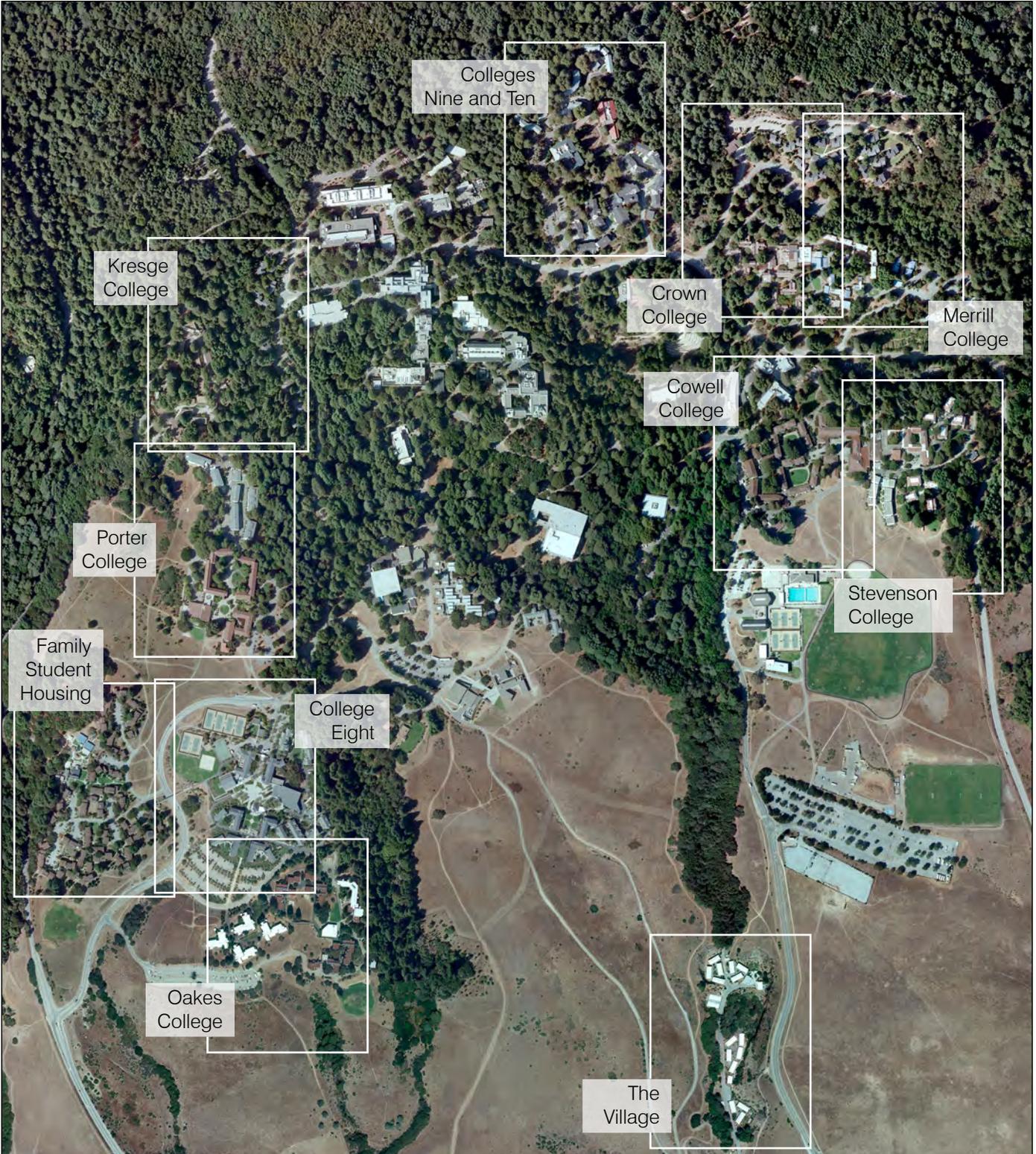
(See also guidelines for major landscape types beginning on page 30.)



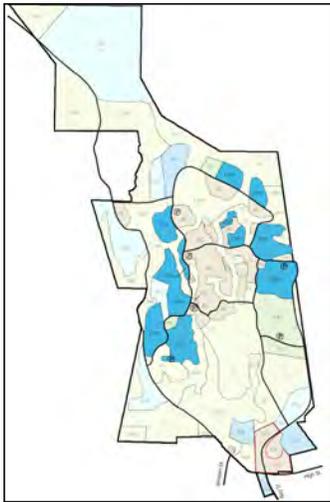
The Physical Sciences Building (top left) and the Digital Arts Research Center (top right) both use energy-saving solar shading devices.

The exterior elevation of Humanities and Social Sciences Building (at right) combines clear glass, cast-in-place concrete, gray metal siding, and natural cedar boards in a rich composition reflective of and responsive to its forest site.





i. The Colleges and Housing



Excellent examples of the site-responsiveness, richness, and variety resulting from UCSC’s founding architectural principles are evident in its ten residential colleges, which are illustrated on the next two pages. Built over the lifetime of the campus and true to the intentions of the 1963 LRDP, each includes buildings with varying functions—classrooms, offices, residence halls and apartments, eating facilities, lounges and recreation space—fitted carefully into the surrounding environment. Each college, in its own way, shapes a hierarchy of exterior spaces that foster and enhance personal interaction. The architect of each college sought, and found, a distinctive response both to local site characteristics and to the college’s programmatic requirements. The colleges’ human scale and individual responses to local landscape conditions are the best models for future campus development.

Originally intended to accommodate enrollments of 250 to 1,000 students, over time the colleges have expanded; each is now home to 1,400 to 1,500 undergraduates, with about half of that number living on campus. The colleges have been able to absorb that growth, and to respond to changing programmatic needs, by using a variety of strategies—gradual additions of faculty offices, conversion and modernization of student life and food service facilities, larger additions of student apartments at their perimeters—that also provide useful clues for future campus growth.

The 1963 LRDP was clear about the importance of differentiation among the colleges, both in their architectural characters and in their academic themes. That too has been a success: UCSC students can readily describe the distinctive personalities and distinct physiognomies of the ten colleges. Given the campus’s extraordinary range of physical environments, a similar range of highly individual college places is only appropriate.

“Enrich the academic experience for all students: Enrich the campus experience through the development of campus life facilities that support a variety of intellectual, educational, social, and recreational programs.

UCSC’s residential colleges will continue to provide supportive living/learning communities with a range of student services within the context of a major research university.”

2005 Long Range Development Plan
Physical Planning Principle:
Campus Life

“There must be a differentiation between the informality of the residential college groupings and the more formal and even sometimes almost monumental character of the central campus buildings. There must also be a differentiation among the colleges, since the Academic Plan makes a point of this fact in relation to the program for education.”

1963 Long Range
Development Plan

Guidelines for the Colleges and Housing

- Reflect the design of the existing college with infill buildings. Design them to create new, or to strengthen existing, public spaces.
- Design new building clusters, and infill within existing clusters, using a similar palette of massing, height, materials and color.
- Incorporate a mix of uses into new housing complexes, creating distinct “college-like” communities for living and learning.
- Emphasize pedestrian spaces and paths when planning building clusters. Open spaces should be destinations as well as focuses of the building clusters.

(See also the General Building Guidelines beginning on page 42.)

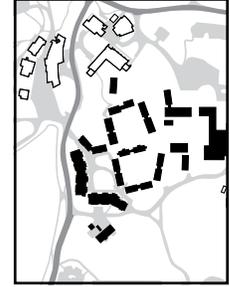
The Ten Colleges of UC Santa Cruz



Cowell College

Wurster, Bernardi, and Emmons, 1966

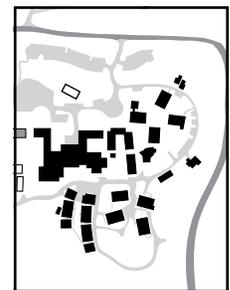
Cowell was the founding college of UC Santa Cruz. Its motto, *The Pursuit of Truth in the Company of Friends*, represents its twin commitments to academic endeavor and supportive community. Cowell's architecture is marked by white concrete walls and gently sloping red clay tile roofs. Terraced courtyards link the college's academic and residential zones, where seven residence halls surround two grassy quadrangles.



Stevenson College

Joseph Esherick and Associates, 1966

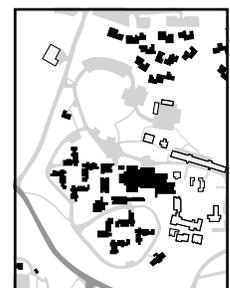
Stevenson's theme, *Self and Society*, links the past with the present to give students a greater understanding of themselves and their cultures, and to help them think globally. The college's academic buildings and its dining hall form two courtyards, one centered around a towering redwood cluster and the other around a stately coast live oak. Two clusters of four residence halls each are sited carefully between the site's original trees.



Crown College

Ernest J. Kump & Associates, 1967

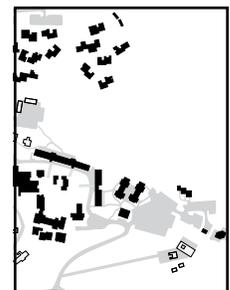
Crown's theme, *Science, Technology, and Society*, explores the relationship of science and technology with the world around us. This includes both the negative impact of some technologies on our environment and social institutions, as well as technology's use as a tool to improve our society. Crown's buildings form tightly clustered courtyards, intentionally recalling medieval monastic complexes.



Merrill College

Campbell & Wong, 1968

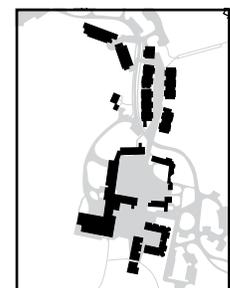
Merrill's theme, *Cultural Identities and Global Consciousness*, focuses on the relationship between the United States and the rest of the world to break down the barriers that divide cultures. Students study the struggles of peoples to preserve their cultural identity and current and past issues of global import. Sloping blue roofs and brightly colored stucco walls are the architectural hallmarks of Merrill College.



Porter College

Hugh Stubbins and Associates, 1970

Porter is a community influenced by art and artists' ways of being in the world. Porter's motto is *Ars Longa, Vita Brevis: Life is Short, Art Endures*. A single, large plaza unites Porter's two residence halls, while faculty offices and classrooms cluster around an intimate courtyard.

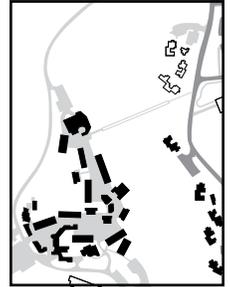




Kresge College

MLTW/Moore Turnbull, 1973

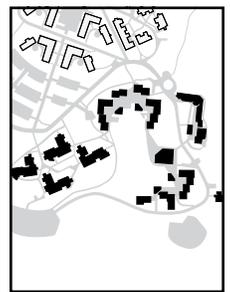
Kresge's theme, *Power and Representation*, provides an opportunity for students to work closely with the instructor and each other in a seminar setting. It is designed to improve new students' writing skills, introduce students to the expectations of UCSC faculty, and help build an academic community at the college. Kresge's design focuses all of the college's major activities along a winding "street," a contemporary reinterpretation of an Italian hill town.



Oakes College

McCue, Boone, and Thomsick, 1976

The Oakes College mission was developed in response to a need expressed by students themselves for a college devoted to the support and challenge of all students, but with particular attention to those from historically underrepresented groups. The only college with a meadow site, Oakes is clad in cedar shingles that blend with the rolling hills that form its foreground.



College Eight

Simon Martin-Vegue Winkelstein Moris, 1989

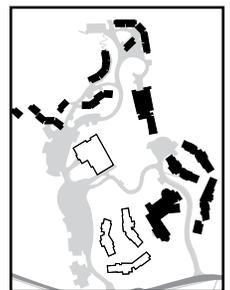
College Eight's theme, *Environment and Society*, embodies the college's concern for environmental issues within a social, political, scientific, and humanistic context. A large, south-facing plaza forms the "heart" of College Eight, providing views over residence halls and neighboring meadows to the Pacific Ocean beyond. Gray wood siding with white trim give College Eight something of the character of a New England fishing village.



College Nine

Esherick Homsey Dodge and Davis, 1994, 2000, 2002

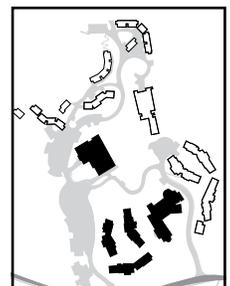
College Nine's theme, *International and Global Perspectives*, focuses on issues such as economic globalization, world hunger, environmental degradation, human rights, and international and ethnic conflicts. College Nine's segmented buildings weave among giant redwood stands and form three major spaces: a sunny courtyard at the center of its three residence halls, a winding "street" among its student apartments, and a small meadow which it shares with College Ten.



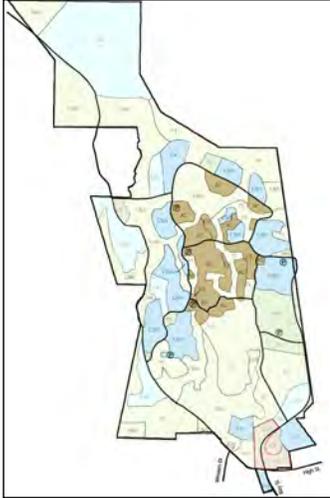
College Ten

Esherick Homsey Dodge and Davis, 1995, 2002

College Ten's theme, *Social Justice and Community*, focuses on issues such as discrimination, poverty, social injustice, and community involvement. The College Ten academic building is surrounded by majestic redwood clusters, at the edge of the meadow that links it to College Nine. Its three residence halls nestle among other redwood giants and define a terraced courtyard.

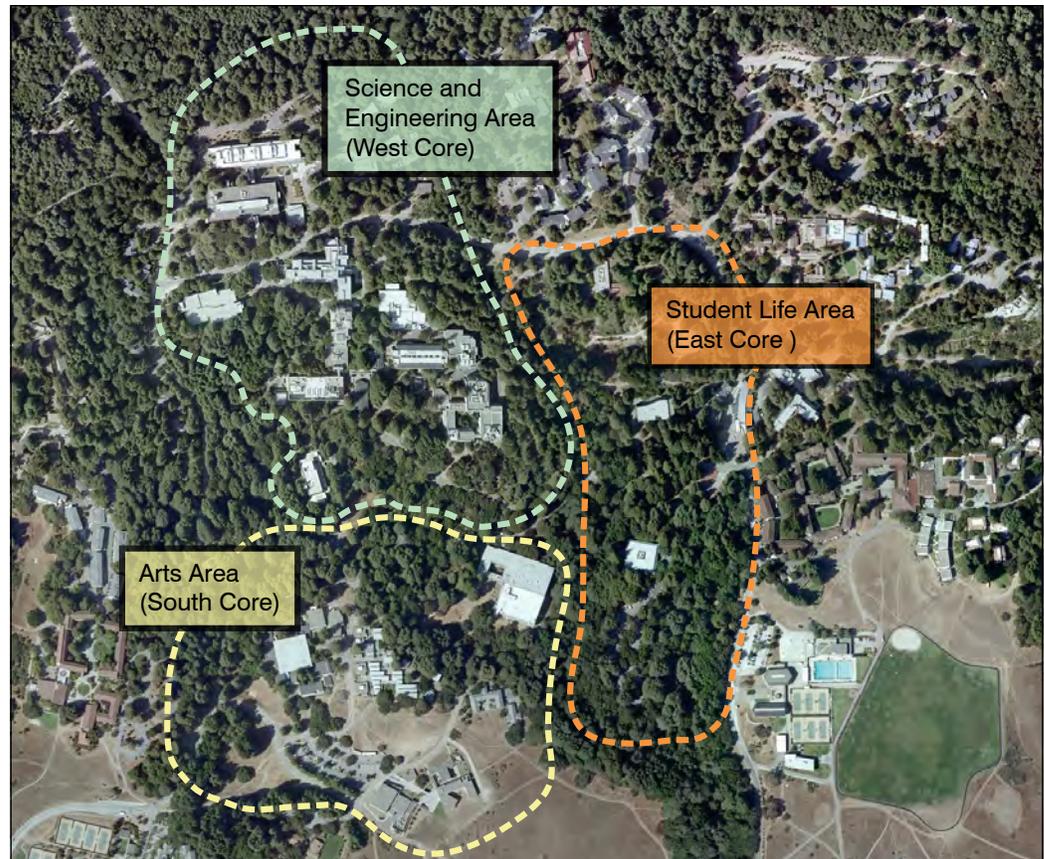


ii. The Campus Core



UCSC's fundamental development pattern was established in the 1963 *LRDP*: a "core" of institutionally scaled buildings—libraries, lecture halls, laboratories and other research facilities, art studios and performance venues—surrounded by smaller scale groupings of residential colleges and housing. The 2005 *LRDP* continues this pattern, designating developable land in the campus core as either "Academic Core" or "Campus Support." The developed campus core has McHenry Library, the "intellectual heart" of the campus, at its center, surrounded by the Science and Engineering Area to the west, the Arts Area to the south, and a cluster of student-oriented facilities to the east. The 2005 *LRDP* also designates three areas of land north of the developed campus as Academic Core; these are discussed on page 62. Areas of ravine and forest designated "Protected Landscape" separate the core's building clusters and the library. The "ladder" of roads and "warped grid" of pedestrian paths knit these areas together.

The campus core contains specialized or unique facilities and activities that are best shared by the entire campus. Thus, this area is UCSC's "downtown," a group of pedestrian-oriented places nestled in the forest and easily accessible to surrounding colleges, that draws members of the campus and Santa Cruz communities together for instruction, research, study, and interaction. The core has always been conceived of as the densest area of development on the campus, and under the 2005 *LRDP* it will be further densified by infill development. The forest within and around the core



[Links to Selected Studies and Plans](#)
Core Capacity Study, 2003

Buildings in the campus core, from left to right: the Science and Engineering Library, the Theater Arts Complex, and the Bay Tree Bookstore and Quarry Plaza.



"Maintain UCSC's core configuration. Development will follow UCSC's traditional land-use pattern, which is a core of academic and administrative buildings surrounded by the residential colleges and other housing and support facilities. This pattern facilitates pedestrian and bicycle travel and maximizes interaction among members of the campus community. New colleges will be located as close to the core as possible without compromising sites for future academic and research facilities."

2005 LRDP Physical Planning Principle - Land-Use Patterns

"The separated activities of the colleges and schools will be brought together in a campus academic core... around the library, and where campuswide administration spaces will be located. The University Library "the intellectual heart of the Santa Cruz campus" will be centralized"

"The core of the campus, containing the library, the central academic area and the administrative headquarters, should be centrally located for accessibility to the public and to the rest of the campus, and at the same time should command a wide sweeping view of the land and seascape, not blocked in the foreground by other structures."

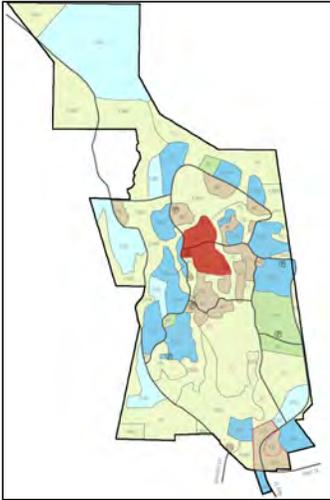
1963 Long Range Development Plan

is of major importance: its integrity and function will be maintained and enhanced as a model of how human development and a natural environment can coexist.

Guidelines for the Campus Core

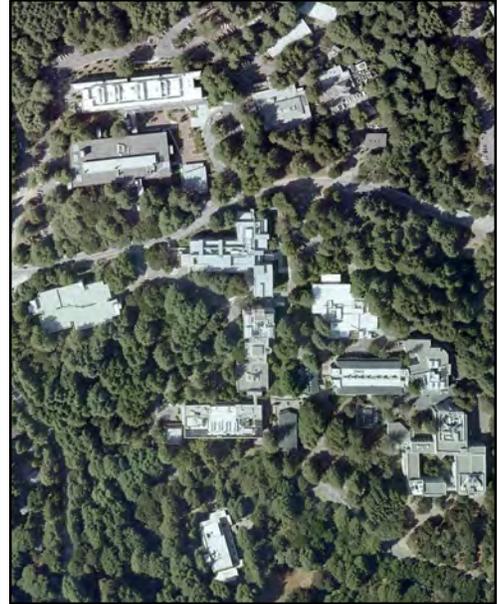
- Site new buildings to create or enhance distinct clusters, each with at least one sunny public open space or courtyard that encourages congregation and activity, especially in forested areas.
- Design new buildings to create a sense of architectural cohesion with existing structures nearby.
- Retain a lattice of tree canopies and natural understory to provide aesthetic continuity and wildlife corridors between the ravines and among development clusters.
- Reduce and manage vehicular traffic along McLaughlin Drive in order to improve the pedestrian experience there.
- Knit the building clusters together with a "ladder" of east-west roads stepping up the hill (Meyer, Steinhart, McLaughlin, and Chinquapin Drives) and a "warped grid" of major footpaths that connect all colleges together and connect the colleges to the core. Use building clusters to define the pedestrian system of major pathways and plazas extending the campus grid of public walks.

