



**University of California Riverside**

# **Campus Design Guidelines**

**Prepared by**

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## Contents

INTRODUCTION	3
GOALS/POLICY MANDATES	4
CAMPUS FRAMEWORK	5
Regional Context	5
The Essence of the UCR Campus	6
Campus Open Space Structure	7
Icons	10
Site Planning Districts	12
Regulating Plan	14
Circulation Systems	16
Architectural Elements	19
Sustainability	23
SITE GUIDELINES	S-1
Planting	S-2
Paving	S-6
Site Lighting	S-8
Furnishings	S-9
Grading and Rainwater Management	S-13
Circulation Systems	S-14
Service Areas and Drives	S-15
Surface Parking Lots	S-16
Campus Wide Signage	S-17
ARCHITECTURAL GUIDELINES	A-1
Outdoor Circulation	A-2
Building Orientation and Entrances	A-4
Relationship of Interior to Exterior at Ground Floor	A-6
Building Massing and Articulation	A-8
Building Materials and Color Palette	A-10
Building Response to Climate	A-12
CONCLUSION	A-14
APPENDICES	
Appendix A: Campus Plant Material Palette	
Appendix B: Campus Street Tree Plan	
Appendix C: Documents Referenced	
Appendix D: Circulation Standards	
Appendix E: Sign Program (under separate cover)	



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## INTRODUCTION

The University of California, Riverside (UCR) presents a unique continuity of buildings and landscape, due to its striking natural setting, relatively short history and modernist design origins. An enduring rational arrangement of modern buildings frames a set of linear malls at the base of rugged semi-arid mountains. This form has been strengthened over 50 years by contemporary construction that continues to honor the legacy of the UCR landscape. UCR is committed to respecting the beauty, order and intrinsic character of the campus as enrollment grows and the academic mission continues to evolve.

UCR is expected to grow dramatically in the coming decades. This growth will challenge the University and its designers to understand the essence of the campus and promote a consistent aesthetic by infusing each project's design with a sense of place. This document is intended to provide simple and legible guidelines to shape future growth, allowing the campus to evolve in a dynamic way that recognizes the physical and academic roots that define UCR's character. These guidelines describe for future architects and planners, the fundamental characteristics of the University's mission, setting, history, landscape and architectural form that must inform any physical changes to the campus.

This document begins with a summary of UCR's long range development goals, followed by a description of the existing campus design framework. The framework serves as the underpinnings for future development, emphasizing the elements of the campus landscape and infrastructure as well as architectural themes emblematic of the University's character.

Following this framework is a description of the current University of California system mandates for sustainability, which includes a commitment to Leadership in Energy and Environmental Design (LEED) standards and other key benchmarks for energy and resource efficiency and pollution reduction. In addition, each individual guideline in this document includes, where applicable, information on how campus development projects can meet University of California system sustainability mandates through the implementation of the guideline.

The main body of this document, the Site and Architectural Guidelines, is not intended to be prescriptive but to establish the basic premises and clear intent within which creative design decisions should be made. **The University should hire professionals who are committed to implementing these Guidelines. Designers will be expected to respect the form and values of the campus and work collaboratively with the University under the guidance of this document, the Campus Architect and the campus Design Review Board.** There will be an inherent level of respect with professionals trusted to follow the basic intent of the guidelines while creatively responding to new building programs, individual sites and ensuing design opportunities.

This document replaces the 1996 Campus Design Guidelines and the 1996 Landscape Master Plan (construction specifications will subsequently be updated as needed.)



## GOALS

The goal of these Design Guidelines is to support UCR's vision for the future. This document serves to implement the 2005 Long Range Development Plan (LRDP), which expresses UCR's vision and goals related to the campus's physical development, including:

- Enhancing UCR's image and identity
- Accommodating planned growth for UCR to at least 25,000 students
- Emphasizing strong connections and ease of access within campus and to the surrounding community
- Creating a regional model of planning, design and environmental stewardship

A guiding principle for UCR's development is to create a campus that is responsive to the intrinsic character of the region. UCR can achieve this by:

- Fostering an intellectually-inspired 'community of learning'
- Providing visual connections to the surrounding landscape
- Respecting the legacy of clear, modernist design that established the original campus buildings and utilizing the buildings to support the campus open space system
- Strengthening the relationship between buildings and landscape in new construction
- Integrating new development with the existing campus through the use of complementary materials, colors, structures and landscape elements

## POLICY MANDATES

These guidelines indicate the University's commitment to societal values and a larger policy context by promoting sustainability and environmental stewardship with particular attention to new development's response to the local climate. New development should also provide universal accessibility to ensure a high-quality educational experience for all UCR students as well as faculty, staff and visitors in compliance with the Americans with Disability Act.



## CAMPUS FRAMEWORK

### Regional Context

UCR's campus identity is strongly tied to its natural setting in a sage and chaparral ecoregion. The campus abuts the rugged Box Springs Mountains and is transected by arroyos draining the steep slopes of this preserve. The contrast between UCR's semi-arid mountainous setting and the managed, park-like campus is striking, although the buildings and grounds display a respect for fundamental natural elements. The visual and physical connections to local ecosystems as well as the hot, dry climate are essential elements of the campus, both symbolically and functionally.

Citrus cultivation has played a dominant role in regional human history, in UCR's foundation with the original Citrus Experiment Station and the physical forms of such land use, which includes orderly grids of citrus trees and rows of tall palms or eucalyptus. These linear features mark historic roads and property boundaries and provide focal points and definition in an otherwise undifferentiated agricultural and recently-developed urban landscape.

With such a rich setting and cultural history, future growth on campus has a unique opportunity to physically and symbolically incorporate elements of the region's distinct intrinsic character.