(See also the General Building Guidelines beginning on page 42.)



Sciences and Engineering Area

The area of campus informally called "Science and Engineering Hill" is defined by the middle branch of Jordan Gulch on the east, Kerr Meadow on the south, Heller Drive on the west, and extensions of Moore Creek and Jordan Gulch on the north. It includes the campus's most heavily used and technically specialized academic research facilities. It is, and will remain, one of the most urbanized places on campus; the principal site of UCSC's science and engineering research buildings, the Science & Engineering Library, and Clark Kerr Hall, UCSC's central administration building. It is an area of heavy pedestrian and bicycle circulation.



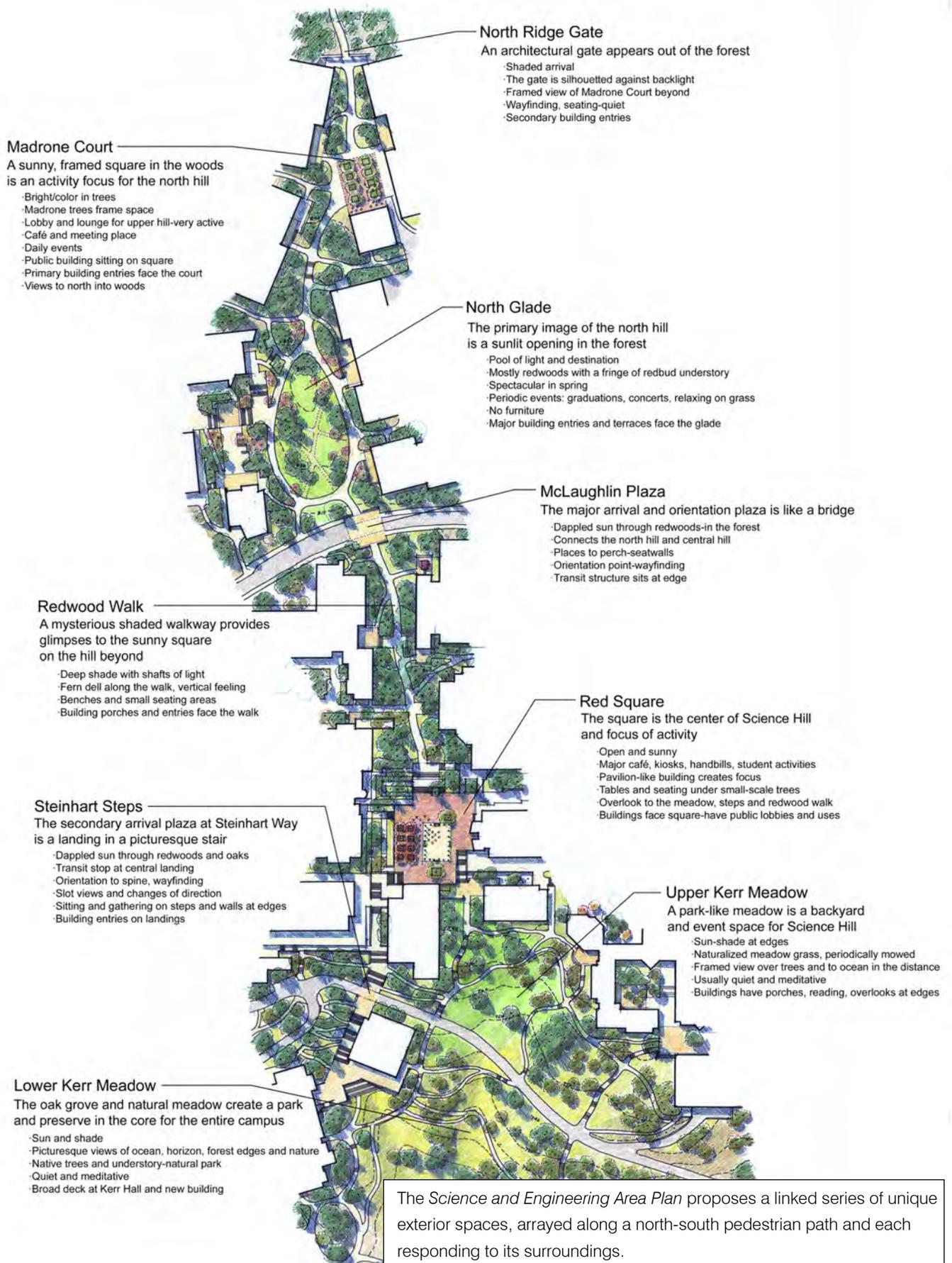
A *Science and Engineering Area Plan* was completed in early 2005. Elaborating on the existing north-south pedestrian path that links science and engineering facilities in the West Core with the arts buildings in the South Core, the plan identifies sites and proposes a building pattern with the potential to accommodate nearly a million gross square feet of new infill construction. Taking its cues from both the natural and built environments, the plan envisions "a distinct sequence of urban and natural spaces" that would link both new and existing buildings, engaging them directly with adjacent outdoor space.

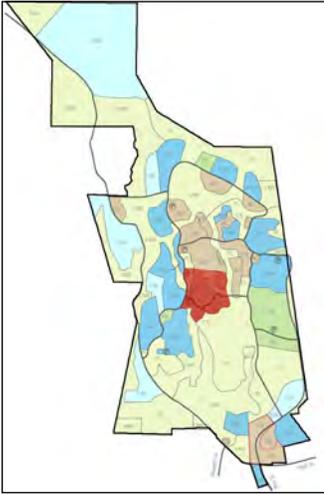
Guidelines for the Sciences and Engineering Area

- Strengthen the north-south pedestrian spine, siting buildings and their main entry points so as to create a hierarchy of distinct outdoor spaces, as illustrated on the opposite page.
- Reserve ravine edges for smaller structures to limit visual encroachment on the ravines, and to maintain their ecology.
- Maintain service functions at the perimeter of the area to limit pedestrian-vehicular conflicts.

(See also the General Building Guidelines beginning on page 42.)

Links to
Selected Studies and Plans
Science and Engineering Area Plan, 2005





Arts Area

Bounded by Kerr Meadow to the north, the east branch of Moore Creek to the west, the Great Meadow to the south, and the middle branch of Jordan Gulch to the east, the Arts Area contains many of the destinations accessed by members of the general public visiting the campus, including performance and display venues, visual arts facilities, University House (the Chancellor's residence), and the ARCenter (Academic Resource Center). Near its south-eastern edge is the vehicular route to the McHenry Library. The landscape of the area is particularly complex, including each of the major campus landscape types: forest and forest



edge, meadow, and ravine. The setting of many of its buildings, at the edge of the forest looking south over the Great Meadow toward Monterey Bay and the Pacific Ocean, affords spectacular views from many of the places where the campus and the community gather.

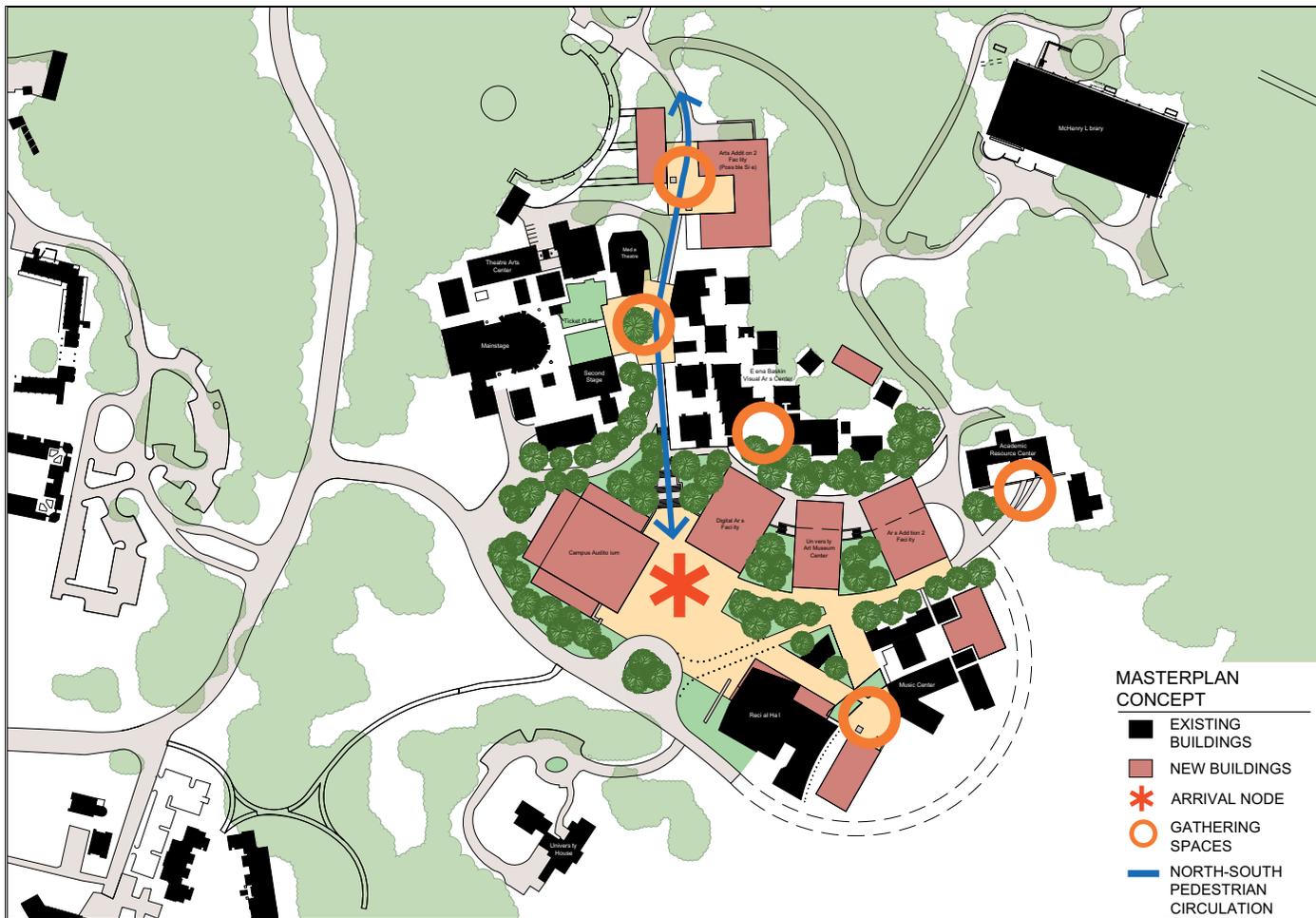
This area was studied in detail in an *Arts Area Plan* published in May 2004. Like the *Science and Engineering Area Plan*, it proposes to site buildings so as to create a series of public spaces adjacent to the north-south pedestrian route that links the Sciences and Engineering and Arts Areas. It identifies the existing surface parking lot in the center of the area as a potential infill site for new larger-scale arts facilities.

Guidelines for the Arts Area

- Maintain a clear meadow boundary when siting buildings near the Great Meadow, keeping the height of any development lower than the forest backdrop when viewed from downhill vantage points.
- Cluster facilities to create space for public and social events, for study, practice, rehearsal, and instruction, separating incompatible uses as appropriate. Capitalize on the Arts Area's remarkable surroundings and magnificent views to create public spaces to attract and delight campus visitors and members of the community alike.
- Strengthen both vehicular and pedestrian routes to the theaters, galleries, and other public spaces, using roads, pathways, lighting, and signage to direct visitors, to the appropriate destination. Create bright and distinctive entry areas for theaters and other public spaces.

Links to
Selected Studies and Plans
Arts Area Plan, 2004

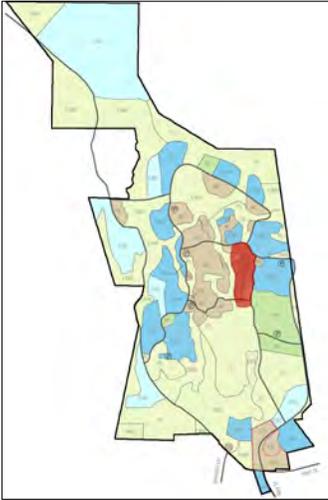
(See also the *General Building Guidelines* beginning on page 42 and the *guidelines for meadow areas* on page 31 and for the *forest edge* on page 34.)



The Arts Area Plan extends the north-south pedestrian route from Science and Engineering Hill (above) through a linked set of exterior spaces, with the intention of creating a lively arts village set against the forest edge (right).



Student Life Area



The east core is a primary location for student services and campus-serving commercial enterprises. It is also a major transportation hub, traversed by heavily traveled pedestrian, transit and shuttle, and bicycle routes. Defined by McLaughlin Drive on the north, the middle branch of Jordan Gulch on the west and south, and Hagar Drive on the east, it includes several important historic industrial areas that have been transformed into student gathering places. Most notable among them are Quarry Plaza, a lively outdoor space between the Bay Tree Bookstore and Graduate Commons buildings, and the Quarry Amphitheater, dramatically sited in one of



the Cowell Lime and Cement Company's major quarries. The area's outdoor spaces, defined by sheer rock walls and rocky outcrops left by early limerock quarrying retain a powerful sense of forest and ravine. Jordan Gulch, which drops away south of Steinhart Way, connects the historic quarry areas with the industrial routes and features of the historic lime works in the lower campus.

The east core also includes three student-oriented buildings not part of larger complexes. Classroom Unit 1, about 100 yards west of Quarry Plaza, holds two of the campus's largest lecture halls. The Hahn Student Services Building stands alone on a narrow peninsula of land bounded east and west by two branches of Jordan Gulch; it contains a number of student services offices. The Cowell Student Health Center is located on a relatively isolated site northwest of Quarry Plaza, bounded by quarry cliffs to the south and deep ravines east and west; access is from McLaughlin Drive.

A Student Life Facilities Planning Study, completed in 2003, explored alternatives for improving and expanding student facilities in this area as a means of building on its vitality and intense activity. The study recommended improvements to the Quarry Amphitheater that would include a small "pocket park," a sunny green space available for campus enjoyment on the many days that the amphitheater is not in use. It also recommended that parking, service, loading, and transit services should be moved out of Quarry Plaza, and that their requirements be met with minimal land area, in order to improve and increase the availability of space for student uses.

Guidelines for the Student Life Area

- Plan for phased development, with each phase able to function independent of subsequent phases, without foreclosing future opportunities.

- Maintain the sense of Quarry Plaza as a pedestrian destination and transportation hub. Design new buildings surrounding Quarry Plaza to shape active outdoor public spaces.
- Design new buildings adjacent to Quarry Plaza to fit the scale and character of the existing complex and the historic character of its site by articulating their separate elements and avoiding massive buildings and a vast open plaza.
- Explore the potential of adding bridges to create a “triangle” of student serving areas: Quarry Plaza, the OPERS East Field House Complex, Hahn Student Services, ARCenter, McHenry Library, and the Classroom Unit.
- Integrate approaches, support facilities and entry to the Quarry Amphitheater with development in and around the Quarry Plaza. Design improvements to the Quarry Amphitheater to defer to the scale, character, and form of the historic quarry.
- When planning development near the upper edges of the quarry consider the effect of views from the Quarry Amphitheater on its historic character.

Links to
Selected Studies and Plans
Student Life Facilities Planning Study,
2003

(See also the *General Building Guidelines* beginning on page 42.)

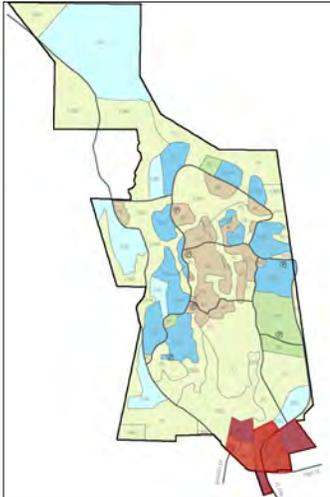
The volume of the Bay Tree Bookstore (at right) was broken into smaller elements to maintain the scale and character of Quarry Plaza.



The Hahn Student Services Building (right) and the Quarry Amphitheater (far right).



iii. Main Entrance



Rich in historic resources, the Main Entrance area—the campus’s “front door”—provides the first impression of UC Santa Cruz for visitors, nearly all of whom pass through the intersection of Bay and High Streets on their approach to the campus. Marked by nineteenth century ranch buildings from the Cowell Ranch and Lime Works operations, this complex provides a window into the history of the campus’s lands and of the Santa Cruz region prior to the University’s creation.

The Cowell Lime Works Historic District

The 2005 LRDP land use plan includes the Cowell Ranch Historic District as an overlay district encompassing cultural resources of particular significance from the original Cowell Ranch. This 30-acre complex of buildings, features and structures arrayed around Coolidge Drive, form the core of the Cowell Ranch, a nineteenth century lime manufacturing and ranching operation. The complex includes agricultural and industrial structures—a row of lime kilns, remnants of a railway, several large wood-frame barns and other agricultural support buildings, a cooperage, a granary, and assorted small outbuildings—as well as a number of domestic buildings, including workers’ cabins, the ranch cookhouse and carriage house, and the owner’s house. Taken as a whole, the district provides a revealing and valuable picture of nineteenth century work and life on California’s central coast.

In 2007 the area was listed on the National Register of Historic Places as the Cowell Lime Works Historic District. As part of the listing process, the campus prepared a *Draft Cultural Resources Management Plan for the Cowell Ranch and Lime Manufacturing Historic District* that includes detailed guidelines, strategies and recommendations for the long-term management of the historic district. Buildings that have been determined not to be contributors to the historic district due to loss of integrity through adaptive reuse will be preserved, and the campus will take advantage of opportunities provided by future maintenance, remodeling or seismic upgrades to improve the historic integrity of their appearance through limited restoration. Although many of the Cowell Ranch structures that have not been adapted for current use have seriously deteriorated, they are highly valued by many members of the local community, some of whom have established *Friends of the Cowell Lime Works*, an official campus support group dedicated to their restoration.

“Protect historic and prehistoric cultural resources: UCSC will protect recorded archaeological sites from development and protect historic resources through reuse or adaptation of structures in the Cowell Ranch Historic District.”

2005 LRDP Physical Planning Principles - Natural and Cultural Resources

“Since its earliest years the City [of Santa Cruz] has been an agricultural trade center, and after 1850 lumber and lime production became important local industries. The first Santa Cruz wharf was built in 1853, and from it was shipped lime produced in a kiln operated at the upper end of Bay Street. This enterprise became the Cowell Lime and Cement Company - the source, in a later period, of the funds for the Cowell Foundation, from which a part of the Cowell Ranch (the campus site) was acquired.”

1963 Long Range Development Plan

Guidelines for Areas in and near the Historic District

- Preserve the historic buildings and landscape around the campus entrance as important remnants of local history, emblematic of the historic use of the site. Protect the historic



integrity of the structures by matching program uses to historic structures to avoid alterations that adversely affect the historic character of the district.

- Follow the Secretary of the Interior’s guidelines and standards for historic rehabilitation and restoration when undertaking any maintenance to or alteration of any of the historic buildings that contribute to the National Register eligibility of the historic district. Conduct any excavation within the historic district and in some adjacent areas under observation by a qualified archaeologist.
- Improve and enhance compatibility of circulation routes with the historic appearance of the district. Minimize new parking and paving in the area, and reduce the visual impact of parking and paving already there.
- Preserve and enhance landscape setting elements that contribute to the district’s historic feeling and association. Avoid introduction of incompatible ancillary elements (e.g., fences, lights, signs, site furniture).
- Preserve significant vistas in order to retain the historic landscape character. Retain the architectural character and spatial relationships among buildings and features that have a high degree of historic integrity.

Links to Selected Studies and Plans

Cowell Ranch, Revised Draft Historic District Evaluation, University of California, Santa Cruz. 2002.

Baseline Inventory Report for the UC Santa Cruz Campus. 2005.

List of Historic Structures and Historic Context Statement for UC Santa Cruz. 2005.

Draft Cultural Resources Management Plan for the Cowell Ranch and Lime Manufacturing Historic District. 2006.

LEGEND

-  Cowell Lime Works Historic District
-  Employee Housing
-  Ranch View Terrace
-  Hagar Meadow Townhomes
-  Cardiff Terrace Townhomes
-  Hagar Court Condominiums
-  Laureate Court



Campus Support

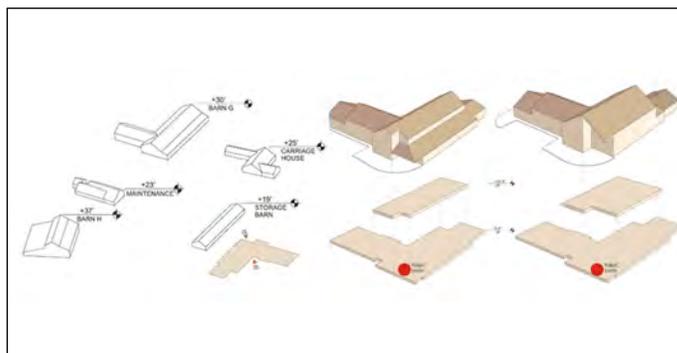
When campus operations began in the 1960s, a number of the historic buildings associated with the early Cowell Ranch operations were adaptively reused by the University. Along with a number of buildings designed to be compatible with the original ranch buildings, they now house campus service functions, including central receiving, physical planning and construction, physical plant, admissions, University police, and transportation and parking services. Although it is not part of the listed historic district, siting and design of buildings in this area will be designed to maintain the spirit and character of their surroundings.