*For a complete discussion of the historical setting and geographic underpinnings of the UCR campus, consult the 2005 LRDP, pages 7-33.*



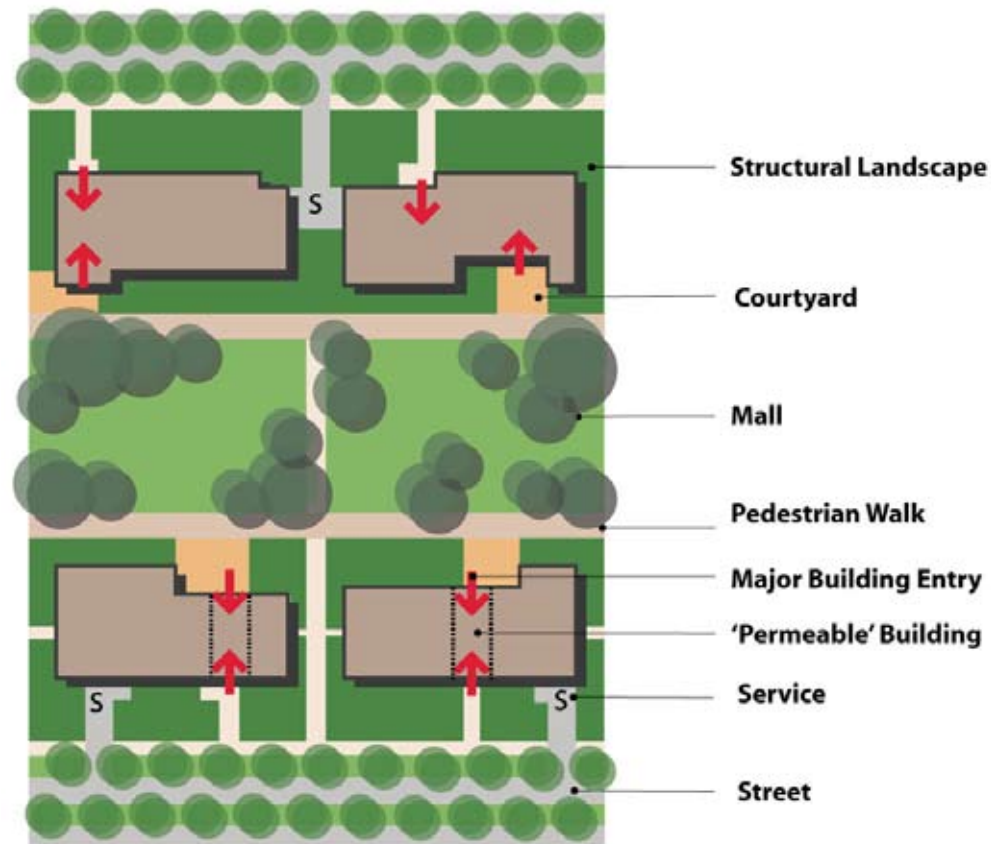
*Citrus Experiment Station, c.1920s*



## The Essence of the UCR Campus

The heart of the existing (East) UCR campus is defined by a series of orthogonal, interconnected malls. A collection of mid-century modern buildings frame the edges of the malls, and help establish the campus character through their continuity of materials, scale and form. The buildings feature primary entries on these open spaces as well as the surrounding campus street system. Courtyards and plazas, often adjacent to building entries, provide places for seating and public interaction. Arcades reinforce the pedestrian walk system, especially alongside major malls, by providing vertical structure and shade. The entire campus feels like an oasis in its semi-arid, mountainous setting and retains elements of a rich agricultural heritage.

Many of the new buildings on campus now feature the above characteristics. This pattern of buildings, open space and circulation should continue and be strengthened through future campus development, including the West Campus.

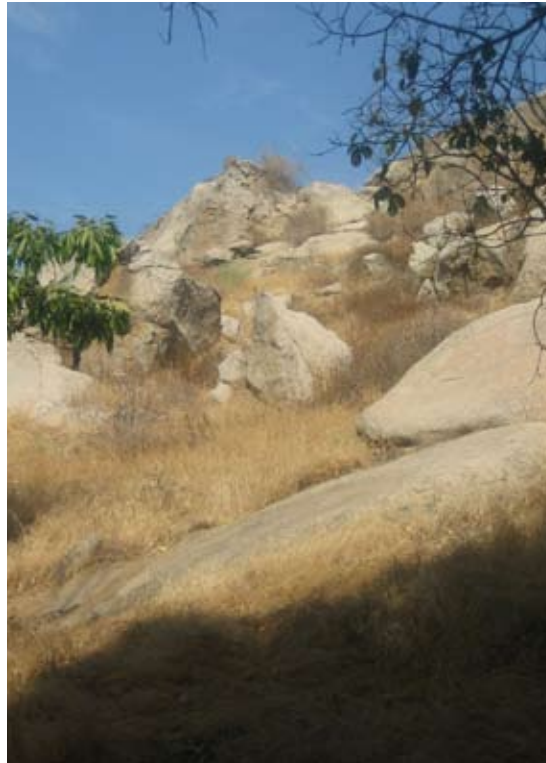


## Campus Open Space Structure

A fabric of outdoor malls, courtyards, gathering spaces and pathways weaves together the different precincts of the UCR campus. The hot and dry climate encourages many aspects of campus life to be conducted outdoors which lends a dynamic, active spirit to UCR open spaces. Classrooms, corridors and gathering spaces are directly exposed to and integrated with the campus grounds. There are also intangible but distinctive elements that derive from the lush, fertile nature of UCR's open space. The scent and color of plants, cascading birdsongs, dappled shade and the sound of the Carillon are all cited as memorable emblems of UCR's sense of place. Fundamental elements include the following:

- **Natural Open Space;**
- **Naturalistic Open Spaces;**
- **Malls;**
- **Courtyards and Plazas;**
- **Thematic Gardens; and**
- **Structural Landscapes**

Each of these fundamental elements is described in the following section.



### Natural Open Space

The 2005 LRDP designates the Riversidian sage-scrub ecosystem of the Box Springs Mountains in the southeast portion of the campus as an Open Space Reserve. The mountains are impressively visible on clear days from a variety of locations within the campus.

Because of its visual prominence, environmental sensitivity, steep slopes and habitat for native wildlife, the natural open space of the Reserve will remain undeveloped. Protecting visual access to natural open space is critical to maintaining UCR's sense of place. Along major view corridors, building massing shall be careful to frame, not obstruct views.



### Naturalistic Open Spaces

Naturalistic open spaces provide an attractive and informal transition from natural spaces to the formal malls and courtyards of the campus. In these less-maintained areas, the landscape is intended to provide space for contemplation, habitat for wildlife and allow for water flow in arroyos and drainages.

Naturalistic open spaces are critical connective elements of the campus open space system, weaving through campus as expressions of the area's natural heritage. Existing naturalistic areas should remain undeveloped and the restoration or representation of such areas is encouraged. (For example, Picnic Hill, or between new buildings on the site of the current Intramural Athletic Fields.)