Guidelines for the Campus Support Area

- Site new buildings and design their height and massing to minimize visibility from the main entrance. Design those structures that are visible from the main entrance using massing, height, materials and color that are compatible with existing features.
- Site new buildings in distinct clusters framing informal courtyard spaces similar in character and scale to the courtyard and garden at the Carriage House and Cardiff House.
- Use landscape screening to visually screen service operations from Cardiff House, the Carriage House, and major pedestrian routes.
- Plan vehicular access to service facilities to be efficient and to minimize conflicts with bicycles, pedestrians and private vehicles.

Links to
Selected Studies and Plans
Corporation Yard Planning Study. 1996.

Design studies (at right) for the new Emergency Response Center (at far right) helped reduce the new building's visual impact and ensured that its massing, height, and roof lines would be compatible with its historic setting near the campus's main entrance.





Employee housing:
 (above) Laureate Court
 (above right) Cardiff Terrace
 (right) Ranch View Terrace



Employee Housing

Around the main entrance are three land areas designated as Employee Housing (EH) in the 2005 LRDP: These accommodate the campus’s current stock—228 units—of employee housing, both for-sale¹ and rental units:

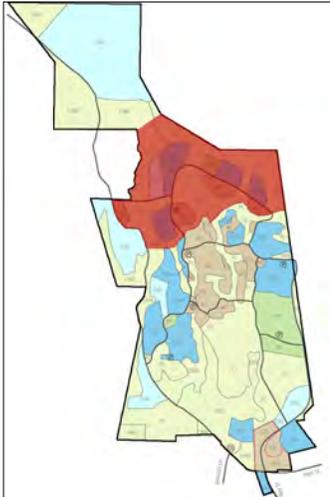
- At the southwest corner of Bay and High Streets is Laureate Court, which includes 12 condominium units and 51 rental apartments.
- West of Coolidge Drive is Ranch View Terrace, with 45 for sale single family homes built in the first phase of construction; an additional 39 homes are being planned for subsequent phases of construction.
- East of Coolidge Drive are Cardiff Terrace Townhomes (50 units), Hagar Meadow Townhomes (19 units), and Hagar Court Condominiums (50 units), all for-sale housing.

Links to
 Selected Studies and Plans
Cardiff Terrace Architectural Guidelines,
 2003
Hagar Court Architectural Guidelines,
 2004
*Ranch View Terrace Architectural
 Guidelines and Design Standards*, 2009

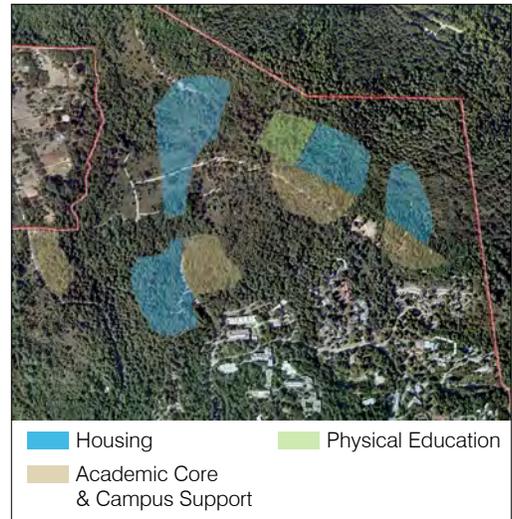
Home improvements in each of these areas is governed by a set of architectural guidelines enforced by an Architectural Review Board, consisting of representatives of the appropriate homeowners association and members of University staff.

1. The land is leased from the University; the faculty or staff homeowner owns the improvements.

iv. The North Campus



To accommodate facilities needed for anticipated growth, and to provide the flexibility needed to respond to future circumstances, the 2005 LRDP, like previous LRDPs, includes areas north of existing development. UCSC's traditional pattern of development—building clusters surrounded by unbuilt landscape—will be continued in these areas. Of the approximately 370 acres in this area, shown in red on the campus map to the left, 62 acres are designated for Academic Core (AC) or Campus Support (CS) land use, 54 acres are designated for Colleges and Student Housing (CSH) or Employee Housing (EH), and 10 acres are designated for Physical Education and Recreation (PE).¹ The 2005 LRDP estimates that only about 35% of its projected growth will occur in these areas.



The north campus is vegetated primarily with mixed evergreen forest, but it also contains a band of chaparral vegetation with dense large shrub stands of manzanita, ceanothus, oaks, and knobcone pine, as well as several localized and ecologically unusual or regionally uncommon plant communities, including coastal prairie and vegetation habitats that have developed around forest springs or seeps. The 2005 LRDP land use plan designates these areas as either Campus Natural Reserve (CNR, 152 acres) or Protected Landscape (PL, 92 acres).

Just as the 1963 LRDP established the character of today's campus, initial development of the north campus will set the model for the future. Accordingly, detailed area planning² will precede any development in the north campus, and will be guided by this *Physical Design Framework*, its five underlying concepts, and its planning and design guidelines:

- **Major Landscape Types.** The north campus contains several vegetation types and soils and geotechnical conditions which are not found to the south, but which do fall within the three landscape types—meadows, forests/forest edge, and ravines—described in this *Framework*. The area plans will develop specific design guidelines as appropriate for each such area.
- **The Core-College Configuration.** The 2005 extends the underlying concept of an academic core surrounded by colleges and housing into the north campus. Each of the Academic Core areas in the north campus is paired with land designated for Colleges and Student Housing, providing considerable flexibility in siting, and creating imaginative

1. For a detailed description of the land use designations in the 2005 LRDP, see Appendix C beginning on page 86.
2. See page 5 for a discussion of UCSC's area planning process.

relationships among, future academic buildings and residential facilities.

- **Building in Clusters.** Buildings within each development area will be clustered, maintaining UCSC’s practice of surrounding built areas with open space.
- **“Ladder of Roads”.** The 2005 LRDP proposes a future loop road connecting the existing Chinguapin Road on the east side of campus with Heller Drive to the west, creating the northernmost “rung” in the campus’s “ladder of roads.”
- **“Warped Grid” of Paths.** As illustrated in the diagram on page 69, north campus development will rely on an extension of paths and bridges—the “warped grid”—to provide convenient connections to the existing campus to the south.

Future planning and development of the north campus will be informed by the campus’s strong commitment to sustainability, particularly with regards to site development, and will be an opportunity to plan and build a model of innovative “green” development that includes sustainable landscape restoration and management practices.

Links to
Selected Studies and Plans
Growth and Stewardship Planning, 2001

*Diagram at right:
The 2005 LRDP extends UCSC’s
long-standing physical structure of
an academic core surrounded by
colleges and housing into
the north campus.*



Views of the north campus:

Red Hill Road (far right)

*Chaparral vegetation at the
intersection of Fuel Break and
West Roads (below)*



c. Roads and Paths

"Promote a walkable campus: To the extent possible, the campus will provide new pathways and improvements to existing pathways to enhance the "walkability" of the campus. Improvements for bicycles and transit, combined with frequent internal shuttles and connecting off-campus bus service, will facilitate campus pedestrian circulation.

"Discourage automobile use to and on the campus: UCSC will continue to expand its comprehensive program of Travel Demand Management strategies to encourage alternatives to single-occupant vehicle use. New bike routes and bike parking will be developed to encourage bike travel around campus.

"Consolidate parking facilities at perimeter campus locations: To promote non-automobile transportation options in the core, the campus will continue to encourage the use of peripheral parking facilities with frequent shuttle service."

2005 LRDP
Physical Planning Principle

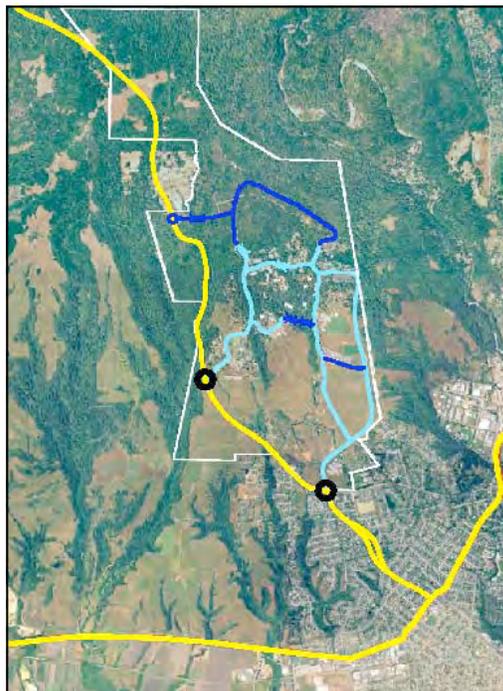
"TRANSIT SYSTEMS. It is strongly recommended that a transit system be instituted, to connect the campus with the City of Santa Cruz. Such a transit system...will be necessary in order to minimize use of individual automobiles and allow the campus roads to remain relatively narrow thoroughfares."

1963 Long Range
Development Plan

The experience of moving across the UC Santa Cruz campus can be a delight. Pedestrian paths weave through a variety of landscapes—beneath towering redwoods, into dark, cool ravines, and through sunny and sweeping meadows. A ride down the Great Meadow bicycle path is exhilarating, revealing expansive views of Monterey Bay to the south. A southbound route on Coolidge Drive or a westbound route on Heller Drive reveals broad panoramas over meadows, cityscape, coastline, and ocean to the horizon beyond. In contrast, campus circulation can be frustrating in the extreme: hunting for a parking space or leaving campus at the end of a work day frequently results in resigned exasperation.

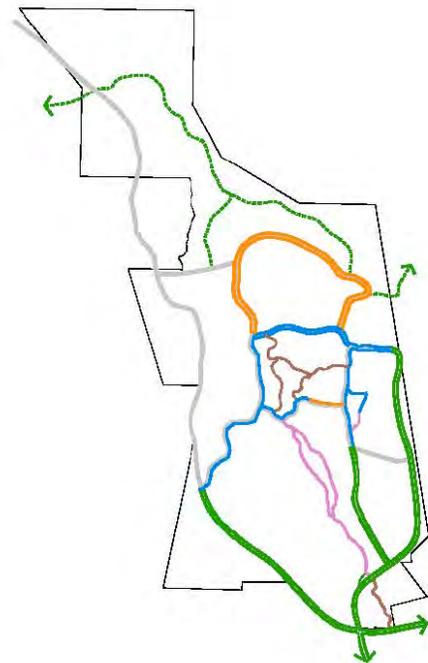
UCSC's transportation planning focuses on untangling the knotty problems of traffic and parking without compromising the pleasures of moving around the campus. By concentrating on parking management policies and Travel Demand Management (TDM) programs—encouraging a variety of transportation options, emphasizing travel modes that do not require driving a private vehicle, limiting construction of new parking until existing parking is efficiently used—UCSC has been able to reduce its traffic generation rates significantly. As a result, they are well below those of other comparable universities and of the Santa Cruz region in general.

UCSC's location at the edge of the urban fabric of Santa Cruz makes integrated transportation planning essential. To that end, the 2005 LRDP proposes a comprehensive transportation system, combining improved campus connectivity, parking collection points, transit hubs, and pedestrian and bicycle-focused routes. Its physical manifestation relies on two simple patterns described in the *Framwork's* "Unifying Concepts": a "ladder" of cross-campus vehicular roads and a "warped grid" of



VEHICLE ACCESS

illustrations from 2005 LRDP



BICYCLE CIRCULATION

Two of UCSC's unique transportation programs that encourage alternatives to the single-occupant automobile: car share (left) and the bike shuttle (far left), which allows cyclist to have their bicycles pulled uphill to campus in the morning and enjoy a pleasant ride downhill that afternoon.



pedestrian paths through the campus. A clear, well-integrated circulation system will make wayfinding easier for visitors and the campus community alike.

Given the campus commitment to reducing the effects of development on the landscape and UCSC's rugged, varied terrain, developing a safe, well-integrated circulation network that serves vehicles, bicycles, and pedestrians well is a particular challenge. Appropriate solutions must be determined on a case-by-case, site-specific basis: in some locations, separating the transportation modes will be the best solutions; in others, developing safe, shared routes will reduce the amount of paving and grading required.

Guidelines for the Circulation Network

- Integrate circulation planning and phasing with development of the facilities that the roads and paths will serve. Align future roads and paths to allow flexibility of land use. The circulation system should encompass and unify the land, not dictate its use.
- Extend the "ladder" of roads and "warped grid" of paths to serve future development to the north.
- Adapt roads, paths, and bridges to their terrain and to nearby dominant trees. Use grading and planting to screen road alignments, particularly through sensitive viewsheds. Where possible, align roads and paths to reveal and emphasize unique and character defining landscape elements: special plant communities, limestone outcroppings, views, etc.
- Consolidate parking in collector facilities at the periphery of the central campus, in locations well served by public transit and campus shuttles.
- Integrate planning for bicycle use into area plans and project design, including solutions like conveniently located bike parking areas, showers for cyclists distributed around campus, and easy access to transit and pedestrian routes.
- Use Low Impact Development Best Management Practices (LID BMPs) in siting, designing, and building roads, paths, and parking areas.

Links to Selected Studies and Plans

Campus Transportation Planning Study for the UCSC LRDP. 1994.

City of Santa Cruz Master Transportation Study. 2003.

Bay Corridor Preliminary Feasibility Analysis Bus Rapid Transit. 2006.

University of California, Santa Cruz, 2008 Bicycle Plan

i. “Ladder” of Roads

“The vehicular circulation system in the 2005 LRDP is generally consistent with the 1988 LRDP. Several proposed roads identified in the 1988 plan are included in this plan to provide access to new areas of the campus, improve cross-campus connections, and improve the efficiency of shuttle access to parking facilities. These roads will also provide traffic relief on existing roads, creating safer pedestrian and transit-friendly areas.”

2005 LRDP

“Roads and paths are also an integral part of the landscaping. The roads have been laid out to conform as closely as possible to existing contours of the topography, not only to avoid unnecessary expense, but also to minimize unsightly cuts and fills. Where new earth work is necessary, indigenous planting will soften it as quickly as possible. Where bridges are required, they will be designed in congruity with the terrain. Parking areas will be kept unobtrusive through selection of their locations and by use of concealing trees and other planting.”

1963 Long Range Development Plan

To complete the “ladder” of roads stepping up the contours of the land and connecting the east and west colleges, the 2005 LRDP calls for a set of road improvements that include extension of Chinquapin Road at the northeast campus to a northern loop road connecting to the north end of Heller Drive in the west; an access road and bridge connecting the new loop road to Empire Grade; an eastern extension of Meyer Drive (via two bridges) from its current end at the Music Building to Hagar Drive; and a new road linking Hagar Drive to Coolidge Drive near the East Remote parking lot. The completion of this roadway system will create more compact and efficient bus and shuttle routes, improve bicycle access throughout the campus, and allow traffic restrictions on some road segments. Most parking proposed in the 2005 LRDP would be peripheral to the campus core. The result would be reduced vehicular traffic and improved bicycle and pedestrian safety in the campus core.

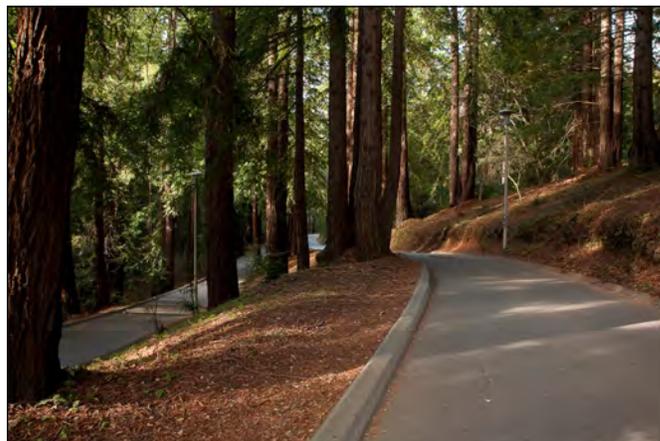
Guidelines for the Road Network

- Adapt roads, paths, and bridges to the terrain. Consider views and vistas, both towards and away from the roadway, when determining road alignments and developing grading plans. When possible, use road alignments to reveal unique, character-defining landscape elements.
- Use grading and planting to screen road alignments through sensitive viewsheds.
- Design roadways to include infrastructure (e.g., transit stops, lighting, turning lanes, bike lanes) necessary to support transit services and bicycle circulation.
- Site buildings and building clusters to allow shared use of service roads and delivery areas.
- Separate the service and delivery approaches to buildings from their main entrances and pedestrian routes to them.

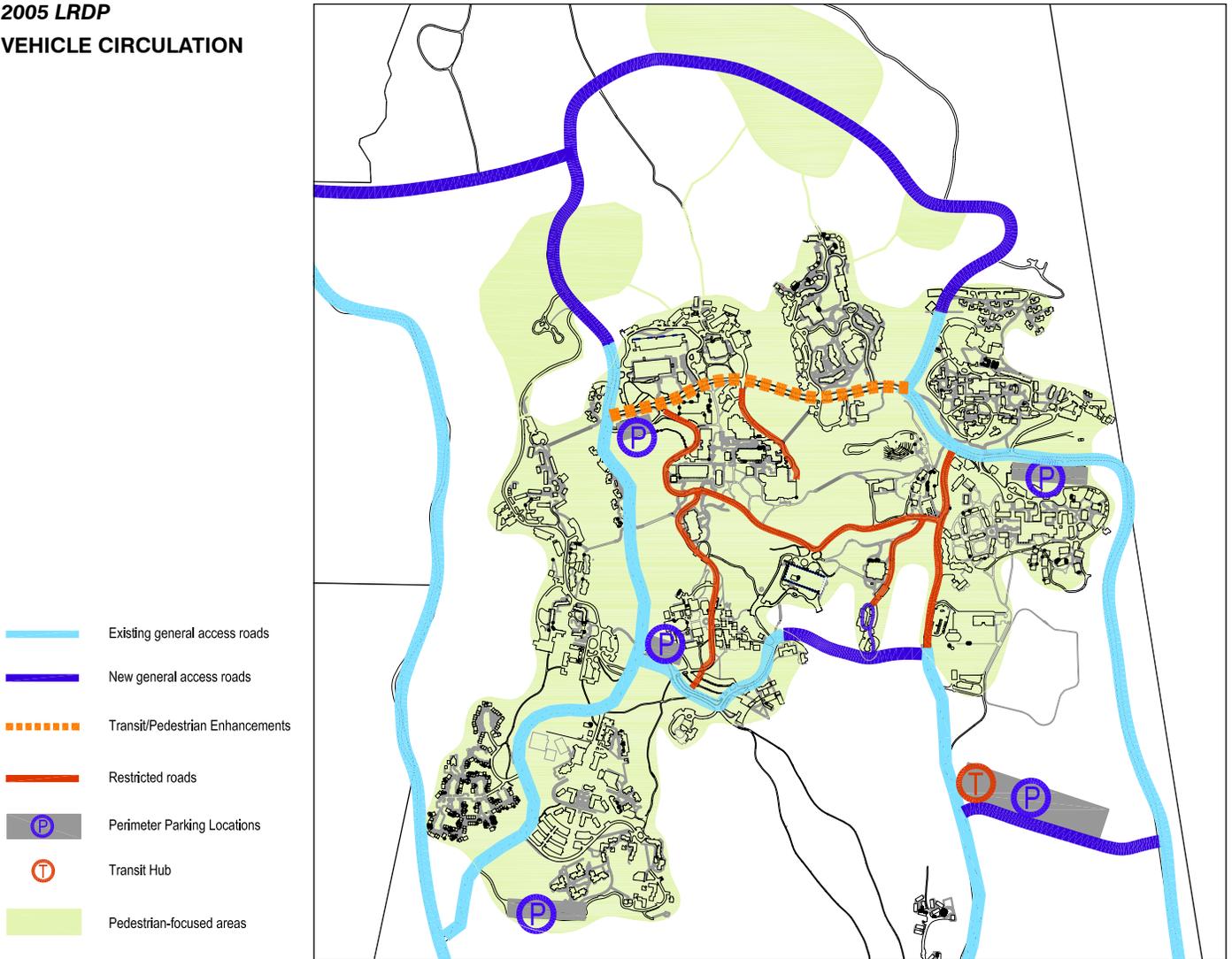
Steinhart Way (right), one of the original campus roads, splits its traffic lanes in response to local terrain and significant redwood clusters.

The Core West Parking Structure (far right) is a model of the campus strategy to site parking clusters in well-concealed locations at the periphery of the developed campus.

Heller Drive (opposite page), the campus access road via the West Entrance, fits the surrounding terrain with expansive views to the horizon beyond.