### Malls

The original core of campus features a clear organization of linear malls, which constitute its primary and defining iconic open space. These malls were laid out in the original campus master plan to echo institutional planning forms found in the eastern United States, reflecting early visions of UCR as a liberal arts college. The orthogonal malls also reflect the linear order of the regional agricultural landscape. The hierarchy of malls provides human-scaled connections throughout the campus and an organizational spine around which major campus buildings are placed. Buildings frame and terminate the vistas within these malls.

With respect to their larger context, the malls also constitute a contained landscape, where large shade trees and irrigated plantings are bordered by buildings much like the walled gardens typical of arid urban areas around the world. Shade structures, arcades and colonnades are a predominant feature of campus architecture allowing for refuge from direct sun on the edges of campus malls. Large trees often serve as natural canopies, complementing the built structures. For durability and ease of maintenance, turf will continue to be used predominantly on malls, which experience heavy student use.



Malls represent the primary open space on the UCR campus and are thus highly protected. The Regulating Plan (page 15) establishes clear build-to lines for new structures fronting campus malls on both the existing East Campus and for future development on the West Campus.



### Courtyards and Plazas

The bright, direct sun and intense heat of this region have directly influenced the form and configuration of East Campus buildings and their relationship to the landscape. Shaded courtyards, generally protected and defined by buildings, provide welcome relief from high summer temperatures. Such courtyards exhibit a variety of landscape responses, from exclusively paved plazas to spaces that are almost entirely vegetated.

Courtyards and plazas are important places for intellectual exchange and informal interaction amongst students and faculty, as well as quiet contemplation in a collegial setting. New buildings should strive to create such spaces to complement the existing and future system of campus open space. The appropriate scale of courtyard and plaza spaces is critical to their success, as is the placement of nearby building entries and windows. Existing courtyards exhibit many desirable characteristics that can be employed in the design of future spaces across a variety of scales and functions, such as interactive gathering areas, fountains, dining terraces, outdoor classrooms and amphitheaters, small informal lawn areas, and thematic gardens.





### Thematic Gardens and Collections

A number of historically and culturally-significant thematic gardens, primarily on the East Campus, exhibit unique plant collections and support research efforts in the College of Natural and Agricultural Sciences. The most prominent of these is the UCR Botanic Gardens on 40 acres of hilly terrain along the southeastern boundary of the campus. Other East Campus thematic areas are the Director's Garden, the Avocado and Macadamia Tree Collection, the Watkins Herb Garden (*above*) and the Medicinal Herb Garden. The Citrus Variety Collection is located on the West Campus, south of MLK on both sides of Canyon Crest Drive.

Thematic gardens and collections should be protected and enhanced as part of an educational curriculum and for informal enjoyment by students, staff, faculty and campus visitors. New opportunities for thematic gardens should be pursued where feasible in conjunction with academic programs. The open space over the course of the Gage Canal right-of-way on the West Campus could serve as a counterpart to the UCR Botanic Gardens, perhaps highlighting representative plants found in other semi-arid climates similar to Riverside's.

Other potential thematic spaces could be established on campus, including spaces for the recognition of outstanding alumni or staff, military memorials or monuments to the heritage of the diverse ethnic groups that attend UCR.



### Structural Landscape Spaces

The campus features many lushly-planted areas between and adjacent to buildings. These areas soften the transitions of buildings to open spaces, screen service areas and blank facades and generally contribute to the sense of the campus as a green 'oasis' in its semi-arid setting. Trees serve a valuable role in shading buildings and thus reducing energy use while providing visual interest and a sense of lushness.

The use of structural landscapes adjacent to buildings and campus circulation should continue. New academic facilities should allow for structural landscape within project boundaries to help new buildings blend into the campus and should use climate-adapted and native species (see Appendix A: Plant Palette.)



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## Icons

The UCR campus features several distinctive icons. They are represented on campus publicity and evoked by students and faculty as physical touchstones of their campus experience. These icons are:

### 1. Carillon Tower, Mall and Rivera Library Arches

The Carillon Tower is the primary focal point of the UCR campus. Built in 1966, the concrete structure can be seen from many places on and off-campus and thus serves as a wayfinding element and a beacon to the heart of campus. The rhythmic arches that form a frontal arcade to the Rivera Library are original architectural forms emblematic of UCR's unique mid-century modernist identity. Both the Tower and Arches derive much of their importance from their location on UCR's Carillon Mall open space, and this trio of icons is often photographed as a composite whole.

### 2. Box Springs Mountains

UCR's campus identity is strongly tied to its natural setting. The campus lies at the foot of the rugged Box Springs Mountains and is transected by arroyos draining the steep slopes of this preserve. The visual and physical connections to local ecosystems as well as the hot, semi-arid climate are essential elements of the campus, both symbolically and functionally. Such connections must be maintained with future campus growth to ensure the continuity of UCR's identity and sense of place.

### 3. Anderson Hall

Anderson Hall is the original Citrus Experiment Station, designed in a modified Mission style. The main entry is clearly defined with an arched, recessed opening and axial relationship to its courtyard. The open arcades to the sides of the main building connect the side wings and define the smaller courtyard spaces. Given its rare pre-modern style and stature as an original building on the UCR campus, standing as it did for decades surrounded by arid hills and citrus groves, this building has acquired iconic status on campus. Recognizing this importance, it is

anticipated that the building will be renovated for use as the Chancellor's Office when new facilities for the current occupant, the A. Gary Anderson Graduate School of Management, are built on the West Campus.

### Intrinsic and Intangible Icons

The UCR campus setting also creates memories and sensations of a somewhat intangible nature, through such things as birdsong, the sound of Carillon bells and the lush structural landscape with its seasonal flower displays. New projects, particularly on the West Campus, should consider and continue this legacy.

### Future Icons

The elements described above have evolved with successive waves of students and faculty inhabiting the campus and experiencing the icons on a daily basis. The icons are also established as artists and photographers depict them on campus materials. As the campus grows over the next several decades, there will be more opportunities for icons to be established in the memories of students. Notable opportunities include:

#### East Campus Entry

The East Campus Entrance Area Study (ECEAS) identified the juncture of Canyon Crest Drive and University Avenue as an ideal location for a gateway feature to UCR, perhaps combined with a traffic roundabout and dropoff. The plan suggested a circular lawn space, framed by a wall of local stone and surrounded by a hardscaped plaza fronted by significant public buildings such as a new Performing Arts Center. The roundabout could also feature a piece of art or sculpture to further emphasize this space as a gateway to campus.