2005 LRDP
VEHICLE CIRCULATION



ii. “Warped-Grid” of Paths

“East/west pedestrian circulation patterns occur mostly at constant elevations. Bridges provide critical connections across ravines to fully integrate all program functions within the academic core and beyond to other areas of the campus. The landscape of the central campus, and its full pedestrian circulation system is an organic web of pathways, roads, and trails that can be understood as a “warped-grid” system.... The experience of walking through a mix of natural and developed areas gives the UC Santa Cruz its distinctive character.”

2005 LRDP

“Paths will lead off from the vehicular roads, both in the center of the campus and at other building locations. They will separate from the road system in a natural manner and be, for the most part, asphalt paved. Along these paths there will be not only pedestrian bridges and steps, from time to time, but such outdoor “furniture” as lights, benches, and railings, all of which will be planned and designed to blend with the natural landscape.”

1963 Long Range Development Plan

The best way to engage with the remarkable Santa Cruz campus setting is on foot, along UCSC’s complex network of pedestrian paths. Linking clusters of buildings and public spaces, the paths move between areas of intense development and activity, through more natural, undeveloped settings, as shown in the diagram on the opposite page, and from deeply shaded forested settings through sunny and bright clearings.

Paths that are safe, well-lit, and easy to traverse, with new bridges where necessary, will increase the efficiency of pedestrian circulation, reduce unnecessary motor vehicle use, and create opportunities for informal encounter and engagement. A completed path network will make it possible to walk to all major classrooms, the libraries and other academic and support facilities within 10 to 15 minutes from nearly everywhere on campus. Interpretive information on paths and trails will lead to deeper understanding and enjoyment of all the campus landscape types.

Guidelines for the Pedestrian Path Network

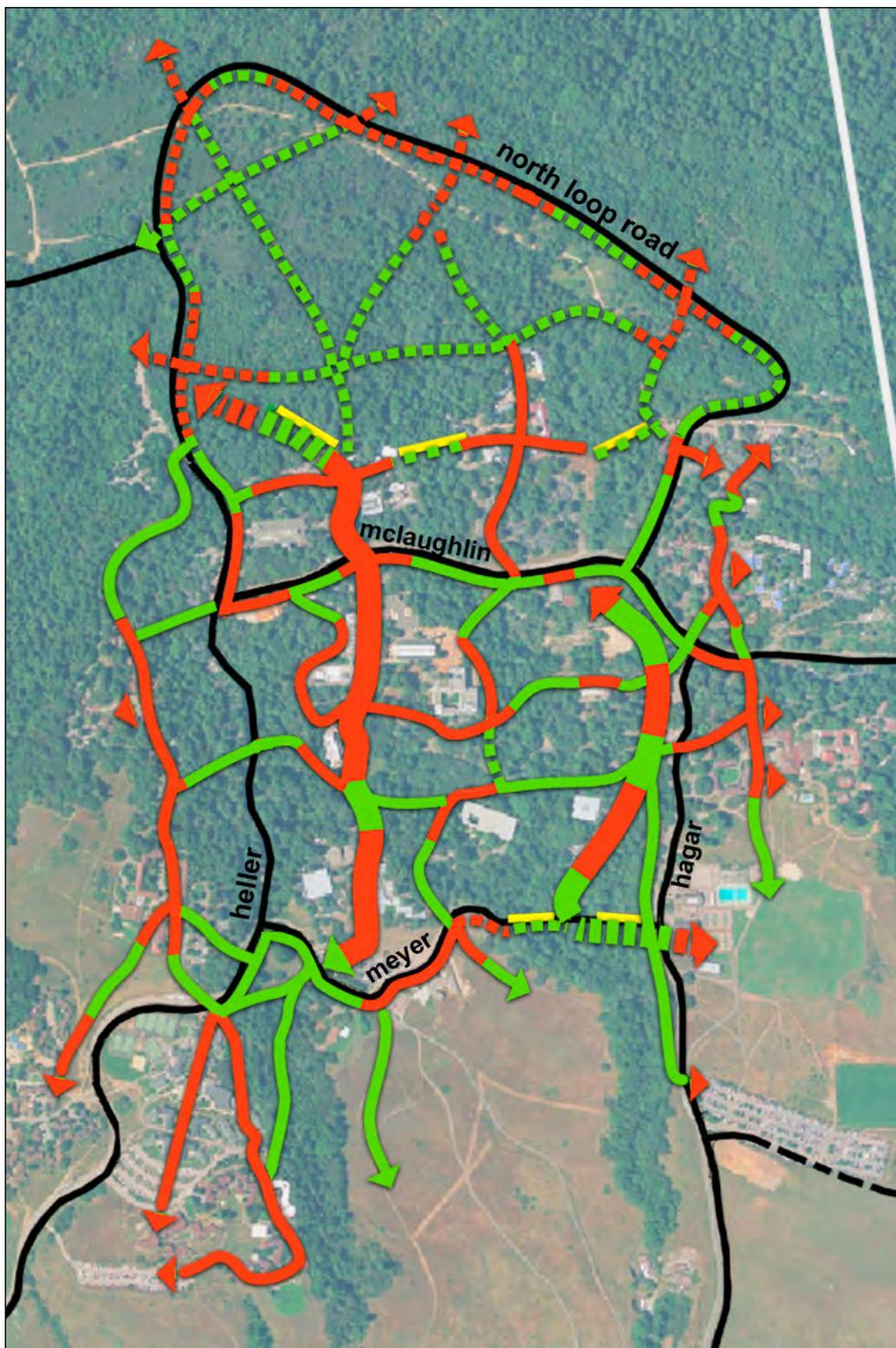
- Fill in gaps in the warped grid network of paths by maintaining east-west connections roughly on continuous contours, and routing north-south connections to result in gradual elevation changes. Reinforce pedestrian connections between the colleges and the core.
- Identify and develop a clear hierarchy of paths within the network, planning path width, lighting, signing and wayfinding devices, and similar pedestrian amenities to reflect anticipated pedestrian traffic. For instance, reinforce the north-south walk connecting Science and Engineering Hill and the Arts Area, extending it northwards as future development occurs.
- Plan paths and site and design building clusters to improve disabled access throughout the campus, particularly for wheelchair users.
- Design development to reduce pedestrian-vehicle conflicts, separating service and delivery functions from paths as much as possible.
- Strengthen pedestrian connections and provide wayfinding and safety information at transit stops to encourage walking and transit use.
- Create a clear sense of entry and arrival at building clusters.



2005 LRDP
PEDESTRIAN CIRCULATION
CONCEPT

LEGEND

-  New pedestrian bridges
-  Pedestrian paths through existing developed areas
-  Pedestrian paths through existing natural areas
-  Pedestrian paths through proposed development areas
-  Pedestrian paths through north campus natural areas



d. Infrastructure

The 2005 LRDP (pp. 88-91) discusses each of the campus's utilities systems—water, energy, sanitary sewer, storm drainage, data network and telecommunications, and central plant—and summarizes existing conditions, identifying potential utility line extensions and upgrades that will be necessary to support the campus's academic mission.



Careful siting and design of infrastructure elements in visible locations is essential to maintaining the visual character of the campus.

Comprehensive infrastructure and utility planning is integrated into UCSC's capital planning and project delivery processes. Planning for each new building project includes a detailed review of infrastructure condition and capacity and, when necessary, an update of related utility master plans. The offices of Capital Planning and Space Management, Information Technology Services, Physical Planning and Construction, and Physical Plant have prepared and jointly maintain a comprehensive master list of infrastructure needs that ensures coordination of these efforts. Major infrastructure renewal, upgrade, and extensions are planned as capital projects for the campus.

Several themes will affect the infrastructure planning and development that will be accomplished under this *Framework*:

- The growing use of data intensive computing technology in all academic disciplines will require a robust data communications backbone and will have significant effect on campus electrical and cooling loads.
- UCSC's physical setting means that its storm water conveyance system is through natural drainage ways, both above and below grade, rather than through an underground system of pipes. Storm water regulations have been, and will continue to be, increasingly stringent; the will need to be considered in developing infrastructure plans and building designs.
- The campus's commitment to sustainability and its carbon reduction efforts will affect infrastructure decisions. Alternative and renewable energy sources will be evaluated for carbon emissions impact. A gray water system for use of recycled water and storm water runoff will be evaluated.

A campus goal with regard to infrastructure is to take advantage of its components and systems for educational purposes, especially with respect to sustainability and environmental design.

Guidelines for Infrastructure and Utilities

- Coordinate infrastructure planning and utility runs with development of building sites and road and path alignments.
- Follow guidelines for land and buildings (pages 29, 31, 33, 37, 39, and 42) when planning and designing infrastructure systems or technologies that require construction above ground (e.g., heating plants, thermal storage arrays, cellular telephone towers, solar panel arrays).
- Express storm water management elements—downspouts, conveyance swales, retention and detention structures, and the like—in building and in site design.
- Integrate energy saving elements and carbon reduction strategies into the planning, design, and construction of infrastructure systems, and express them in design.

5. UCSC's Other Regional Sites

- a. 2300 Delaware Avenue
- b. Monterey Bay Education, Science, and Technology Center (UC MBEST)
- c. UCO/Lick Observatory at Mount Hamilton
- d. Silicon Valley Center
- e. UCSC Natural Reserves



UCSC's Other Regional Sites

"While the main campus of UC Santa Cruz will retain its historic centrality to campus intellectual life and the learning experience, the campus has expanded its scope of activities into other parts of Santa Cruz County, as well as Monterey and Santa Clara counties, to create significant research, teaching, and public service opportunities otherwise unavailable to a single-location institution. LRDP planning should recognize and provide seamless integration for this regional university model."

Strategic Futures Committee
Final Report

In addition to the 2,030 acres of its main campus and the 100 acres of the Marine Science Campus¹, UC Santa Cruz is responsible for managing several ancillary facilities in and around the Monterey Bay area and the Silicon Valley. These have served to broaden and strengthen UCSC's regional presence and identity. Although each has its own distinct function and mission, capital projects at all of them are subject to the same campus processes for project initiation, development, and design review described on page 4.

Despite their diverse sites and programs, the planning and design challenge remains the same at each: to understand site conditions thoroughly and to develop facilities appropriate and responsive to them, thereby creating a unified campus with a distinct sense of place and purpose.

1. The Marine Science Campus and its Coastal Long Range Development Plan are discussed in Chapter 2 on page 14

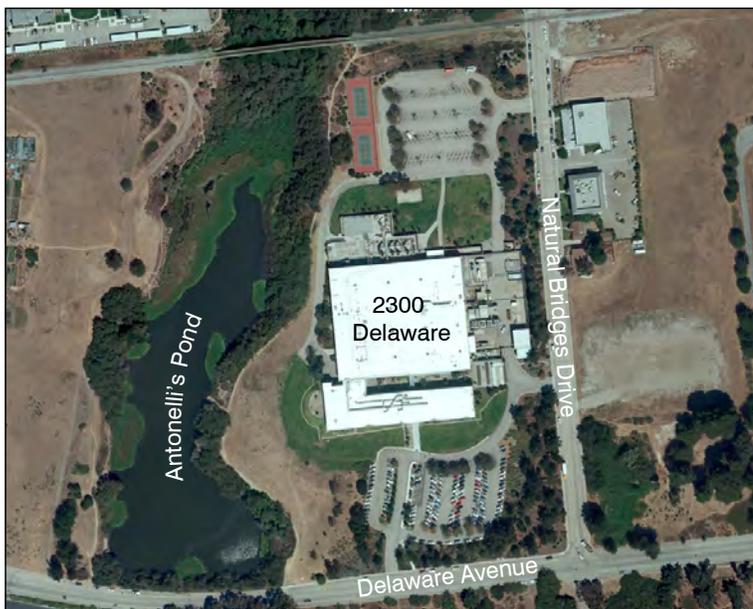
a. 2300 Delaware Avenue



In 2004 the University purchased the land and facilities at 2300 Delaware Avenue in Santa Cruz, a property formerly owned and used by Texas Instruments as a computer chip manufacturing plant. The 18.5-acre site is home to approximately 240,000 gross square feet (113,600 assignable square feet) of building space and two large parking areas. The 2300 Delaware building includes office space, clean room areas, specially designed computing spaces, and a large high tech manufacturing floor that is served from above and below by building utilities and could be converted to laboratory and other research use. UCSC's 2005 Long Range Development Plan treats 2300 Delaware as an extension of the main campus by assigning it an AC (Academic Core) land use designation.

Since its purchase, a number of administrative functions previously housed in off-campus lease space have been consolidated into the office portions of the existing building. A set of planning parameters and building diagrams have been developed to identify the technical characteristics within each of 14 building zones and to make series of space assignment recommendations, giving the highest priority to uses that optimize the building attributes and existing specialized infrastructure. Space assignments and renovation proposals for 2300 Delaware are developed and reviewed following the standard campus process previously described. Potential third party space leases will be managed under campus real estate delegations.

Links to
Selected Studies and Plans
Planning Parameters for 2300 Delaware Avenue Building C, 2005.
Space Planning Recommendations for 2300 Delaware Avenue Building C, 2006.



b. Monterey Bay Education, Science, and Technology Center (UC MBEST)

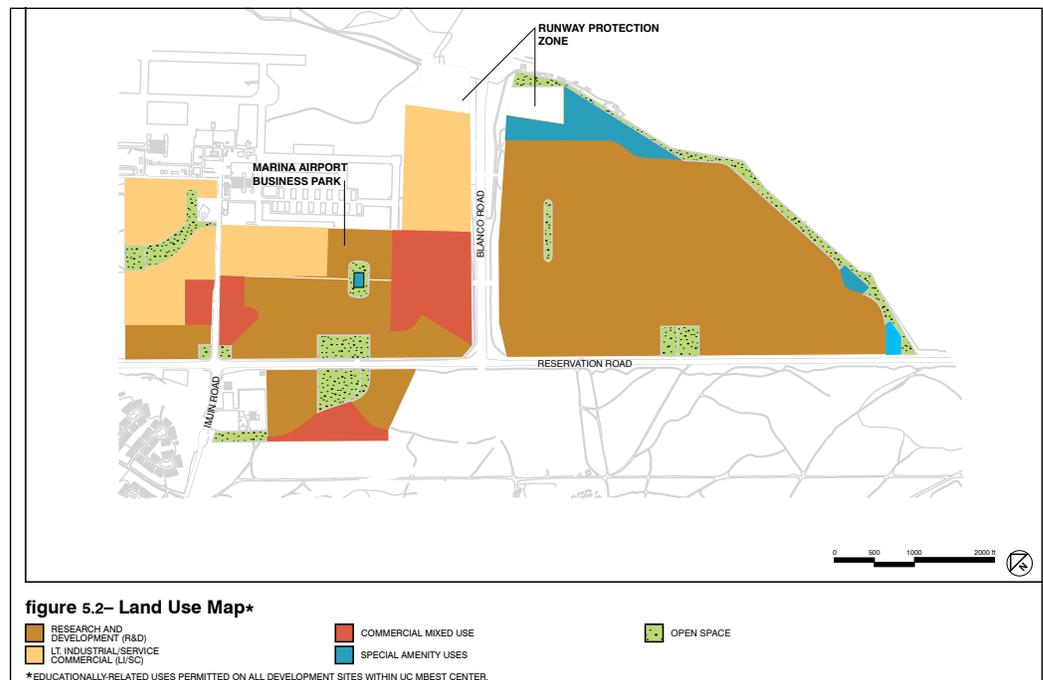


The closure of nearly all of the Fort Ord Military Reservation in Monterey County, announced in 1991, resulted in an opportunity for the University of California, under the leadership of its Santa Cruz campus, to acquire 1,089 acres of the former base as a site for the University of California Monterey Bay Education, Science and Technology (UC MBEST) Center. Approximately 605 acres of this land was incorporated into the UC Natural Reserve System as the UC/NRS Fort Ord Natural Reserve.

The University of California's goals at the UC MBEST Center are threefold:

- first, to promote economic growth and environmental stewardship through the integration of science, technology, education and policy;
- second, to contribute to California's leadership in the emerging environmental and informational economies of the global marketplace; and
- third, to maintain and enhance the unique natural and cultural resources of the Monterey Bay region through sustainable economic development.

The mission of the UC MBEST Center is to promote collaborative interaction and strategic alliances among research and education institutions, private business, and policy makers in the Monterey Bay region to enhance the area's economic development opportunities. Although the primary focus of this economic development activity will be the Monterey Bay region, it will necessarily entail linkages to statewide, national, and global markets.



Development at UC MBEST is guided by the *UC MBEST Center Master Plan* as approved by The Regents in March 1997, and by supporting architectural, landscape, and graphic design standards. The following eight principles provide the fundamental planning and design framework upon which the *Master Plan* and its land use, conservation, circulation, utility, and implementation policies are based:

1. UC NATURAL RESERVE SYSTEM FORT ORD NATURAL RESERVE. Reserve a majority of the conveyed property for the conservation and ongoing management of habitat resources.
2. LAND USES. Create a University-affiliated mixed-use development focused on research and innovation; promotion of economic growth; environmental stewardship; and the advancement of science, technology, education and policy.
3. RELATIONSHIP WITH MARINA AIRPORT BUSINESS PARK. Allow for and encourage the coordinated development of the UC MBEST campus and Marina's Airport Business Park.
4. RURAL CHARACTER. Retain the rolling topography of the site to preserve the rural character of the area, and to establish a unique image and identity for the development.
5. LANDSCAPE. Retain and augment existing site vegetation to provide continuity with the habitat reserves and establish a distinctive setting for development.
6. ACTIVITY CENTERS. Encourage the concentration of activities at strategic locations to promote exchange and interaction among UC MBEST participants, and to support transit and alternative modes of transportation.
7. PEDESTRIAN AND BICYCLE CIRCULATION. Create a continuous system of landscaped bikeways and pedestrian paths that extends the planned regional and citywide system, and that encourages non-vehicular trips.
8. LINKAGES. Create strong virtual linkages within the UC MBEST Center, between the UC MBEST Center and the California State University, Monterey Bay, and between the UC MBEST Center and UCSC, the rest of the University of California system, and other regional research institutions.

Links to
Selected Studies and Plans

*University of California Monterey Bay
Education, Science, and Technology
Center Master Plan,
December 1996*

*Installation-wide Multi Species Habitat
Management Plan for Former Fort Ord,
California, April 1997*

*UC MBEST Center Conceptual
Landscape Plan,
February 2003*

*MBEST Center Master Plan and the
Tenant Signage Guidelines,
February 2003*

c. UCO/Lick Observatory at Mount Hamilton

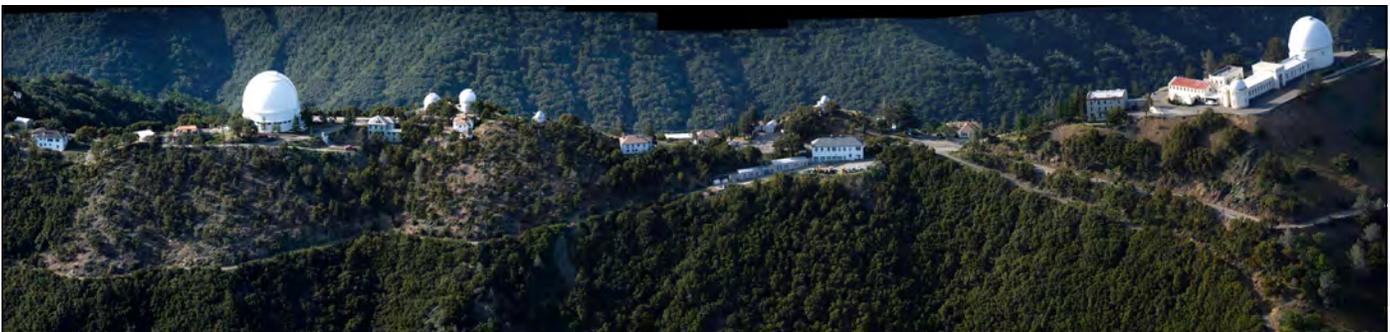
Lick Observatory, located on the summit of Mount Hamilton, a 4,200' peak in the Diablo Range east of San Jose, is part of a larger University of California entity, the University of California Observatories/Lick Observatory (UCO/Lick), a Multi-Campus Research Unit (MRU) headquartered at UC Santa Cruz. Since its founding in 1888, Lick has been a leading astronomical research observatory: a world-class research institution, a leader in the development of new instruments and observing techniques, and an active center for teaching. Largest among its nine research-grade telescopes is the Shane 3-meter Reflector, active since 1960. The 3-meter is in operation every clear night of the year, used by many different astronomers from within the UC system for a variety of projects ranging from observations of our solar system to distant galaxies. UC astronomers, using the telescopes on Mt. Hamilton, have contributed to virtually every area of optical and infrared astronomy.

Supporting Lick's astronomical observations is a collection of several dozen research, technical support, and residential buildings clustered around the 1888 main observatory building, near State Highway 130 that connects San Jose and Livermore. Capital projects at Lick are developed and approved following the standard campus process previously described.

The Shane 3-meter Reflector Telescope (right) and its dome (far right).



Aerial view (below) of UCO/Lick Observatory at Mt. Hamilton from the northwest.



d. Silicon Valley Center



Located in Building 19 in the historic district of the NASA Ames Research Park at Moffett Field in Silicon Valley, the Silicon Valley Center (SVC) is a home to academic programs, the University Affiliated Research Center (UARC), the Advanced Studies Laboratories, the Bio-Info-Nano Research and Development Institute, and various other UCSC-affiliated centers and institutes. Accredited by the Western Association of Schools and Colleges as a Regional Center, the SVC is currently a base for three instructional programs sponsored by UCSC’s Baskin School of Engineering.

With the advent of the UCSC/NASA University Affiliated Research Center (UARC) contract in 2003, UCSC commenced the first phase of its plan to become the UC for Silicon Valley. During this first phase, UCSC leveraged its growing consortia of relationships with NASA Ames as the cornerstone of its effort to engage regional higher education, community, and industrial players to join together and enact a model for the establishment of a new, “large-scale public good” through sets of mutually enhancing partnerships.

In 2006, with the aid of UCOP annual funding for Silicon Valley, UCSC established the Silicon Valley Center in the NASA Research Park’s Building 19 in order to provide UCSC with an environment in which to deploy a host of pilot programs in research, education, and service to Silicon Valley in cooperation with regional partners and NASA.

The creation of the University Associates – Silicon Valley LLC in late 2008 (and the signing of the University Development Area ground lease for 77 acres of the NASA Research Park at that time) marks the beginning of the second and current phase of the UCSC plan to become the UC for Silicon Valley. In this phase, UCSC, NASA, and regional higher education partners (Foothill-De Anza Community College District joined the LLC in early 2009), seek to deploy a model of “inter-institutional public/private partnership” to create new public infrastructure that would otherwise be cost prohibitive for single public entities. In this approach, the partners, having begun to model their



Conceptual rendering of a potential university development area at NASA Research Park.

mutually enhancing programmatic relationships (with one another, with NASA, and with industry) have collectively entered into partnership with a private master developer based on a sublease arrangement made possible through an in-kind effective transfer of land assets.

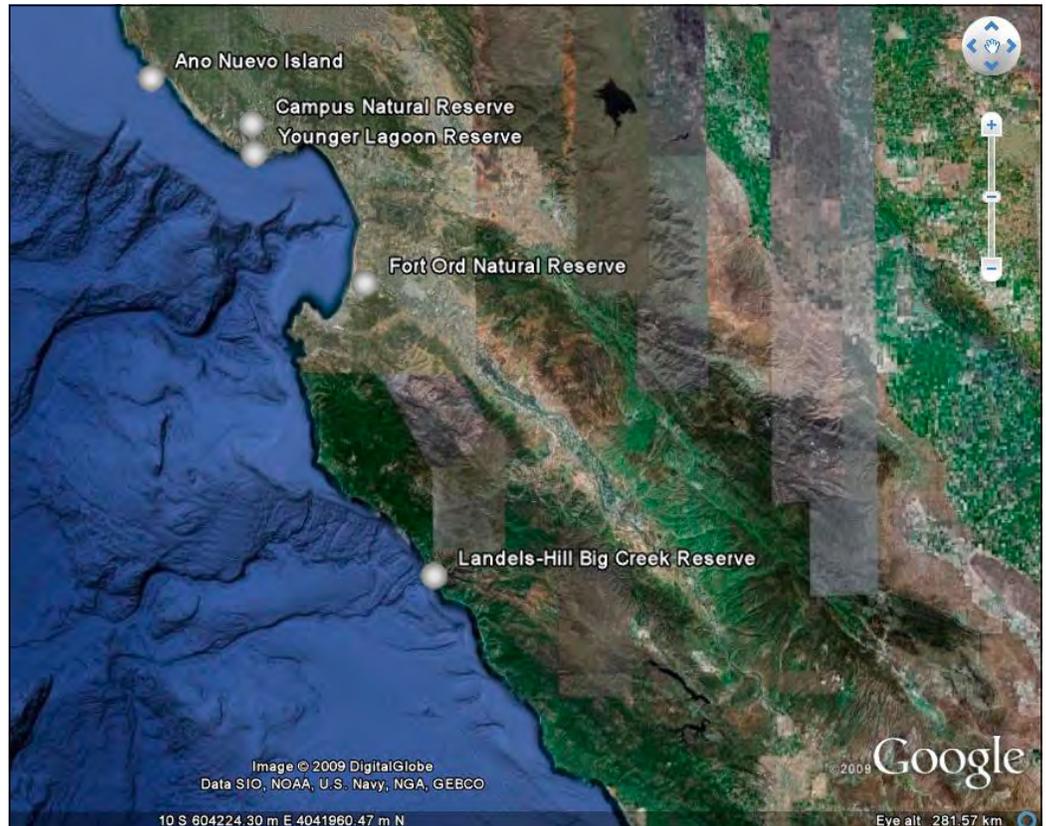
In this novel arrangement, the typical SPV (special purpose vehicle) arrangement whereby a consortia of private entities sign a contract with a public agency is effectively reversed—a consortia of public (state and federal) entities join together in partnership with a large private real estate interest to create the conditions for what will ultimately be both a revenue center and a focal point for an extraordinary host of public benefits:

- An accelerated pipeline to industry and NASA of trained knowledge workers;
- An anchor site for research partnerships that will both catalyze entrepreneurship, and enhance NASA Mission areas, and for enhanced professional school programs;
- Regional economic revitalization through real estate development and public infrastructure investment (extended light rail, etc.);
- The implementation of new architectures for working and living, a model “green print” for Silicon Valley.

Execution of the lease agreement in December 2008 began an exploratory “pre-development period” during which time the LLC and its member institutions will move through a series of milestones, including selection of a qualified master developer (an exclusive negotiating agreement was signed with TMG Partners and Related in November, 2009), preparation of a detailed development plan for the site, the preparation of an environmental impact report (EIR) based upon the NASA 2002 environmental impact statement and its adopted mitigation plan, and the successful outcome of a California Environmental Quality Act (CEQA) submission by the lead agency, UC Santa Cruz, to determine both the economic feasibility and desirability (due to outcome of environmental compliance processes) of the project prior to a last chance to exit the lease in December of 2013. From the University’s point of view, the pre-development period ends in September 2013 with an up or down Regents vote on the project prior to the final exit opportunity.

If the pre-development period milestones are met, and the outcomes are satisfactory, the NASA Research Park project will serve as the once-in-a-lifetime opportunity catalyst for the realization of a UCSC strategic initiative and a profound regional public good—the establishment of a major new graduate research and educational center from which to discharge the UCSC mission in the Silicon Valley region—the delivery of solutions at the convergence of technological innovation, environmental sustainability and social change, in partnership with NASA, higher education partners, industry, and local communities.

e. UCSC Natural Reserves



The University of California has 36 reserves administered by the Natural Reserve System Office (NRS) at the Office of the President in Oakland, encompassing approximately 135,000 acres of protected natural land available for university-level instruction, research, and public outreach.

The five Natural Reserve sites that form the UC Santa Cruz unit are spread out along 60 miles of the Central Coast from Año Nuevo Reserve in the north to Landels-Hill Big Creek Reserve in the south. UCSC's sites ring the Monterey Bay along the National Marine Sanctuary that extends along the entire coastline from the Golden Gate at San Francisco south to Big Sur. The wide range of habitats, from fog-enshrouded redwood forest to coastal scrub provide an unparalleled natural laboratory for marine and terrestrial research and serve as study sites for University scientists and students. Information about UCSC's five reserve sites is available at ucreserve.ucsc.edu/.



Año Nuevo Island Reserve

Located offshore from Point Año Nuevo, 45 miles south of San Francisco, Año Nuevo Island is composed of Miocene shale with remnant dune deposits surrounded by rocky islets and intertidal shelves. Just two hundred years ago this eroding and fast-changing island was connected to the mainland by a low peninsula. From 1872 until 1948 the island was a coast guard light station. Today

this 25-acre island is part of the 4,000-acre Año Nuevo State Reserve, all of which is owned and operated by California State Parks.

The island is an important breeding ground for northern elephant seals (which occur on the adjacent mainland in even greater numbers), threatened northern sea lions and small numbers of harbor seals and California sea lions. It is a major haul out area for California sea lions. Threatened southern sea otters, and great white sharks frequent the near shore waters. The island also supports nesting colonies of sea birds, including Brandt's cormorants, western gulls, pelagic cormorants, rhinoceros auklets, pigeon guillemots, Cassin's auklets, and black oystercatchers. There are very few places on earth with higher densities of large animals than this tiny island.

The reserve supports a 40 year on-going study of the growing elephant seal population as it has rebounded from near extinction a century ago. This long term study, begun with natural history, has expanded to investigate complex questions about the incredible diving abilities of elephant seals and the physiology that supports it (depths well in excess of 1,600 feet and dive times in excess of an hour), their foraging and long-distance migrations (two migrations a year over thousands of miles of ocean), and the physiology that allows their extended fasts ashore (1-3 months without food or water).

Researchers are accommodated in the historic buildings of the former Coast Guard light station. Due to the highly sensitive habitats and protected marine mammals and seabirds on the island, reserve use is restricted to scientific research.



Landels-Hill Big Creek Reserve

Protected by the Santa Lucia Mountains and rocky cliffs, the Big Sur coast includes the largest and most pristine coastal wildlands in central and southern California. In the center of this area, the University of California Natural Reserve System and the University of California at Santa Cruz operate two adjacent reserves: the 4,200 acre Landels-Hill Big Creek Reserve and the 1,200 acre Big Creek State Marine Reserve, which is co-administered with California Department of Fish and Game.



Fort Ord Natural Reserve

Located on part of the former Fort Ord Army Base, Fort Ord Natural Reserve supports excellent examples of maritime chaparral endemic to the Monterey Bay region. This rare habitat and several associated plant and wildlife species depend largely on Fort Ord land for their survival. Eleven listed plant species reside there, along with six listed animal species. The site also supports a mixture of other habitats: coast live oak, coastal scrub, mixed annual grassland, and native perennial grassland.

UC Santa Cruz Campus Natural Reserve

The UCSC Campus Natural Reserve covers 400 acres of protected natural lands on the UC Santa Cruz campus. This land was set aside as part of the LRDP to preserve the natural communities for

teaching, field research and natural history interpretation. These lands are a living library and laboratory.



Younger Lagoon Reserve

One of the few relatively undisturbed wetlands remaining on the California Central Coast, the Younger Lagoon Reserve is part of UCSC's Marine Science Campus, discussed on page 14. It encompasses a remnant Y-shaped lagoon and adjacent terrace lands protected by the *Marine Science Campus Coastal Long Range Development Plan*. The lagoon system provides protected habitat for 100 resident and migratory bird species. Reserve habitats include salt and freshwater marsh, coastal strand, backdune pickleweed flat, steep bluffs with dense coastal scrub, pocket beach, grassland, and dense willow thickets.

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Illustrations of the Five Unifying Concepts on pages 20 through 24 are adapted from the *Implementation Program for the [1988] Long Range Development Plan, University of California, Santa Cruz.*

Other photographs and illustrations: Peter Aaron/Esto Photographics: page 44 bottom left; BMS Design Group: pages 15 left, 15 center; BOORA Architects: front cover top left; CO Architects/Spurlock Poirier: page 53; Cooper, Robertson & Partners: pages 28, 29, 64, 67 top, 71; Cooper, Robertson & Partners/EDAW: page 69 top; Dean Fitch: page 57 right; Google Earth: pages 2 right, 79 top; Huffman-Broadway Group: page 15 right; Don Kenny: pages 48 (Stevenson College), 49 (Kresge College), 58; Jim MacKenzie: page 45 upper left; North Tree Fire International: page 76 bottom; Ross Drulis Cusenbery Architecture Inc.: page 60 left; Cesar Rubio: front cover top right; Central Coast Joint Data Committee: aerial photos on pages 14 top, 40, 44 upper left, 46, 50, 52, 54, 56, 59, 62, 72 bottom; Sasaki Associates: pages 6 top left, 6 top right, 38, 39; THA Architecture, Inc.: page 55; University of California Natural Reserves: pages 79 bottom, 80 top, 80 bottom, 81; UCO Lick Observatory: page 76 top left and top right; UCSC Transportation and Parking Services: page 65 right; Frank Zwart: front cover bottom, pages 25, 30, 31, 33 left, 33 middle, 33 right, 34, 35 top, 35 middle, 35 bottom, 36, 37 left, 37 center, 37 right, 41, 44 bottom middle, 44 bottom right, 45 bottom, 48 (Cowell, Crown, Merrill and Porter Colleges), 49 (Colleges Nine and Ten), 51 left, 51 center, 51 right, 57 upper left, 57 bottom left, 60 right, 61, 63, 65 left, 66 left, 66 right, 67 bottom, 68 left, 68 middle, 68 right, 70.

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Appendix A: 2005 LRDP Objectives

The 2005 LRDP describes a physical planning framework that supports the three elements of the University’s mission: teaching, research, and public service. This framework, that will guide development at UC Santa Cruz, is founded on the following LRDP objectives:

Provide for instruction, research, support, residential facilities, and infrastructure needed to:

- Accommodate anticipated enrollment growth and program development;
- Support the breadth and depth of undergraduate and graduate academic programs and professional degree programs;
- Accommodate the expansion of high-quality research programs;
- Allow the campus to expand its contribution to the public cultural life and economic well being of the region through public programs, events, and services.

Develop facilities to foster a dynamic intellectual and social community, specifically:

- Locate new facilities on the main campus to build on the established foundation of human and physical resources already in place and to encourage interdisciplinary collaboration;
- Provide facilities and spaces that will enrich the collaborative learning environment for the on-campus student community and encourage academic, personal, and social development.

Develop a physical environment that will support educational opportunities for an increasingly diverse population.

Retain flexibility that will allow continuing evolution of the campus over time in response to changing demographics, societal needs, technological developments and new external challenges.

Respect and reinforce the Physical Planning Principles and Guidelines to maintain the unique character of the UC Santa Cruz campus.

Appendix B:

2005 LRDP Physical Planning Principles

UCSC's 2005 Long Range Development Plan, approved by The Regents in September 2006, is based on a set of physical planning principles based on long-standing practices intended to maintain and enhance the unique character of the UC Santa Cruz campus. They are the foundation for this Physical Design Framework, which has been developed to reinforce and enhance them, and they are printed here in their entirety.

Throughout the history of UC Santa Cruz, the campus's physical planning approach has carefully balanced its academic, research, and service mission with a commitment to careful stewardship of the remarkable site entrusted to the campus. The 2005 LRDP will be guided by the planning principles outlined below. These principles are intended to protect the campus's extraordinary natural and cultural features, while at the same time incorporating those features into a built environment that, when taken as a whole, maintains UCSC's unique character, community, and quality of life. The principles in this section are not intended to serve as planning restrictions, but will guide future planning of individual projects whenever feasible.

At the heart of UCSC's approach to physical planning is a commitment to sustainable development. In its planning, design, construction, and operations, UCSC will strive to achieve more sustainable outcomes for the campus and community. It will incorporate sustainable design measures in new and existing buildings whenever economically feasible, and will actively explore and implement new technologies and strategies that promote resource sustainability for the campus and surrounding communities.

SUSTAINABILITY

Sustainability refers to principles of physical development, institutional operation, and organizational efficiency that meet the needs of present users without compromising the ability of future users to meet their needs—particularly with regard to the use of natural resources.

Promote sustainable practices in campus development. The campus will strive to balance concentrated development with sensitivity to the natural environment and will explore site design options that meet current needs without foreclosing future options. To the extent possible, buildings will incorporate flexibility to be adapted for other program uses in the future.

Promote sustainable practices in campus operations. The campus will continue to promote and explore sustainable practices including recycling, energy conservation, alternatives to single-occupant-vehicle transportation, and water conservation, among others.

Encourage broad-based sustainability initiatives. The campus will continue to develop campuswide sustainability awareness through education and outreach programs. The campus will work to form partnerships with the City of Santa Cruz, the County of Santa Cruz, and other communities to identify shared strategies that address common goals.

LAND-USE PATTERNS

Respect the natural environment and preserve open space as much as possible: Development will rely on careful infill and clustering of new facilities to promote efficient land use, retain valuable visual and environmental features, and encourage a pedestrian-friendly campus. Within the overall context of infill and clustering, sites will include reasonable "buffer" between new buildings and major roads where possible

Integrate the natural and built environment: New development will respond to the aesthetic qualities of UCSC's unique natural environment through siting, development patterns and architecture that are sensitive to the natural setting. In forested areas, buildings generally should not protrude above the surrounding tree canopy; in visually sensitive areas, interruption of prime viewsheds and viewpoints will be minimized.

Maintain UCSC's core configuration. Development will follow UCSC's traditional land-use pattern, which is a core of academic and administrative buildings surrounded by the residential colleges and other housing and support facilities. This pattern facilitates pedestrian and bicycle travel and maximizes interaction among members of the campus community. New colleges will be located as close to the core as possible without compromising sites for future academic and research facilities.

Encourage sustainability and efficiency in building layouts:

Buildings shall be configured simply, to balance programmatic goals with sensitivity to the natural and/or built context. Efforts will be made to reduce building footprints and increase building height, where feasible.

NATURAL AND CULTURAL RESOURCES

Respect major landscape and vegetation features: Development will be sensitive to preservation of UCSC's distinctive physical features, including ravines, major grasslands, chaparral, and areas of redwood and mixed evergreen forests.

Maintain continuity of wildlife habitats: To the extent possible, development will minimize interruption of wildlife movement and fragmentation of habitats.

Design exterior landscaping to be compatible with surrounding native plant communities:

As much as possible, landscaping will favor the use of native plants, as well as noninvasive, drought-tolerant, and fire-resistant species.

Maintain natural surface flows as much as possible: UCSC will use financially viable sustainable design strategies to manage storm water, thereby preserving groundwater supplies, major springs, seep zones, year round springs, and major drainage channels, while at the same time preventing slope erosion.

ACCESS AND TRANSPORTATION

Promote a walkable campus: To the extent possible, the campus will provide new pathways and improvements to existing pathways to enhance the "walkability" of the campus. Improvements for bicycles and transit, combined with frequent internal shuttles and connecting off-campus bus service, will facilitate campus pedestrian circulation.

Discourage automobile use to and on the campus: UCSC will continue to expand its comprehensive program of Travel Demand Management strategies to encourage alternatives to single-occupant vehicle use. New bike routes and bike parking will be developed to encourage bike travel around campus.

Consolidate parking facilities at perimeter campus locations: To promote non-automobile transportation options in the core, the campus will continue to encourage the use of peripheral parking facilities with frequent shuttle service.

CAMPUS LIFE

Enrich the academic experience for all students: Enrich the campus experience through the development of campus life facilities that support a variety of intellectual, educational, social, and recreational programs. UCSC's residential colleges will continue to provide supportive living/learning communities with a range of student services within the context of a major research university.

Offer university housing opportunities for students and employees:

In addition to the housing offered in residential colleges, UCSC will provide a diversity of housing options for students and university employees. Housing will be developed to support the academic mission and to increase the regional housing supply.

Create an array of facilities that enrich the quality of campus life:

The campus will develop academic support facilities to provide programs, services, and activities for all members of the university community. The campus will develop student services facilities and academic support facilities which enhance the academic experience, support the well-being of the academic community, support student success, and complement the residential colleges.

THE SANTA CRUZ COMMUNITY

Communicate and collaborate with the surrounding community:

Ongoing communication and collaborative planning will enable UCSC and the surrounding communities (especially the City of Santa Cruz) to anticipate and address particular challenges and work together toward common goals. UCSC will continue its commitment to the annual Chancellor-Mayor public meeting to report on progress toward mutual goals and participate in joint efforts to address issues that concern the community.

The Santa Cruz Community - Encourage the economic health of the surrounding community:

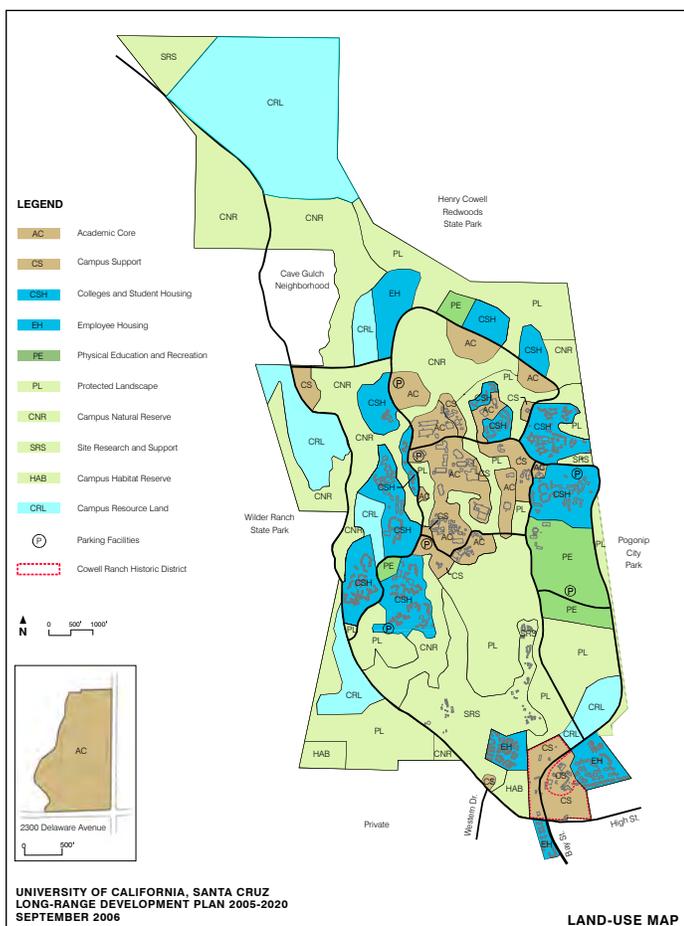
Identify joint opportunities for encouraging business activities that generate local employment and expand the local tax base. Work closely with UCSC's neighboring communities to seek practical solutions to the challenges of growth and change.