#### Citrus Mall Terminus

The East Southeast Campus Area Study (ESCAS) proposed that the existing Library Mall be extended southwards into Parking Lot 6 to meet a new mall extending west from Anderson Hall. At the junction of these two malls, a new water feature or sculpture, combined with a significant architectural feature such as a tower on a nearby building, could serve as an iconic counterpoint and a symbolic linkage between Anderson Hall and the Carillon Tower.

#### West Campus Tower

The CAMPS proposes a central Mall for the West Campus. The western end of this mall will be terminated by a signature campus building such as a student center, as yet unprogrammed. This would also be an ideal location for a clocktower or similar iconic element, respecting the primacy of the Carillon Tower as the principal campus icon, while producing a distinctive marker and wayfinding element for the new campus community to be developed on the West Campus. The base of this tower could be a plaza, fountain or a thematic garden.

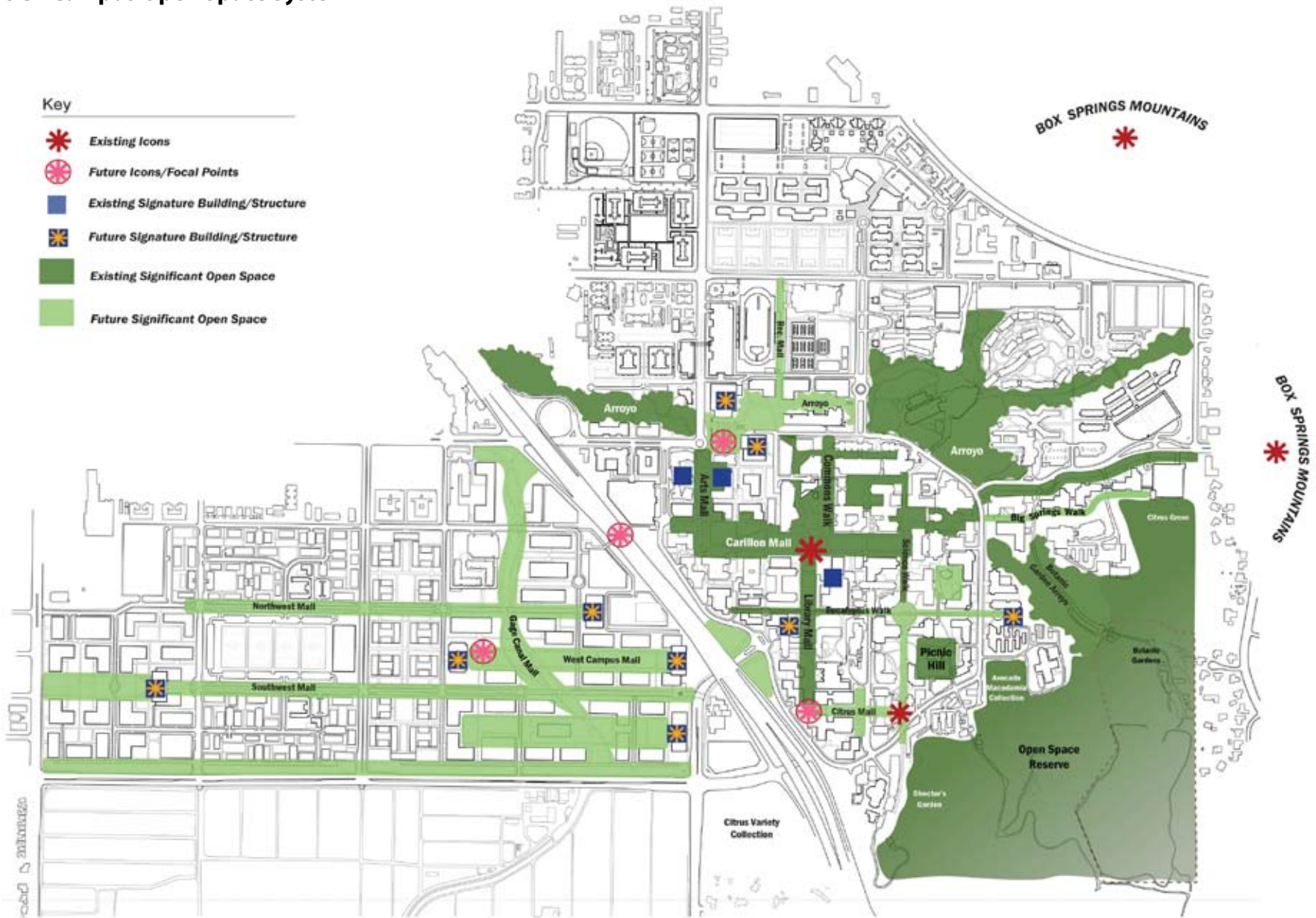
#### Pedestrian Bridge linking East and West Campuses

Given the direct visibility of a future freeway bridge and the probable popularity of use, this could be an opportunity for UCR to create a modern icon with a dramatic design that reflects the identity and setting of the university. A design competition could attract innovative ideas. A budget appropriate to building such a signature element of campus will be essential.

# UCR Campus Open Space System

**Key**

-  Existing Icons
-  Future Icons/Focal Points
-  Existing Signature Building/Structure
-  Future Signature Building/Structure
-  Existing Significant Open Space
-  Future Significant Open Space



## Site Planning Districts

The UCR campus can be considered as several distinct districts, each of which present unique opportunities and challenges for site planning, landscape design and architecture. New projects proposed for individual districts should consider the particular characteristics of topography, drainage, views, vegetation and neighboring buildings to ensure compatibility with context and with past planning efforts for the campus. The following serves as a summary of the key elements that should be considered in each district. (See diagram on page 13)

### Hillside

UCR's Hillside district is characterized by steep terrain and a direct connection to surrounding Natural Open Space, including the Botanic Gardens. Limited development which may occur within this district should visually blend with the surrounding landscape through the use of careful site planning, grading and the use of appropriate materials.

### Picnic Hill

This district is characterized by its naturalistic open space, rocky outcropping and steep terrain. New development should be carefully graded to facilitate use of the site while maintaining the integrity of the topography and landscape.

### Carillon

This district comprises the majority of the existing core campus. A key consideration is the protection of the essence of the UCR campus, particularly the major open malls fronted by buildings. Maintaining views of the Box Springs Mountains is important from malls and buildings within this district.