Provide an accessible and welcoming public-service environment:

UCSC will continue to welcome public participation and continue to provide opportunities for the public to enjoy performing arts and lecture programs and make use of the University Library, physical education and recreation amenities, and other campus resources.

Appendix C:

2005 LRDP Land Use Designations



A full-sized 2005 LRDP Land Use Map can be found on page 11.

ACADEMIC CORE (AC)

The 2005 LRDP Academic Core encompasses approximately 132 acres. This will provide space and flexibility for future expansion in the north campus for needs anticipated under this plan, including potential professional schools and research functions. The boundary of the Academic Core is defined by Heller Drive to the west, the Great Meadow to the south, Hagar Drive to the east, and a new loop road to the north. Facilities to accommodate the following building program elements will be the principal uses sited in the Academic Core: Instruction and Research, Organized Research, Academic Support, Libraries, Student Services, Public Services, and Institutional Support.

CAMPUS SUPPORT (CS)

Eight separate areas totaling approximately 85 acres are designated Campus Support. The largest of these, at the south entrance to the campus, will accommodate both public functions and operations-oriented functions in the corporation yard. To the extent feasible, some facility and operational corporation yard functions will be relocated under this LRDP, primarily to an 8-acre site off Empire Grade. This would allow improvements to the main entrance area for public-oriented and visitor services and to improve efficiency in operations.

The Quarry Plaza area north to McLaughlin Drive will expand to accommodate growth for future Student Service functions, commercial and retail facilities and the Cowell Student Health facility. The area housing the Fire Station will expand to meet projected future needs. A new area is designated for Campus Support east of Earth and Marine Sciences for infrastructure to support expansion of facilities and to supplement the Central Heating and Cooling Plant (another Campus Support area). The area accommodating the University House (the Chancellor's residence) will remain unchanged.

COLLEGES AND STUDENT HOUSING (CSH)

The college arc surrounding the academic core is designated Colleges and Student Housing, and constitutes 228 in this LRDP. This area occupies land to/ the east, north, and west of the academic core, and will accommodate the construction of new colleges, expansion of existing colleges through infill, new undergraduate and graduate student housing, and family student housing projects. In addition, housing-related parking and recreational amenities will be provided in Colleges and Student Housing. Residential facilities may include both residence hall, apartment style, and various suite-type accommodations. (For additional information

on college and housing program goals, see LRDP section 5e. Housing and Student Life.)

The principal program elements permitted in Colleges and Student Housing include Housing and Food Services, related recreational amenities, related parking, Student Services, Academic Support, Family Student Housing, Childcare, and Physical Education and Recreation. Some facilities for the academic divisions are located in the colleges; it is also anticipated that new colleges will house some Instruction and Research space.

EMPLOYEE HOUSING (EH)

Approximately 69 acres encompassing existing development and undeveloped land are designated as Employee Housing in this LRDP. Existing employee housing near the south entrance, including Ranch View Terrace, occupies approximately 42 acres. A second 27-acre area to the north has been designated for future development of employee housing. Housing for faculty and staff, childcare facilities, and related accessory buildings are consistent with this land use, together with associated parking and recreation space. Additional employee housing could be located on Campus Resource Land.

PHYSICAL EDUCATION AND RECREATION (PE)

Approximately 86 acres of relatively level land in three areas of the campus are designated Physical Education and Recreation (PE) in this LRDP. Two of these areas, located east and west of the Academic Core, already accommodate PE. The western area, approximately four acres, does not have sufficient remaining undeveloped space for expansion of PE and Recreation facilities. The east area, of approximately 71 acres, has adequate space for additional indoor recreation facilities, playing fields, and courts. A third area of approximately 14 acres to the north is currently undeveloped and could accommodate a significant increase in indoor facilities, playing fields, courts, and other recreation facilities, thereby providing a more balanced distribution of recreation opportunities across the campus. This land-use designation can also accommodate parking and transit facilities. A future recreation and events center could be located within this land use.

CAMPUS RESOURCE LAND (CRL)

The 1988 LRDP assigned approximately 471 acres of undeveloped land located in the northern part of the campus to this land-use category. The 2005 LRDP land-use plan designates 335 acres of undeveloped land, mainly located in the far north campus and areas in the coastal zone west of Empire Grade and west of Porter College, to this land-use category. This land-use designation is assigned to lands that are not planned for development under the 2005 LRDP. It is envisioned that these lands would be maintained in their natural state to serve as long-term reserve lands for future use. In the event that the campus determines during the term of the 2005 LRDP that it needs to develop some portion of this land, it will conduct additional environmental review and will seek an LRDP amendment.

CAMPUS NATURAL RESERVE (CNR)

The land use designation "Environmental Reserve" was established in 1988 LRDP in order to protect certain of the campus's natural features and processes for teaching and research. The 1988 LRDP designated approximately 393 acres for this use. The proposed 2005 LRDP renames this land use category Campus Natural Reserve (CNR) and designates 410 acres for this use. Land under this designation would remain in its natural state except as required for maintenance, as teaching and research reserve. Construction in this area is prohibited, except as required in conjunction with teaching and research in the area, or the limited construction of utilities, roads, and paths.

One section of the CNR, the Lower Moore Creek area adjacent to the Arboretum, will be jointly managed under the direction of the UCSC Campus Natural Reserve and the Arboretum and will include a California regional native plant garden, California red-legged frog habitat improvements, and other support and interpretive structures.

SITE RESEARCH AND SUPPORT (SRS)

Three areas totaling approximately 154 acres are designated for Site Research and Support in this LRDP. The first of these areas in the south campus includes land currently used by the Center for Agroecology and Sustainable Food Systems (CASFS) and the UCSC Arboretum. The second area in the far north includes 33 acres. The Chadwick Garden at the east end of McLaughlin Drive, encompasses four acres. The development of new buildings associated with these and future approved research programs is permitted within these designated areas. The principal program elements associated with this land use are Social Sciences, Physical and Biological Sciences, Student Services, and Public Services.

PROTECTED LANDSCAPE (PL)

The natural landscape of UC Santa Cruz has been recognized from the campus's inception as a unique asset that distinguishes UCSC from other universities. In addition to the 420 acres in the CNR, approximately 505 acres of land have been designated in this LRDP as Protected Landscape in order to maintain special campus landscapes for their scenic value and to maintain special vegetation and wildlife continuity zones. To the extent feasible, Protected Landscape will be retained in an undeveloped state as the campus grows. Any development within Protected Landscape will not impinge on its overall character.

The meadows south of the developed center of the campus will be maintained as undisturbed grassland. In these meadows, no building will be allowed. Agricultural research that maintains the visual quality of the lower meadows may be allowed.

CAMPUS HABITAT RESERVE (HAB)

Two areas on campus, which total approximately 25.5 acres, are designated as Campus Habitat Reserve (HAB). The larger of these two areas, a 13-acre parcel on the southwestern corner of the campus adjacent to Wilder Creek, is designated as a reserve to retain high-quality grassland and forest habitat on the campus for the California red-legged

frog and the Ohlone tiger beetle. This reserve was established pursuant to a 2005 Implementing Agreement between the U.S. Fish & Wildlife Service and The Regents. The second area, a 12.5 acre parcel, is located in the southern portion of the campus near the main entrance. A portion of the parcel is designated as a management site for Ohlone tiger beetle habitat with the remainder of the site managed for California red-legged frog. HAB lands are protected lands that will remain undeveloped except as permitted by the terms of the Implementing Agreement and associated Habitat Conservation Plan (HCP).

OVERLAY AREAS

COWELL RANCH HISTORIC DISTRICT

The Cowell Ranch Historic District (CRHD) is an overlay district that encompasses cultural resources of particular significance from the original Cowell Ranch. The Cowell Ranch constitutes a landmark that helps define a strong and unique "sense of place" for UC Santa Cruz. The overlay district is in a Campus Support land-use area. The CRHD is eligible for listing on the National and State Registers of Historic Places. A CRHD Management Plan governs development and protection of structures and landscape in and around the CRHD.

PARKING FACILITIES

The parking overlay areas provide consolidated peripheral parking and reduce the number of parking spaces in the central campus. The 2005 *LRDP* also provides for limited surface parking in Academic Core, Campus Support, Colleges and Student Housing, Site Research and Support, Physical Education and Recreation, and the Cowell Ranch Historic District overlay area. Existing surface parking lots may be used as future building sites. The Parking Facilities designation is an overlay area in the land-use plan. It represents the general area within which possible future parking facilities could be located, but does not designate specific site and garage configurations.

Appendix D:

1963 LRDP Founding Design Guidelines

The guidelines for the architecture and the landscape architecture of the campus proposed in UCSC's *1963 Long Range Development Plan* convey better than anything else the spirit and values of that founding document. They have led to a collection of exemplary buildings as lively and varied as UCSC's rich natural setting. These founding design guidelines are printed here in acknowledgement of their profound importance and continuing influence.

1963 LRDP Architecture Guidelines

THE OPPORTUNITY. The architectural development of the Santa Cruz campus offers an unusual opportunity to those who will design its buildings. The Academic Plan of the campus is one of unusual interest, that should stimulate the imagination of creative designers. Furthermore, the campus is being planned and its first buildings will be constructed during a period of important reappraisal of architectural development in the United States. And finally, the campus will grow from unspoiled land, with no existing buildings to mark the direction it should take—land that offers a setting of unusual beauty, both a challenge and a restraint.

The Academic Plan affects the architectural expression strongly in the sense that there is a desire for differentiation of design among the colleges, and obviously a difference in scale and monumentality between the architecture of the colleges and that of the academic buildings in cultural and science centers.

The search for new directions in architecture throughout the world at the present time comes largely from a dissatisfaction with the repetitive, sometimes unimaginative position that the modern movement in architecture, starting bravely in the early years of the century, seems to have reached at the time when the Santa Cruz campus is beginning. There is a new desire for emotional content in the design of important buildings, and for a richness and subtlety that seem to have been lost in a concern with technological innovations.

The effect that the land and the landscape will have on the architecture has been suggested by Thomas D. Church, the landscape architect. Referring to the "outscale" redwood groves and their natural relationship to the "rugged knolls and deep ravines," Church comments:

....**an architecture must grow out of the problems, restrictions, and potentialities of the site**...but it would be foolish to think that a new, startling architecture will appear here. Any attempt of a designer to compete in grandeur with this site is doomed to failure... color and texture will be as important as form.

PRINCIPLES. To these challenges, the master plan architects of the Santa Cruz campus respond with a statement of architectural purpose:

1. **In the design of buildings, there must be a full respect for the site, with its meadows and its forests, and for the climate, with its sunshine and its fog.** This does not mean a withdrawn, negative architecture, but a variation in statement: one sort of statement for buildings that will sit proudly on knolls, another for those that will be sheltered in the groves of trees.
2. There must be **a differentiation between the informality of the residential college groupings and the more formal and even sometimes almost monumental character of the central campus buildings.**
3. There must also be **a differentiation among the colleges**, since the Academic Plan makes a point of this fact in relation to the program for education.
4. There must not be any cliché type of stylized "modern" architecture. The site, the program, and the unparalleled opportunity to start from scratch all argue against the use of any standard, tired building types, either traditional or modern.
5. Buildings averaging no more than three stories can meet the initial needs of the campus. Later, as the site becomes highly utilized, more intensive use of the land will be required to preserve trees and maintain open areas. It will probably be necessary to rise gradually to an average of six stories. Any architectural approach adopted in the early buildings must be compatible with higher-rise buildings to be erected later.

PRECEPTS. From these general principles certain specific directions are indicated, and have been stated by the master planners as suggested "rules" or precepts.

They are:

- A. The principle of **architectural diversity** on the campus (from college to college and from academic to residential structures) should be pursued in two ways:
1. **By a hierarchy of building types.** Within this order the residential colleges, which comprise the majority of campus buildings, should assume great informality and be designed at a scale related to the individual, to induce recognition of each college as an entity, and give a sense of intimate enclosure. At the other extreme will be some of the buildings in the central academic area, where the dignity and ceremony of University life should be expressed in more formal architecture, and at a scale recognizing or responsive to the total campus. In between, many of the academic and non-academic buildings will find their own scale and their own expression. The science center buildings, for instance, should give a sense of courts and quadrangles, with provision for future tower buildings.
 2. **By the varying architecture of the individual residential colleges.** Here variation will come in the individual translations of the programs by different architects.
- B. There should be **a strongly unified, integrated architectural expression within each group of buildings.** Each college and professional school, as well as the group of central academic buildings must be consistent within itself and identifiable by its architectural character. For each group of buildings there should be a unity of building scale, materials and colors, textures, shapes. However, there will be no single architectural style vocabulary that will apply to every building and every space.
- C. **Individual buildings may take advantage of the topography to depart from conventional plans** and make use of forms adapted to the site, such as bridges and wide cantilevers.
- D. Despite the emphasis on variety from building type to building type, from college to college, and in addition to the consistency within each group, **there must also be some form of overriding unity on the campus—a visual and emotional identification of the Santa Cruz campus as an entity.** Implementing this precept will be difficult. The Long Range Development Plan suggests that the following methods of approaching the problem will achieve a sense

of unity while allowing diverse architectural expressions in the different groups:

1. A single, basic structural material that should be visibly used for columns, wall panels, and all major structural elements. This will provide an overall unity that no other method could approach. The material suggested for the Santa Cruz campus (actually being used in the first buildings) is concrete. This is the most versatile material that could be employed; it adapts itself to factory-controlled precasting techniques, and it allows many surface textures and forming methods. It is a plastic material, making possible variations in its use—and today it compares favorably in cost with other structural materials.
2. Roofs with a certain consistency of design and even a constancy of materials used—preferably copper—can be another unifying influence. The contours of the campus, which make it inevitable that roofs of some structures will be seen from the floors of others, suggest that good-looking, handsomely formed roofs be used on most of the buildings.
3. Bases of buildings, at the other extreme from roofs, can also be unifying factors. It is urged that there always be a strongly identified and clearly expressed transition from building to ground. Slopes of the site can be taken up in bases, and terraces and flat areas can grow naturally in relation to the bases of the buildings.
4. A color palette of earth tones, with contrasts of sharp color spots is appropriate to the setting and can be a unifying influence, even though it is not suggested that the same textures and colors be used on all buildings. Lighter colors and off-whites should primarily be used within the densely wooded forest areas, where the sun will not penetrate strongly. On the slopes and knolls, often in full sunlight, the warmer earth colors can add richness. Textures will vary from smooth to rugged. In general the more formal buildings might use smoother finishes, and the less formal ones can find rough textures and even woods and stones appropriate. Textures, as colors, can vary depending on whether a building is sheltered by trees or is in open sunlight.

The actual design of buildings cannot be spelled out in a Long Range Development Plan. One of the precepts enunciated here is that the Santa Cruz campus should not have a single "style." However, these broad suggestions are made in the hope that they may be a guide, not only for the early designs that will start the building of the campus, but as well for future generations of architects who will carry the campus to completion. Styles change from time to time; principles of design can be followed

through many periods of change and even by many architects, when they sincerely seek a consistency of expression.

1963 LRDP Landscape Architecture Guidelines

The landscaping problem on the Santa Cruz campus site is not one of furnishing new material so much as it is preserving what is there and making the best use of it. Thomas D. Church has commented about the trees on the site as follows:

Among the natural features which make the site both provocative and difficult, it is the size of the redwood groves which must concern us the most. These towers of trees are 'outscale' and more related to the rugged knolls and deep ravines than they are to an academic landscape. They are, therefore, to be thought of less as trees to enhance, screen and shelter buildings (although they do so), but more as great vertical elements of the topography having form, mass and density against which to compose the architecture. The problem is more like building at the foot of cliffs or in the Pinnacles National Monument. It must be kept in mind, to avoid future recrimination, that one of the inevitable results of building in a forest is that as man enters, nature recedes. Romantics must be warned that covers of fern, johnny-jump-ups and shooting stars prefer to disappear rather than face our advanced civilization. With the exception of areas especially preserved in their natural state **the general effect in the main campus areas must be one of sensitive collaboration between the designer and this spectacular environment with the intent that neither shall impose unduly upon the other.**

The desire to maintain open spaces, already mentioned, results in the following landscape policies:

1. To **maintain wilderness areas**, where the present condition will remain as a source of enjoyment and inspiration to students and faculty (with important use in the study of Botany, Natural History, and the Earth Sciences).
2. To **develop parks**, where the present ground cover—certain to disappear when the campus develops, as Thomas Church has pointed out—will be replaced with lawns and other more park-like planting.
3. To **define buffer areas** that will separate the campus from the surrounding community where this is deemed desirable, and to provide a setting of natural beauty for certain buildings and building groups.
4. To **design scenic drives** that, still serving a function in the road system, will lead through especially picturesque parts of the site and furnish vistas toward the most striking views.

In addition to this aspect of landscaping, however, **the landscape design of the campus is inextricably related to the siting of buildings and the design of the road systems.** The major decision with regard to siting—that the great meadow toward the south of the campus should not be built upon, that the first buildings to be encountered in entering the site would be at the crest of the hill where the trees begin, and that the academic core of the campus should occupy a park-like area in the geographical center of the campus—has been described earlier.

The other major decision in siting that affects landscaping is that the colleges will be placed on knolls and ridges, sometimes quite within the trees, sometimes in more cleared space. Rarely will one building group be seen from another. The courts and quadrangles, whether formed by college or academic groupings, will receive more formal landscape treatment, although even here the character of the terrain and of the region will be maintained, and indigenous plant materials will be specified. Certain paved areas will of course be required, where the aim will be to harmonize with the surrounding land.

Thomas D. Church has described the aims in siting:

Usual relationships of building groups in a formal pattern may violate the topography beyond repair. Grading and reforming of the land there will be, but kept to a minimum. Tree-clearing will be inevitable, not because the architecture forces it, but because the ultimate landscape demands it. There will be no indiscriminate removal of major redwood groves to accommodate preconceived architectural schemes. To a greater extent than any of us have faced heretofore, the buildings are less important in the visual composition than the trees. Instead of remaking the land, the land must remake our standard conceptions of building and plaza and parking lot.

Roads and paths are also an integral part of the landscaping. The roads have been laid out to conform as closely as possible to existing contours of the topography, not only to avoid unnecessary expense, but also to minimize unsightly cuts and fills. Where new earth work is necessary, indigenous planting will soften it as quickly as possible. Where bridges are required, they will be designed in congruity with the terrain. Parking areas will be kept unobtrusive through selection of their locations and by use of concealing trees and other planting. Paths will lead off from the vehicular roads, both in the center of the campus and at other building locations. They will separate from the road system in a natural manner and be, for the most part, asphalt paved. Along these paths there will be not only pedestrian bridges and steps, from time to time, but such outdoor "furniture" as lights, benches, and railings, all of which will be planned and designed to blend with the natural landscape.

Appendix E:

2010 Physical Design Framework

Planning and Design Guidelines

Guidelines Related to Topography, Geology, and Hydrology

- Respect site topography and immediate surroundings. Small floor plates, stepping or terracing that responds to the terrain, and terraced open spaces are design strategies that have proved successful.
- Limit grading beyond project footprint to reduce impacts on existing trees, vegetation, and landscape. Avoid highly geometric grading patterns; transition gradually from constructed slopes to original topography.
- Integrate new development into the landscape by using storm water designs that minimize and balance runoff, maximize infiltration and preserve natural drainages. Low Impact Development (LID) stormwater management strategies are a campus standard.

Guidelines for Meadow Areas

- Maintain the continuity and visual “sweep” of the meadow landscape across the lower campus, from the Pogonip east of the campus to Wilder Ranch State Park on the west.
- Maintain the lower campus meadows as a buffer between central campus development and the city of Santa Cruz, continuing the role of campus lands as an important element in the city’s greenbelt.
- Do not permit new plantings or plant succession to change the overall visual character of the lower campus meadows. Avoid new fencing, except where necessary to manage meadows or grasslands.
- Preserve the integrity of meadows by maintaining a clear meadow boundary. Site development so as not to encroach on the meadow open space.
- Consider opportunities to manage, restore and enhance native meadow habitat as appropriate to maintain the visual expanse of open space and natural vegetative and wildlife diversity.
- Consider long-range views in the siting and design of facilities, both south towards the ocean and north towards the forest edge, particularly where the meadows meet the forest edge.