### Arroyos

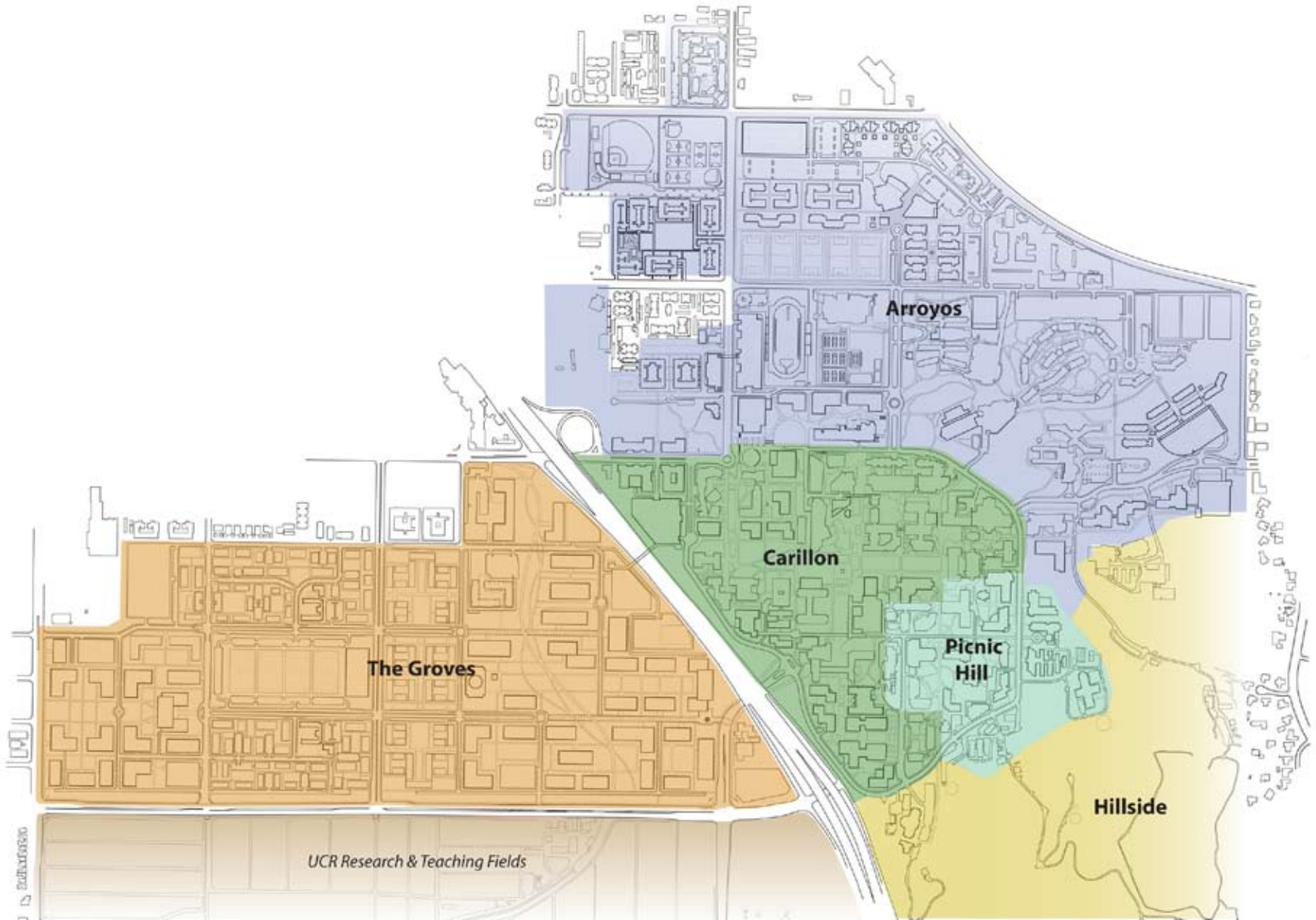
The northern and northwestern areas of the East Campus feature a series of remnant naturalistic arroyos flowing westward down from the Box Springs Mountains. As campus enrollment grows and the population and use of this district grows, it will be important to maintain the form of these arroyos incised through this area of campus with careful site planning and site-responsive architecture. There are good opportunities for the natural treatment of rain-water and restoration of native plant material within these arroyos.

### The Groves

The Groves district is very flat and currently used generally for agricultural research and teaching. New development should be orderly, in conjunction with the 2007 Campus Aggregate Master Planning Study (CAMPS) phasing plans where feasible. A future grid of streets and buildings will be evocative of the groves and rows of citrus trees, while a central open space will offer a sinuous counterpoint, following the alignment of the Gage Canal.



## Site Planning Districts



## Regulating Plan

The future growth of the UCR campus will be guided by a series of area plans, long-term strategies such as the Campus Aggregate Master Planning Study (CAMPS) and the campus design process. As each future building depicted in these plans is realized through siting, programming, design and construction it will be important for UCR to maintain the large-scale vision for the campus to guide the incremental growth of buildings and open space in a cohesive manner, using UCR's limited land base efficiently.

Malls and other significant open spaces are defined by the buildings that form their edges. Existing buildings on the East Campus have strengthened the Carillon and Library Malls with site planning sensitive to the intent of the original campus vision.

The accompanying regulating plan outlines the dimensions of significant open spaces on campus. These dimensions are meaningful and have been established through careful master planning to achieve a scale appropriate to their surrounding uses and character. The regulating plan is intended to provide build-to lines to define the outer facade of future buildings in order to reinforce the shared campus open space system (and thus protect view corridors.) All future projects must adhere to these build-to lines, as well as the architectural guidelines in this document, to further the establishment and maintenance of a cohesive, well-scaled public realm.

Encroachment beyond the build-to lines will erode the quality of open spaces. Setting buildings back significantly from build-to lines can also dilute the sense of enclosure provided by buildings fronting open spaces.

Such a system should also use available campus land efficiently so as not to diminish future building capacity. Development in the academic core must maintain a minimum Floor-Area-Ratio (FAR) of 1.0, as directed by the 2005 LRDP. The resulting taller buildings will also help reinforce key malls and other open spaces, although building heights should not exceed 4 stories on the perimeter of the Carillon Mall.

New development should also consider the relationship of buildings to streets and major pedestrian malls. To reinforce the open character of the UCR campus and soften the effect of increased density with structural plantings, buildings should be set back at least 20 feet from the back of sidewalks or from the edge of pedestrian walk paving.





## Circulation Systems

The campus circulation system is a key organizing element of UCR. The system links buildings and districts and complements the hierarchy of open spaces around which the campus is organized. The Campus Loop Road circles much of the existing campus academic core, providing access for transit, service and emergency vehicles, with increasing emphasis on comfort for pedestrians and cyclists. The campus core is pedestrian-oriented, with wide axial walks paralleling and crossing a spine of open malls, complemented by narrower connecting walks to and from buildings. The generally pleasant climate of the region allows comfortable walking and bicycling nearly year-round. Generally, campus walks have been developed to provide straight and direct connections. This fundamental structure lends order and clarity to the campus, defining one's experience of UCR.

As UCR grows, the 2004 Multi-Modal Transportation Management Strategy (MMTMS) and the 2005 LRDP suggest placing a greater emphasis on promoting bicycle and transit alternatives to the automobile, and placing pedestrian movement at the top of the campus transportation hierarchy.

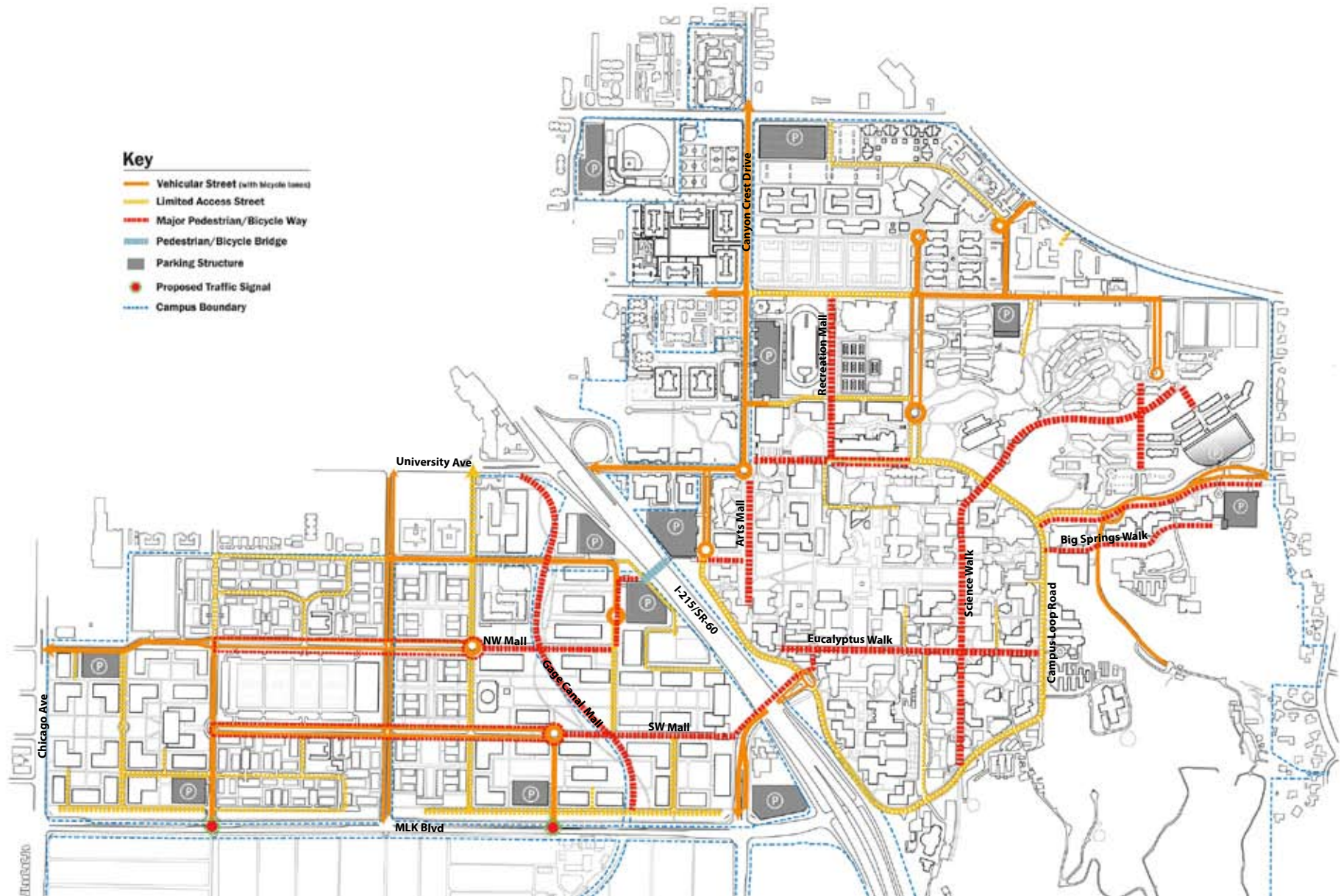
General parking will be consigned to the campus academic perimeter and pedestrian and bicycle connections will be improved to allow convenient and efficient movement throughout the East and West Campuses. In some cases these connections will be accomplished through the use of pedestrian malls, where only emergency or service vehicles will be allowed. In other cases, some vehicular access will be required, but significant pedestrian improvements will ensure that pedestrians and cyclists have priority and relatively unimpeded movement.



*Please refer to the 2004 Multi-Modal Transportation Management Strategy (MMTMS) and the 2007 CAMPS for a full description of existing and proposed circulation systems at UCR.*



## Primary Circulation System (Future)



The following is a categorization of circulation systems on the UCR campus. (Please see Appendix D for specific dimensions and cross-sections:)

### **Pedestrian Walks**

The UCR campus is comprised of a network of formal pedestrian ways, minor accessways and trails. Major and minor pedestrian walks should be continuous and reinforced by adjacent campus development. These walks, (depicted on page 17) provide a key organizing campus element and aid in wayfinding. Several of the campus' major walks have been designated thematically and will be reinforced in future:

- The "Science Walk" traverses campus on a north-south axis between the Science Library and the Entomology Research Museum, linking major science facilities.
- The "Eucalyptus Walk" traverses east-west across campus north of the University Theater, crossing the "Library Mall." It continues under an arcade south of Rivera Library to a future planned science building on the east side of East Campus Drive.
- The "Arts Mall" features a wide walk, leading visitors into campus from Canyon Crest Drive northeast of the Arts Building and joining with the "Carillon Mall" east of Hinderaker Hall.
- The "Gage Canal Mall" on the West Campus will feature a linear central open space with a series of woven paths linking academic facilities between University Avenue and Martin Luther King Jr. Blvd.
- Perpendicular to the Gage Canal Mall, the pedestrian-oriented Northwest and Southwest Malls will link housing, recreation and School of Medicine facilities with the West Campus academic precinct and the East Campus.