Guidelines for Forested Areas

- Build carefully in the forest. Make development compatible with existing vegetation.
- Build no taller than the surrounding tree canopy.
- Create a clear sense of entry from forest path to building cluster.
- Site and design future development to preserve the visual and ecological integrity of the forest, to maintain contiguous forest cover

and habitat for wildlife, and to maintain public safety. Protect trees and understory vegetation of mixed age and species to maintain forest diversity.

- During project planning, identify trees and tree clusters of particular aesthetic value and incorporate them in the design.
- Design building clusters to create welcoming sunny public outdoor spaces that contrast with the shaded forest, in order to encourage activity and social interaction.
- Design nighttime lighting in the forest to provide a safe environment while minimizing light pollution and intrusion into wildlife habitats.
- Site and orient buildings to optimize natural light and to take the best advantage of site conditions of sunlight and forest shade and their potential to provide natural heating and cooling.

Additional Guidelines for the Forest Edge

- Consider the visual continuity of the forest edge as seen from a distance when designing buildings there. Maintain heights of buildings and infrastructure elements significantly below the tree line.
- Arrange building elements and clusters to create an irregular building profile against the forest edge. Avoid long, unbroken horizontal roof lines.
- Choose exterior colors to blend with the forest edge. Avoid using bright colors or highly reflective exterior surfaces.
- Use plant materials, either existing or newly planted, to blend new development appropriately into the forest edge.
- Incorporate the dramatic sense of transition when moving between the shade of the forest and light of the meadow into the design of buildings there.

Guidelines for Areas in and near the Ravines

- Protect the visual qualities, ecological values, and historic resources of the campus ravines.
- Limit development within ravines or riparian zones to minimize effects on natural water flows. Grade minimally near ravine edges. Minimize impervious surfaces in new development. Incorporate “green” Low Impact Development (LID) storm water management practices into construction and operations.
- Protect wildlife corridors in the ravines by minimizing infrastructure intrusions and avoiding the introduction of excessive artificial night lighting.

- Locate major circulation routes, whether vehicular or pedestrian, over bridges that span the ravines rather than along paths and roads through them.

General Guidelines for the Open Space Network

- Minimize construction of structures within the open space network. When structures are required, site and design them and their supporting infrastructure sensitively, using massing, height, materials and color that are compatible with the surrounding landscape.
- Site development in land areas designated for development—the Academic Core, Campus Support, Colleges and Student Housing, Employee Housing, and Physical Education and Recreation—so as to create open spaces that form compatible links into and among Campus Natural Reserve, Protected Landscape, and Site Research and Support designations.
- Provide opportunities for interpretation or informal recreation in Campus Natural Reserve, Protected Landscape, and Site Research and Support designations.

Guidelines for Site Research and Support Facilities

- Reduce the visual impact of buildings as much as possible, consistent with program needs.
- Arrange buildings in compact clusters, limit building mass and height, and use vernacular forms, materials, and colors appropriate to a central California agricultural setting.

Guidelines for Physical Education and Recreation Facilities

- Step playing fields with the terrain and avoid grouping fields into “super fields” requiring large amounts of grading and major tree removal.
- Site buildings and parking, particularly large scale recreational and assembly facilities, so as to leave the campus open space network intact.
- Enliven the exterior surfaces of and spaces around recreation facilities with uses that encourage human activity and interaction (e.g., climbing walls, exterior playing courts, intimate lawn areas for stretching and yoga, etc.)
- Consider the use of green walls and sod roofs to protect views from adjacent areas, particularly at meadow sites.
- Design and develop facilities that minimize water demand and energy use.
- At meadow sites, limit plantings to low, water-conserving grasses and shrubs.
- Shield outdoor lighting to avoid night sky light pollution, and schedule its use to minimize lighting intrusions upon local residents and wildlife.

General Building Guidelines: Programming

- When developing building and facility programs, seek opportunities to cluster complementary facilities and to maximize the potential use of every building site. (The combination of programs for the Bay Tree Bookstore, the Graduate Commons, Career Center, and Student Affairs

conference rooms to create the complex around Quarry Plaza is a good example of this.)

General Building Guidelines: Siting

- Site buildings so as to protect visually and ecologically significant landscape features.
- Connect future buildings and public spaces to an integrated campus circulation system. Design buildings in clusters that support the larger “warped grid” of campus pedestrian paths. Find opportunities when siting and designing building clusters to improve disabled access throughout the campus, particularly for wheelchair users.
- Avoid free-standing single buildings set as objects in the landscape. When a building’s program or scale requires a single building, and particularly when it is anticipated to be a first phase with future additions, design the building to anticipate future clustering.
- If programmatically desirable, consider infill buildings at existing colleges for all appropriate uses: academic, research, faculty offices, housing, etc.

General Building Guidelines: Design

- Build no taller than the surrounding tree canopy.
- Make buildings that allow all their users to engage with their surroundings, by means of careful window placement, use of outdoor “rooms,” construction of roof terraces, and the like.
- Design buildings to respond to both the natural and the built elements of UCSC’s complex visual environment, reflecting its variety and richness without disrupting its cohesion.
- Integrate energy saving elements and carbon reduction strategies into each building.
- Use exterior building materials and massing that integrate visually with the surrounding landscape.
- Design buildings and other facilities within or adjacent to clusters, whether new or existing, using massing, height, materials, and color that relate sensitively to each other and to their natural surroundings.
- Visually screen service functions and delivery areas from public spaces and pedestrian ways.

Guidelines for the Colleges and Housing

- Reflect the design of the existing college with infill buildings. Design them to create new, or to strengthen existing public spaces.
- Design new building clusters, and infill within existing clusters, using a similar palette of massing, height, materials and color.
- Incorporate a mix of uses into new housing complexes, creating distinct “college-like” communities for living and learning.
- Emphasize pedestrian spaces and paths when planning building clusters. Open spaces should be destinations as well as focuses of the building clusters.

Guidelines for the Campus Core

- Site new buildings to create or enhance distinct clusters, each with at least one sunny public open space or courtyard that encourages congregation and activity, especially in forested areas.
- Design new buildings to create a sense of architectural cohesion with existing structures nearby.
- Retain a lattice of tree canopies and natural understory to provide aesthetic continuity and wildlife corridors between the ravines and among development clusters.
- Reduce and manage vehicular traffic along McLaughlin Drive in order to improve the pedestrian experience there.
- Knit the building clusters together with a “ladder” of east-west roads stepping up the hill (Meyer, Steinhart, McLaughlin, and Chinquapin Drives) and a “warped grid” of major footpaths that connect all colleges together and connect the colleges to the core. Use building clusters to define the pedestrian system of major pathways and plazas extending the campus grid of public walks.

Guidelines for the Sciences and Engineering Area

- Strengthen the north-south pedestrian spine, siting buildings and their main entry points so as to create a hierarchy of distinct outdoor spaces.
- Reserve ravine edges for smaller structures to limit visual encroachment on the ravines, and to maintain their ecology.
- Maintain service functions at the perimeter of the area to limit pedestrian-vehicular conflicts.

Guidelines for the Arts Area

- Maintain a clear meadow boundary when siting buildings near the Great Meadow, keeping the height of any development lower than the forest backdrop when viewed from downhill vantage points.
- Cluster facilities to create space for public and social events, for study, practice, rehearsal, and instruction, separating incompatible uses as appropriate. Capitalize on the Arts Area’s remarkable surroundings and magnificent views to create public spaces to attract and delight campus visitors and members of the community alike.
- Strengthen both vehicular and pedestrian routes to the theaters, galleries, and other public spaces, using roads, pathways, lighting, and signage to direct visitors, to the appropriate destination. Create bright and distinctive entry areas for theaters and other public spaces.

Guidelines for the Student Life Area

- Plan for phased development, with each phase able to function independent of subsequent phases, without foreclosing future opportunities.
- Maintain the sense of Quarry Plaza as a pedestrian destination and transportation hub. Design new buildings surrounding Quarry Plaza to shape active outdoor public spaces.
- Design new buildings adjacent to Quarry Plaza to fit the scale and character of the existing complex and the historic character of its site

by articulating their separate elements and avoiding massive buildings and a vast open plaza.

- Explore the potential of adding bridges to create a “triangle” of student serving areas: Quarry Plaza, the OPERS East Field House Complex, Hahn Student Services, ARCenter, McHenry Library, and the Classroom Unit.
- Integrate approaches, support facilities and entry to the Quarry Amphitheater with development in and around the Quarry Plaza. Design improvements to the Quarry Amphitheater to defer to the scale, character, and form of the historic quarry.
- When planning development near the upper edges of the quarry consider the effect of views from the Quarry Amphitheater on its historic character.

Guidelines for Areas in and near the Historic District

- Preserve the historic buildings and landscape around the campus entrance as important remnants of local history, emblematic of the historic use of the site. Protect the historic integrity of the structures by matching program uses to historic structures to avoid alterations that adversely affect the historic character of the district.
- Follow the Secretary of the Interior’s guidelines and standards for historic rehabilitation and restoration when undertaking any maintenance to or alteration of any of the historic buildings that contribute to the National Register eligibility of the historic district. Conduct any excavation within the historic district and in some adjacent areas under observation by a qualified archaeologist.
- Improve and enhance compatibility of circulation routes with the historic appearance of the district. Minimize new parking and paving in the area, and reduce the visual impact of parking and paving already there.
- Preserve and enhance landscape setting elements that contribute to the district’s historic feeling and association. Avoid introduction of incompatible ancillary elements (e.g., fences, lights, signs, site furniture).
- Preserve significant vistas in order to retain the historic landscape character. Retain the architectural character and spatial relationships among buildings and features that have a high degree of historic integrity.

Guidelines for the Campus Support Area

- Site new buildings and design their height and massing to minimize visibility from the main entrance. Design those structures that are visible from the main entrance using massing, height, materials and color that are compatible with existing features.
- Site new buildings in distinct clusters framing informal courtyard spaces similar in character and scale to the courtyard and garden at the Carriage House and Cardiff House.
- Use landscape screening to visually screen service operations from Cardiff House, the Carriage House, and major pedestrian routes.
- Plan vehicular access to service facilities to be efficient and to minimize conflicts with bicycles, pedestrians and private vehicles.

Guidelines for the Circulation Network

- Integrate circulation planning and phasing with development of the facilities that the roads and paths will serve. Align future roads and paths to allow flexibility of land use. The circulation system should encompass and unify the land, not dictate its use.
- Extend the “ladder” of roads and “warped grid” of paths to serve future development to the north.
- Adapt roads, paths, and bridges to their terrain and to nearby dominant trees. Use grading and planting to screen road alignments, particularly through sensitive viewsheds. Where possible, align roads and paths to reveal and emphasize unique and character defining landscape elements: special plant communities, limestone outcroppings, views, etc.
- Consolidate parking in collector facilities at the periphery of the central campus, in locations well served by public transit and campus shuttles.
- Integrate planning for bicycle use into area plans and project design, including solutions like conveniently located bike parking areas, showers for cyclists distributed around campus, and easy access to transit and pedestrian routes.
- Use Low Impact Development Best Management Practices (LID BMPs) in siting, designing, and building roads, paths, and parking areas

Guidelines for the Road Network

- Adapt roads, paths, and bridges to the terrain. Consider views and vistas, both towards and away from the roadway, when determining road alignments and developing grading plans. When possible, use road alignments to reveal unique, character-defining landscape elements.
- Use grading and planting to screen road alignments through sensitive viewsheds.
- Design roadways to include infrastructure (e.g., transit stops, lighting, turning lanes, bike lanes) necessary to support transit services and bicycle circulation.
- Site buildings and building clusters to allow shared use of service roads and delivery areas.
- Separate the service and delivery approaches to buildings from their main entrances and pedestrian routes to them.

Guidelines for the Pedestrian Path Network

- Fill in gaps in the warped grid network of paths by maintaining east-west connections roughly on continuous contours, and routing north-south connections to result in gradual elevation changes. Reinforce pedestrian connections between the colleges and the core.
- Identify and develop a clear hierarchy of paths within the network, planning path width, lighting, signing and wayfinding devices, and similar pedestrian amenities to reflect anticipated pedestrian traffic. For instance, reinforce the north-south walk connecting Science and Engineering Hill and the Arts Area, extending it northwards as future development occurs.

- Plan paths and site and design building clusters to improve disabled access throughout the campus, particularly for wheelchair users.
- Design development to reduce pedestrian-vehicle conflicts, separating service and delivery functions from paths as much as possible.
- Strengthen pedestrian connections and provide wayfinding and safety information at transit stops to encourage walking and transit use.
- Create a clear sense of entry and arrival at building clusters.

Guidelines for Infrastructure and Utilities

- Coordinate infrastructure planning and utility runs with development of building sites and road and path alignments.
- Follow guidelines for land and buildings when planning and designing infrastructure systems or technologies that require construction above ground (e.g., heating plants, thermal storage arrays, cellular telephone towers, solar panel arrays).
- Express storm water management elements—downspouts, conveyance swales, retention and detention structures, and the like—in building and in site design.
- Integrate energy saving elements and carbon reduction strategies into the planning, design, and construction of infrastructure systems, and express them in design.

Appendix F:

Bibliography of Past Planning Studies and Guidelines

Long Range Development Plans

1963 Long Range Development Plan

UCSC's 1963 *Long Range Development Plan* responded to the opportunities and challenges presented by both the new campus's innovative collegiate structure and the large and geographically diverse Cowell Ranch site. In their thoughtful approach to this task, the early planners established the basic values and stewardship guidelines that continue to guide campus development.

The 1963 *LRDP* assumed that the campus would grow to an enrollment of 27,500 by 1990 to accommodate the anticipated "baby boom" and accelerated migration into California. It described a campus that would eventually consist of up to 20 residential colleges and ten professional schools extending the full length and breadth of the campus. It called for housing at least 50 percent of the student body and faculty on or near the campus.

The 1963 plan defined the following planning premises:

- A moderately dense central academic and research core encircled by lower density development consisting of self-contained colleges and professional schools
- A commitment to environmental stewardship, including the protection of significant natural features (such as the expansive meadow at the base of the campus) and establishment of natural reserve areas
- Ongoing cooperation with the surrounding communities with the goal of "mutually advantageous growth"

1971 Long Range Development Plan

The first revision of the original *LRDP* was adopted in 1971. Like the earlier document, it assumed an eventual enrollment of 27,500, but suggested a longer time frame for achieving that target (2000 or beyond). The 1971 plan also called for a denser central core to increase community cohesion, pedestrian convenience, and environmental protection.

The 1971 *LRDP* identified significant natural resource areas. It also designated three large Inclusion Areas to accommodate activities that, while not directly related to academic activities of the campus, would

provide facilities or services advantageous to the functioning of the campus community.

1977 Long Range Development Plan

In the late 1970s, state budget cutbacks and reduced enrollment forecasts resulted in a scaling back of UCSC's expansion plans. The 1978 *Long Range Development Plan* was set in a framework of more limited projected growth than either of the previous plans. It called for intensification of development in the campus core to enable UCSC to accommodate an enrollment of 7,500.

Following the lead of its 1971 predecessor, the 1978 plan identified three large Inclusion Areas and added a fourth. Proposed building sites were tightly circumscribed, and much of the remainder of the campus was identified as Reserve Areas. Energy conservation, preservation of the natural environment, and close community relationships were cited as key campus planning objectives.

1988 Long Range Development Plan

UC Santa Cruz's most recent *LRDP*, prepared in 1988, was predicated on the campus's 1985 *Twenty-Year Academic Plan*, which established objectives through 2004-05. The academic plan projected an enrollment of 15,000 (including 15 to 20 percent graduate students) by 2004-05. The 1988 *LRDP* reaffirmed UCSC's commitment to:

- A concentrated, pedestrian-friendly academic/research campus core, surrounded by distinctive residential colleges
- The role of the colleges as important centers of intellectual and residential life
- Preservation of the natural setting

The 1988 *LRDP* assumed 7.5 million gross square feet of building area; 12 residential colleges; and up to 8,400 parking spaces. It also set out general guidelines that limited development in certain natural areas from development, including establishment of the Campus Environmental Reserve, designed to protect natural features of particular teaching and research value to the campus. Protected Landscapes were established to protect certain environmental resources, including wildlife corridors and vegetation with ecological or aesthetic importance (see Figure 2, 1988 *LRDP* Land-Use Plan). Campus Resource Land, located primarily in the

northern portion of the campus, was designated for possible future development, but was to be maintained almost entirely in its natural state under the terms of the 1988 LRDP.

2005 Long Range Development Plan

The 2005 LRDP is discussed in chapter 2 of this *Framework*

Campuswide Studies

2005 Long Range Development Plan

2005 Long Range Development Plan Final Environmental Impact Report, October 2005/September 2006.

Comprehensive Settlement Agreement by and between the City of Santa Cruz ("City"), the County of Santa Cruz, The Regents of the University of California and the University of California, Santa Cruz Campus, Coalition for Limiting University Expansion; Don Stevens, Peter L. Scott, Hal Levin, Jeffrey M. Amett, Harry D. Huskey, Kaye Beth, Eric M. Grodberg, Sigrid McLaughlin, John C. Aird, Russell B. Weisz, Helen B. Dowling, and Rural Bonny Doon Association, August 15, 2008.

Strategic Academic Plan

Strategic Academic Plan, Office of the Campus Provost/Executive Vice Chancellor, University of California, Santa Cruz, 2008.

Strategic Futures Committee

Strategic Futures Committee Final Report, June 25, 2004. Prepared by the Strategic Futures Committee, The process was initiated in fall 2003, with the appointment of the Strategic Futures Committee (SFC), an administrative committee which included a broad spectrum of faculty, academic administrators, and students from across UCSC's divisions. The committee was asked to articulate the academic rationale, principles and factors related to campus growth; identify significant or emerging academic directions; quantify physical requirements; define the qualities of the UCSC campus that should be addressed; and to recommend a student enrollment on which to base the 2005 LRDP. Available on-line at <http://planning.ucsc.edu/sfc/docs/06-25.strategic-futures.htm>.

1988 LRDP Implementation Program

Implementation Program for the [1988] Long Range Development Plan, University of California, Santa Cruz. 1993. Prepared by Campus Planning Consultants, Professor Richard Bender with Skidmore, Owings and Merrill and EDAW. Clarifies the vision behind the 1988 LRDP, developed principles to guide campus development, suggested phasing strategy, developed directions and goals for architecture and landscape architecture, and recommended an approach to improving the transportation and circulation system.

Campus Transportation Planning Study for the UCSC LRDP. 1994. Prepared by MKK Transportation, Joni L. Janecki & Associates, Deakin, Pageler, and Bice. Prepared in conjunction with the 1993 Implementation Program. Recommends multimodal approach to campus transportation planning.

UCSC Landscape Management Plan. 1995. Prepared by Scaramozzino. Develops specific management principles and a framework for landscape management decisions, based on the guidelines of the 1993 Implementation Program.

Employee Housing

Cardiff Terrace Architectural Guidelines, 2003.

Hagar Court Architectural Guidelines, 2004.

Employee Housing Master Plan. 2006. Prepared by Brailsford & Dunlavey. Provides overall strategic guidance for all aspects of employee housing consistent with the parameters set forth in the 2005 LRDP. Includes an analysis of the market context, summary of various options, and recommendations for an approach to employee housing consistent with the Campus' underlying values, priorities and goals.

Employee Housing Administration Plan. 2008. Physical planning and financial feasibility study for provision of additional employee housing under the 2005 LRDP, with recommended timeline for delivery of additional units.

Ranch View Terrace Architectural Guidelines and Design Standards, 2009.

Sustainability

Annual Earth Summit and Blueprint for a Sustainable Campus. 2003 (Updated 2009.) Compiles the sustainability projects and actions identified by Working Groups at the campus Earth Summit hosted annually by the Student Environmental Center.

Campus Sustainability Assessment. 2007 (Updated 2008.) Commissioned by the Campus Sustainability Subcommittee (CSS), an official deliberative body for campus sustainability (reporting to the Advisory Committee for Campus Planning and Stewardship). Provides a summary of current conditions in all areas of campus operations and development related to sustainability, and indicates key priorities and opportunities for improving campus sustainability practices.

UCSC Climate Action Plan. 2010. Prepared by the Chancellor's Council on Climate Change. Presents inventory of existing campus greenhouse gas emissions and analyzes potential measures to reduce these emissions to meet the Campus' commitments under the University of California Policy on Sustainable Practices, the American College and University Presidents Climate Commitment, and the Santa Cruz Climate Action Compact.

Transportation and Circulation

University of California, Santa Cruz, 2008 Bicycle Plan. November 2008. UCSC Transportation and Parking Services. A guide for improving bicycling conditions and supporting bicycling as a sustainable transportation mode on, to and from the UC Santa Cruz campus, the Marine Science Campus, and 2300 Delaware Avenue. (Since the City of Santa Cruz is the jurisdiction responsible for requesting funding for bike

lanes, the plan has been adopted as an appendix to the City of Santa Cruz Bike Plan In order to qualify UCSC for such monies.)

UCSC Comprehensive Transit Study. January 2004. Prepared by Urbitran. Evaluates the effectiveness of the two transit systems serving the campus—the Santa Cruz Metropolitan Transit District (SCMTD) and TAPS' Campus Transit—to meet current and future service demands. The study includes recommendations for service enhancements (routes, schedules, etc.), vehicle fleet characteristics (style, capacity and number), and infrastructure improvements (roadways, pullouts, shelters).

UCSC Pedestrian Data Collection and Analysis. January 2004. Prepared by Urbitran. This study documented the character and scale of travel delays experienced by motor vehicles, including SCMTD and Campus Transit vehicles, as a result of uncontrolled pedestrian traffic crossing campus roadways at numerous intersections and crosswalks.

Campus Natural Reserve

Recommendations for Teaching and Research in Natural Resources at Santa Cruz. 1963. Stanley A. Cain. A review of the potential for a UCSC Campus Natural Reserve, done at the request of founding chancellor Dean E. McHenry.

Natural Resources Study for the Santa Cruz Campus of the University of California. 1966. Robert H. Twiss.

A Plan for a Natural Areas Reserve on the UC Santa Cruz Campus. 1983. Robert Weiner and Professor Kenneth S. Norris. A proposal for a natural reserve as part of the UCSC campus.

Academic Plan for the Campus Natural Areas Reserve. 1985. Martha Brown and Professor Kenneth S. Norris. A comprehensive assessment of the uses, values and management strategies for the UCSC Campus Natural Reserve.

UCSC Campus Natural Reserve Academic Plan. 2002. Margaret Fusari (edited by Martha Brown). An updated academic plan for the UCSC Campus Natural Reserve.

Campus Area Plans and Studies

Corporation Yard Planning Study. 1996. Planning study for Corporation Yard, including siting of new Emergency Response Center.

Inclusion Area D Master Plan. 2001. Prepared by Moore Ruble Yudell. Master Plan for faculty and staff housing project (Ranch View Terrace).

Growth and Stewardship Planning. 2001. Prepared by the Growth and Stewardship Task Force. Physical capacity study and analysis of environmental resource issues in the north campus to evaluate the feasibility and potential environmental effects of meeting the campus' housing goals under the 1988 LRDP.

Core Capacity Study. 2003. Prepared by Sasaki Associates, Inc. Analysis of capacity of Campus Core to accommodate additional academic facilities under the 1988 LRDP.

Student Life Facilities Planning Study. 2003. Prepared by Skidmore, Owings & Merrill LLP with Ellerbe Becket, Paul Roberts + Partners, Davis Langdon Adamson, and Brailsford and Dunlavey,. Study of the feasibility of developing new student life facilities, including a Student Union, Quarry Amphitheater improvements, a Recreation/Event Center, and improved recreation fields.

Arts Area Plan. 2004. Prepared by Thomas Hacker Architects, Inc., and landscape architects Walker Macy. Considers long-term planning for the Arts Area and confirms the siting of the Digital Arts Facility.

Science and Engineering Area Plan. 2005. Prepared by Anshen and Allen/ Los Angeles. A detailed elaboration of the Core Capacity Study for the north portion of the Campus Core, also intended to serve as a background for the 2005 LRDP.

East Campus Facilities Study. 2008. Prepared by Sasaki Associates, Inc. Planning study for expanded athletic facilities, Events Center, and expansion of East Remote Parking Lot including a transportation hub.

Utility and Infrastructure

General

UCSC Campus Utilities Master Plan 1972-1980. 1972. Prepared by Kennedy Engineers. Analyzes expansion of the campus's utility systems to serve a projected enrollment of 10,000.

Heating and Cooling Water

Heating Water System Master Plan. 2003. Prepared by Rogers & Associates. Provides a hydraulic analysis of the existing system and proposes a plan for system expansion to handle existing and projected future loads.

UC Santa Cruz Cooling Water Infrastructure Study. 2004. Prepared by Salas O'Brien Engineers. Engineering study to determine the most cost effective solution to expanding the campus' cooling infrastructure to meet future load projections.

Electrical

Master Plan Document for High Voltage System, University of California Santa Cruz. 2002. Prepared by Applied Power. Analysis of and recommendations for improvements to the 12kV (central campus) electrical distribution system.

Draft Cogeneration Feasibility Study. 2005. Prepared by Kuhn and Kuhn. Evaluates the costs, basic energy parameters, and savings from implementation of five options for replacement of the campus cogeneration system.

Domestic and Fire Protection Water

Campus Water System Operational Analysis and Master Plan UC Santa Cruz. 2001. Prepared by Kennedy/Jenks Consultants. Developed hydraulic model of campus water distribution system and recommended additions to accommodate planned growth, based on potential new buildings under 1988 LRDP.

Natural Gas

UC Santa Cruz Natural Gas Master Plan. 2004. Prepared by Rogers & Associates. Models system behavior in peak usage and projected future usage. Provides recommendations for improvements to address both existing and future demand requirements.

Storm Water

Evaluation of Drainage Conditions at the University of California Santa Cruz under Existing and Proposed Campus Development. 1988 (Revised 1989). Prepared by N.M. Johnson. Analysis of existing conditions and potential impacts under the 1988 LRDP. Recommendations guided LRDP EIR mitigations and planning for drainage improvements under the 1988 LRDP.

Stormwater and Drainage Master Plan. 2004. Prepared by Kennedy/Jenks Associates. Documents existing channel and sinkhole conditions, and provides recommendations for upstream and in-channel improvements to repair and/or prevent erosion and for inspection, monitoring and maintenance of the campus storm water drainage system.

Water Conservation Planning

Water Efficiency Study. 2007. Prepared by Maddaus Water Management. Inventory of UC Santa Cruz' existing water use facilities and operations to determine the current level of water conservation. Recommends measures for reducing water use in existing facilities. Campus has committed to implementing this report's "high-priority" recommendations within five years.

Preliminary Alternative Water Supply Assessment. 2008. Prepared by ARUP. A general assessment of potential use of rainwater, greywater and recycled wastewater for existing and future development on the campus. Compares existing and future demand for non-potable demand with potential sources.

Water Re-Use Feasibility Study. 2009. Prepared by Carollo Engineers. Identifies and assess the feasibility of immediate, near-term, and long-term projects on the main campus for use of rainwater, greywater or recycled wastewater.

Environmental Data and Baseline Studies**Land/Forest Management**

Proposed Forest Management Plan for Upper Campus Lands. 1982. Hammon, Jensen, Wallen, & Associates. Assesses potential for managing the north and upper campus as a timber resource.

Campus Lands Management Plan. 1986. Prepared by J.R. McBride. Vegetation mapping and ecological ranking of forest lands in the central campus. Recommends that lands with the highest ecological ranking be highest priority for protection.

Analysis of Vegetation and Land Management Program. Prepared for the University of California, Santa Cruz. 1987. Prepared by J. R. McBride. Prescribes measures to maintain and restore redwood and mixed evergreen forest in the core campus.

Land Management Study for Fire Prevention. 1995. Prepared by Stephen R. Staub. Wildland fire hazard study for lower and central campus, including recommended vegetation management measures to reduce fire hazard.

Biological Resources

Fauna Baseline Study for the UCSC Long Range Development Plan. 1986. Prepared by Robert M. Ferris. Baseline wildlife setting for 1988 LRDP EIR.

Botanical Survey for University of California, Santa Cruz Long Range Development Plan: Baseline Study. 1986. Prepared by R. E. Buck. Baseline botanical resources setting for 1988 LRDP EIR.

Assessment of Wildlife Impacts for the UCSC Long Range Development Plan. 1987. Prepared by Robert M. Ferris. Analyzes wildlife impacts of 1988 LRDP, for LRDP EIR.

Botanical Survey for University of California, Santa Cruz Long Range Development Plan: project actions, impacts, and mitigation measures. 1987. Prepared by R. E. Buck. Analyzes wildlife impacts of 1988 LRDP, for LRDP EIR.

Botanical Survey for University of California, Santa Cruz, Long Range Development Plan. Supplement I. 1987. Prepared by R. Morgan. Covers a portion of the upper campus (Marshall Field) that were not covered by Buck's 1986 baseline botanical survey for the 1988 LRDP EIR.

Burrowing Owl and Golden Eagle Study, University of California, Santa Cruz Campus. 1989. Prepared by Biosystems Analysis. Analyzes potential impacts to these species from development under the 1988 LRDP in grassland areas of the lower campus.

Grasshopper Sparrow Study, UCSC Campus. 1989. Prepared by Biosystems Analysis. Survey for this species in campus grasslands, found it only in Inclusion Area A, southwest of Empire Grade.

University of California Santa Cruz California Red-Legged Frog Site Assessment. 2000. Prepared by EcoSystems West Consulting Group. Draft Evaluation of Potential California Red-Legged Frog Habitat on Central and Lower Campus.

California Red-Legged Frog Site Assessment of the University of California, Santa Cruz Lower Campus. Draft. 2002. Prepared by Jones and Stokes. Prepared as background to Ranch View Terrace HCP.

UC Santa Cruz Campus-Wide Habitat Assessment for the Ohlone Tiger Beetle. 2002. Prepared by Entomological Consulting Services, Ltd. Prepared as background to Ranch View Terrace HCP.

UCSC - San Francisco Lacewing Survey Report. 2003. Prepared by Entomological Consulting Services, Ltd. Survey to determine whether the species is present at UCSC. Concluded that species is not present despite suitable habitat.

Botanical and Wildlife Assessment of the University of California, Santa Cruz North Campus Study Area. 2004. Prepared by EcoSystems West (EcoSystems West Consulting Group). Baseline survey of north campus.

Biological Baseline Study of the Lower, Central, and Upper Campus, University of California, Santa Cruz. 2004. Prepared by Jones & Stokes. Baseline survey for 2005 LRDP EIR.

Cavernicolous Invertebrates of Cave Gulch, Santa Cruz County, California. 2007. Prepared by D. Ubick. Published by California Academy of Sciences. Available on-line at www.parks.ca.gov/pages/734/files/cavebio.pdf. Academic study of invertebrates inhabiting caves on and near the campus.

Geology/Hydrology/Hydrogeology

Preliminary Geological Study Proposed Santa Cruz Campus. 1963. Prepared by Robert S. Cooper. Planning-level engineering geology assessment based on literature review and field reconnaissance.

Soils of the UC Santa Cruz Campus. 1963. Prepared by Rodney Arkley. Detailed field survey and lab and greenhouse fertility studies of campus soils, with conclusions regarding landscaping potential.

Groundwater Hydrology Study, Phase 1 Report. 1985. Prepared by Rogers E. Johnson Associates. Preliminary evaluation of potential for development of groundwater resources on the campus.

Geologic Report UC Santa Cruz Campus. 1987. Prepared by Rogers E. Johnson and Associates. Geologic map and hazard assessment, including the first campus karst hazard map.

Evaluation of Drainage Conditions at the UCSC under Existing and Proposed Campus Development. 1988. Prepared by Nicholas Johnson, and Weber Hayes.

Evaluation of Groundwater Resources at UC Santa Cruz, Parts I and II. 1989. Prepared by N.M. Johnson, and Weber & Associates. Detailed analysis of groundwater resources on the campus, including drilling of test wells, 7-day pumping test of WSW#1, and spring flow monitoring.

Geology and Geologic Hazards, Santa Cruz Campus, University of California. 1993. Prepared by Weber & Associates. Update of 1987 Rogers Johnson Associates geology map and report.

Results of a Groundwater Tracing Study – UC Santa Cruz. 1994. Prepared by T. Aley, and Weber & Associates. Dye tracing study of connectivity between WSW#1, East Remote sinkhole, and off-campus springs.

Geologic and Hydrologic Resource Assessment, North Campus Planning Area. 2000. Prepared by Nolan Associates. Part of the north campus planning study series. Includes description of geology and geologic hazard assessment, results of groundwater level and spring flow monitoring, and recommended mitigations for potential impacts to surface water and groundwater from future development.

Report on Drainage and Erosion Conditions, North Campus Planning Area. 2000. Prepared by Nolan Associates. Part of the north campus planning study series. Includes compilation of existing soils and erosion data, analysis of existing and potential erosion problems, and recommended mitigations for erosion hazards associated with future north campus development.

Preliminary Geotechnical Investigation for North Campus Planning Study UCSC. 2000. Prepared by Steven Raas Associates. Planning-level geotechnical investigation, including review of maps and aerial photos, exploratory drilling, and engineering analysis of field and lab test results.

Dye Tracing Study in Limestone Karst – UC Santa Cruz Physical Science and College 9 and 10 Residence and Dining Hall Proposed Building Sites. 2000. Prepared by Weber, Hayes & Associates. Dye tracing study to evaluate potential impacts to off-campus springs from pressure-grouting of doline fill in the central campus.

Dye Tracing Study in Limestone Karst – UC Santa Cruz Cowell College Housing Proposed Building Sites. 2000. Prepared by Weber, Hayes & Associates. Dye tracing study to evaluate potential impacts to off-campus springs from pressure-grouting of doline fill in the central campus.

Dye Tracing Study in Limestone Karst – UC Santa Cruz Proposed Engineering Building Site. 2000. Prepared by Weber, Hayes & Associates. Dye tracing study to evaluate potential impacts to off-campus springs from pressure-grouting of doline fill in the central campus.

Revised Geology and Geologic Hazards. 2005. Prepared by Nolan Zinn Associates. Updates 1993 Weber & Associates geologic map and hazards assessment for the entire campus.

72-Hour Constant Rate Well Pumping and Aquifer Recovery Test and Pumping Impact Assessment for UCSC Water Supply Well #1 (WSW#1). 2007. Prepared by Weber, Hayes & Associates. Pumping test of WSW#1, including monitoring of flow in off-campus springs, conducted to update 1989 pumping test of the same well.

Annual Spring Flow and Groundwater Level Monitoring Reports, 1989 to Present. Prepared by Weber, Hayes & Associates. Reports on biannual (or

more frequent) monitoring of spring flow and groundwater levels in on- and off-campus springs and on-campus wells.

Annual Water Quality Monitoring Reports, 1989 to Present. Prepared by Weber, Hayes & Associates. Results of analysis of water samples from on-campus springs, parking lot runoff and on-campus well.

Cultural Resources

UCSC Long Range Development Plan Review of Cultural Resources. 1986. Prepared by Rob Edwards. Cultural resources baseline for 1988 LRDP EIR.

Historic Cowell Ranch Cultural Landscape Report. 1992. Prepared by Paul Rodriguez, Gilbert Sanchez, and Stephen A. Dietz. Inventory of buildings, structures and archaeological features.

Cowell Ranch, Revised Draft Historic District Evaluation, University of California, Santa Cruz. 2002. Prepared by Architectural Resources Group. Evaluation of significance and integrity of the Cowell Ranch Historic District according to the criteria of the National Register of Historic Places and the California Register of Historic Resources.

Baseline Inventory Report for the UC Santa Cruz Campus. 2005. Prepared by Pacific Legacy, Incorporated. Archaeological resources baseline for 2005 LRDP EIR.

List of Historic Structures and Historic Context Statement for UC Santa Cruz. 2005. Prepared by Architectural Resources Group. Historic Resources Baseline for 2005 LRDP EIR.

Draft Cultural Resources Management Plan for the Cowell Ranch and Lime Manufacturing Historic District. 2006. Prepared by UCSC in collaboration with Architectural Resources Group. Presents guidelines, strategies and recommendations for the long-term management of the historic district.

Visual Resources

Visual Analysis of the Lower Campus Grasslands. 1986. Prepared by Pepper Associates. Analysis of the visual sensitivity of the lower campus grasslands and their ability to visually absorb or screen new facilities. Prepared to support 1988 LRDP planning process.

Visual Assessment of the UCSC LRDP. 1987. Prepared by Pepper & Carey. Background document for the 1988 LRDP EIR.

Regulatory Studies

Final Habitat Conservation Plan, Ranch View Terrace, University of California, Santa Cruz. 2005. Prepared by Jones & Stokes. Prepared to support an application to the US Fish and Wildlife Service for an Incidental Take Permit under Section 10(a)(1)(B) of the federal Endangered Species Act. The permit covers incidental take of California red-legged frog and Ohlone tiger beetle resulting from construction and operation of the Ranch View Terrace Project and the Emergency Response Center Project.

Storm Water Management Plan. 2009. Prepared to satisfy the federal Environmental Protection Agency (EPA) Phase II Storm Water regulations, promulgated under the Clean Water Act, and implemented in California by the California Water Resources Control Board's General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems (MS4) (WQ Order No. 2003-0005-DWQ).

Marine Science Campus Planning Studies

UCSC Marine Science Campus – Potential for Alternative Water Supply from Groundwater and Review of Potential Impacts Report. 2007. Prepared by Weber, Hayes & Associates. Assessment of potential to use groundwater for water supply at the Marine Science Campus, based on review of log of former on-site well and other available documents.

Resource Management Plan. 2008. Prepared by John Gilchrist & Associates. Expands on the policies and implementation measures of the CLRDP by providing specificity and detailed guidance for protecting, maintaining and enhancing the natural resources of non-developed areas and avoiding impacts to Younger Lagoon Reserve. Included as an appendix to the CLRDP.

Drainage Concept Plan. 2008. Prepared by Ketley and Associates. Provides a description of existing drainage conditions, performance standards to guide the design of future drainage planning, and a description of methods to be used in the design of the drainage system.

UC Santa Cruz Marine Science Campus Coastal Long Range Development Plan. September 2004, revised December 2008. A comprehensive physical development and land use plan governing development, land use, and resource protection at the UC Santa Cruz Marine Science Campus.

UCSC Marine Science Campus CLRDP Draft Environmental Impact Report, January 2004.

UCSC Marine Science Campus CLRDP Final Environmental Impact Report, September 2004.

UCSC Marine Science Campus CLRDP Final Environmental Impact Report Addendum #1, Proposed Revisions to the CLRDP, November 2006.

Marine Science Campus Area Plan, 2008. Prepared by Walker Macy. Creates a framework for the next 20 to 30 years of development. Lays out the CLRDP program with particular attention to the area in the "Middle Terrace," where most new development would occur.

UC MBEST (Monterey Bay Education, Science, and Technology Center) Planning Studies

University of California Monterey Bay Education, Science, and Technology Center Master Plan, December 1996. Prepared by Economic and Planning Systems. Presents a land use, infrastructure, and management plans and architectural design guidelines for a 437-acre mixed-use campus and a

605-acre natural reserve at the former Fort Ord. Available on-line at www.ucmbest.org/Development/MasterPlan/Master.htm.

Installation-wide Multi Species Habitat Management Plan for Former Fort Ord, California. Prepared by the U.S. Army Corps of Engineers, Sacramento District, April, 1997. Available on-line at www.fortordcleanup.com/adminrec/ar_pdfs/AR-BW-1787/.

UC MBEST Center Conceptual Landscape Plan, February 2003. Joni Janecki & Associates.

MBEST Center Master Plan and the Tenant Signage Guidelines, February 2003. Kate Keating Associates, Inc.

2300 Delaware Planning Studies

Planning Parameters for 2300 Delaware Avenue Building C, 2005.

Recommendation for Occupancy of 2300 Delaware, Buildings A & B. 2005. Memorandum from UCSC Space Planning Committee on Building C, 2300 Delaware to CP/EVC Kliger.

Space Planning Committee Recommendations for 2300 Delaware, Building C. 2006. Memorandum from UCSC Space Planning Committee on Building C, 2300 Delaware to CP/EVC Kliger.

2300 Delaware Data Center, Building C, Basis of Design. 2006. Prepared by the Office of Physical Planning and Construction, UCSC.

Feasibility Study for Santa Cruz Technology Transfer Center at 2300 Delaware Avenue. 2007. Prepared for The City of Santa Cruz Redevelopment Agency by Bay Area Economics.

2300 Delaware Code Study. 2007. Prepared by consulting engineers Ackerman-Practicon.

“Town-Gown” Studies Prepared in Collaboration with Local Jurisdictions and Agencies

City of Santa Cruz Master Transportation Study. 2003. Prepared by Fukujii Planning & Design. Jointly funded by the City of Santa Cruz and the University. An integrated pedestrian, bicycle, transit and street transportation plan that was designed to serve as a foundation for updating the City’s General Plan and zoning ordinance, UCSC’s Long Range Development Plan and other city and regional transportation planning documents.

Bay Corridor Preliminary Feasibility Analysis Bus Rapid Transit. 2006. Prepared by Urbitran Associates. A preliminary feasibility analysis and conceptual plan for Bus Rapid Transit (BRT) service from Santa Cruz to UCSC via the Bay Street/Bay Drive corridor.

Campus Housing Study and Market Analysis. Brailsford and Dunlavy. 2007. Intended to provide data, analysis, and recommendations for future cooperation between the campus and off-campus communities in addressing the need for affordable workforce housing in the Santa Cruz area. This study implemented two related mitigation measures included in the *2005 LRDP EIR*.



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