### **Bicycle Routes**

Bicycling is a popular mode of transport on campus and will become more predominant with the increase of student housing on or close to campus and related restrictions on private vehicle use. There are currently no dedicated bike trails near campus, but the City of Riverside has a long-term vision of building a regional bike trail along the Gage Canal right of way, including the portion on campus once it is piped underground.

There are on-street bike lanes on city streets accessing the campus as well as the Campus Loop Road, Linden Drive, Aberdeen Drive and Big Springs Road. Bicycles are now permitted on major and minor walks but the MMTMS describes a goal of making the academic core of the East Campus (and in future, the West Campus) a bicycle safety zone, where bicyclists are required to dismount due to potential conflicts with heavy pedestrian traffic. Bicycle routes should generally be continuous and connect directly to important areas of campus and off-campus city streets.

### **Service and Emergency Drives (Limited Access)**

Efficient service access is an essential component of any university circulation system. Service areas at UCR should be located on outer, rear edges of buildings, minimizing pedestrian conflicts. They should be directly accessed via vehicular streets. Service areas should be signed to accommodate the needs of the building and be visually screened to minimize aesthetic impacts on views from pedestrian routes and other buildings.



### **Streets (Vehicular and Limited Access)**

Campus streets are significant elements of the public realm that, in addition to accommodating vehicular traffic, carry high volumes of pedestrians on sidewalks and bicycle traffic. They are currently designed to prioritize the movement of private autos over pedestrian or bicycle comfort. The I-215/SR-60 freeway, a primary access route to UCR, bisects the campus and acts as both a barrier and a source of noise and air pollution. The Loop Road circling much of the East Campus directs vehicles to buildings, service drives and parking facilities. A shuttle bus system circulates around campus via this road and is complemented by public transit service to the edges of campus.

Generally, sidewalks are currently too narrow and directly adjacent to traffic lanes. Street trees are sparse. Public space and pedestrian safety should be enhanced with wider sidewalks, planting strips for street trees separating the sidewalk from cars, and furnishings such as benches and trash receptacles.

## Architectural Elements

The UCR campus demonstrates unique architectural responses to climate, topography and local history. The early Mission-style Citrus Experiment Station structure and associated vernacular agricultural buildings are historic landmarks on the campus. Similarly, the mid-century modernist buildings built in the 1950s and 1960s are part of the campus's established architectural heritage. These buildings (Webber Hall, Rivera Library Unit 1, Physical Education, Geology and Watkins Hall) are arranged around the Carillon and Library Malls, creating the original core of UCR. The integral relationship of these buildings to the adjacent open spaces creates a sense of openness that in part defines the character of the campus.

Considering the campus's history, setting and built environment, a clear set of common elements, or a vocabulary, is revealed. New development should be integrated into the existing campus by building on this rich design vocabulary. The following elements, standards and strategies should be incorporated into new buildings to help ensure the development of a cohesive campus:

- Arcades
- Sun Shades
- Color Palette
- Direct Expression of Structure and Honest Use of Materials
- Screening
- Varied Massing
- Permeable Ground Floors
- Buildings with Multiple Entries (street and quadrangle)



### Arcades

A variety of arcade types are found across the campus, arched and rectilinear, freestanding and attached to buildings. Arcades provide shaded and visually obvious circulation routes between many buildings of different scales, as well as informal gathering space.

### Sun Shades

Found on most campus buildings, these range from integral building elements (deeply recessed windows) to those attached to façades, in a variety of materials.

### Color Palette

The use of the UCR blend of brick achieves a continuity of tone among the buildings and helps create a cohesive campus. This brick should appear on all permanent buildings, especially main entries or facades.

### Direct Expression of Structure and Honest Use of Materials

The articulation of materials in a way that reveals the construction of the building is common on the UCR campus, and follows directly from the mid-20<sup>th</sup> century modernist tradition of early buildings on campus. This tradition lends a quiet sense of order which modulates the scale of buildings on campus and should be continued in new development.

### Screening

Both roof top and ground level mechanical equipment (including trash receptacles) should be screened from public view.



### Varied Massing

The perceived scale of buildings on the campus is reduced through the use of articulated volumes. In keeping with the LRDP, new buildings will need to be a minimum of 3-4 stories to create an overall FAR of 1.0, so this will continue to be an important design strategy.

### Permeable Ground Floors

The permeable nature of the ground floors of buildings on campus fosters a high level of interaction between building and user. Passageways through buildings are an important element in the campus system of circulation and a link between campus open spaces. Other examples include attached arcades and open connections to courtyards as well as direct entries to first-floor classrooms from adjacent malls or open spaces.

### Buildings with Multiple Entries (street and quadrangle)

Building entrances are a key part of the wayfinding system on campus. The careful attention to the design of entrances establishes a hierarchy for buildings with primary and secondary entries, and those with public entries facing both the streets and academic quadrangles. Buildings with multiple entrances become an integral part of the campus circulation system and enhance the connections between buildings and open spaces.

## Architectural Elements

The following images illustrate UCR's architectural heritage and note the essential characteristics of a range of buildings. These characteristics are intended to inform designers and be incorporated in future development. Given the intent to develop future buildings in a cohesive, simple, modern vocabulary, these examples should be used as the basis for design. They are described in further detail in this document.



**Physical Education (1953)**

The simple detailing and volumetric massing of the Physical Education Building add interest to this otherwise simple façade. The articulated volumes step down to the smaller scale of the entry arcade adjacent to the open space, providing a transition to the pedestrian zone.



**Watkins Hall (1953)**

Also one of 5 original campus buildings, Watkins Hall is a representative example of the use of the “UCR blend” of brick combined with horizontal banding.



**Anderson Hall (1916)**

Anderson Hall is the original Citrus Experiment Station, designed in a modified Mission style. The main entry is clearly defined with an arched, recessed opening and axial relationship to courtyard. The open arcades to the sides of the main building connect the side wings and define the smaller courtyard spaces.



**Webber Hall (1953)**

One of 5 original campus buildings, Webber Hall illustrates the horizontal emphasis common to the earlier buildings on the campus. A prominent arcade marks the main entry points in addition to providing sheltered outdoor circulation. The metal grilles over the upper windows on the main façade were added later for protection from the sun and represent an early example of this strategy.



**Spieth Hall (1958)**

Spieth Hall is an example of an early building that used a similar materials palette to the original 5 buildings but with a different approach to detailing. The covered entry court provides a view through to the courtyard, in the tradition of providing permeable ground floor areas.



**Riviera Library (1954+ two additions)**

Riviera Library Unit 1 at two stories was one of the original 5 buildings. The creation of multiple volumes during subsequent additions and use of articulated surfaces reduces the overall scale of the building. The iconic arched arcades provide exterior circulation and create visual continuity with the adjacent Carillon Mall.



**Bourns Hall (1995)**

Bourns Hall provides a good example of the integration of outdoor circulation in a modern building. The ground floor is very open to the courtyard and helps to activate this outside space. A variety of materials are used with a clear expression of the structural system, and the overall scale of the building is reduced through the articulation of multiple building volumes.



**Science Laboratories 1 (2003)**

The entry to Science Laboratories 1 is marked by a vertical expanse of glass that can be seen from a distance. Other portions of the building have more of a horizontal emphasis, and distinguish the base of the building in keeping with the character of the older buildings on the campus.



**Carillon Tower (1966)**

As the campus developed in the 1960s, the Carillon Tower became the primary focal point of the campus. The concrete structure is articulated with a perforated façade.



**Engineering Building Unit 2 (2005)**

Engineering Building Unit 2 employs a variety of strategies to encourage the use of the outdoor spaces around the building. Exterior stairs and corridors adjacent to the second floor courtyard help to enliven the space with pedestrian activity, while the transparency of the ground floor creates a visual link to the adjacent Bourns Hall courtyard. Roof mounted "sails" mitigate the hot, arid climate.



*Anderson Hall: A Signature Building*



*Biological Sciences Building: A Context Building*



*Context Buildings fronting Carillon Mall*

## Signature Buildings and Context Buildings

The diagram on page 11 outlines the open space system of the UCR campus. It identifies focal points on campus that require greater attention from architects, Capital & Physical Planning staff, Design and Construction staff and UCR's Design Review process in the development of new buildings and associated landscape. These focal points typically terminate or frame key vistas and open malls or important streets. New buildings should be designed to respect their sites when they include frontage on major campus open spaces and especially when they terminate views along these open spaces, occupying focal point sites. Careful site planning can also mitigate the effects of new buildings on views of the Box Springs Mountains, a key iconic element of the campus landscape.

### Signature Buildings

Several locations on campus are designated for signature buildings because of their use or prominent location. These buildings require exceptional design excellence and careful consideration of program and context throughout the design process. Such buildings may also require an enhanced budget to accomplish a higher expectation of quality for an important site and program.

Signature buildings are still expected to contribute to the continuity of campus architecture and materials while providing additional stature and importance at key focal points. Some of the guidelines may be relaxed for signature buildings at the discretion of the campus as appropriate. However, the open space setbacks delineated in the Regulating Plan should not be encroached upon. Before any guidelines are modified for signature buildings, the campus should be reassured that the resulting design will be worthy of the exception to be granted.

### Context Buildings

Few buildings on campus should be considered signature buildings. Most campus buildings are intended to be contextual in nature. The strength of much of UCR's architecture lies in its unity of materials and modernist vocabulary. Context or Background buildings fulfill a critical role in reinforcing this basic campus fabric.

All buildings should be designed with care and attention to design excellence. Context or Background buildings require an equal commitment of talent, effort and creativity to design a building which contributes to the campus identity.

The Site and Architectural Guidelines will serve to ensure that all new developments on campus will contribute to the overall fabric of the campus while supporting and strengthening UCR's distinctive structure of circulation and open space.

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## Sustainability

### University of California Policy on Sustainable Practices

The University of California is committed to stewardship of the environment and to reducing the University's dependence on non-renewable energy. The following selection of guidelines, excerpted verbatim from directives updated in 2007, summarize key UC system-wide guidelines in support of Sustainable Practices. These sustainability guidelines will be subject to continuous review and will be updated as UC policy changes. The most recent guidelines can be found at:

<http://www.ucop.edu/ucophome/coordrev/policy/>

#### General Guidelines

- Incorporate the principles of energy efficiency and sustainability in all planning, capital projects, renovation projects, operations and maintenance within budgetary constraints and programmatic requirements.
- Minimize the use of non-renewable energy sources on behalf of the University's built environment by creating a portfolio approach to energy use, including the use of local renewable energy and purchase of green power from the grid as well as conservation measures that reduce energy consumption.
- Incorporate alternative means of transportation to/from and within the campus to improve the quality of life on campus and in the surrounding community. The campuses will continue their strong commitment to provide affordable on-campus housing, in order to reduce the volume of commutes to and from campus.
- Track, report and minimize greenhouse gas emissions on behalf of University operations.
- Minimize the amount of University generated waste sent to landfill.
- Utilize the University's purchasing power to meet its sustainability objectives.

### I. Green Building Design

- Outperform California Energy Code efficiency standards by at least 20%.
- Design and build all new buildings, except for laboratory and acute care facilities, to a minimum standard equivalent to latest US Green Building Council Leadership in Energy and Environmental Design (LEED) "Certified" rating, striving for "Silver" rating or higher.
- Design and build all new laboratory buildings to a minimum standard equivalent to a LEED "Certified" rating...as appropriate.
- Significant renovation projects will also apply sustainability principles to the systems, components and portions of the building being renovated.
- Planning and design will include explicit consideration of lifecycle cost.
- The University will use its purchasing power to promote availability of products that are resource-efficient, energy-efficient, water-efficient, and of recycled and rapidly renewable content for building materials, subsystems, components, equipment, and supplies.

### II. Clean Energy Standard

- The University will implement system-wide portfolio approach to reduce consumption of non-renewable energy.
- The University will strive to achieve a level of grid-provided electricity purchases from renewable sources, with goal of procuring 20% of its electricity needs from renewable sources by 2010.
- Provide up to 10 megawatts of local renewable power by 2014.
- Develop a strategic plan to reduce system-wide growth-adjusted energy consumption by 10% or more by 2014 from 2000 base consumption level.

### III. Climate Protection Practices

- By 2020, aim to reduce greenhouse gas emissions to 1990 levels (and reduce to 2000 levels by 2014.)
- Develop climate-neutral policy by 2008.

### IV. Sustainable Transportation Practices

- Campuses will strive to increase the percentage of low or zero-emission vehicles by 50% by the year 2009-2010, or increase the number of such vehicles by 20% by the year 2009-2010, whichever is more feasible, and/or convert campus vehicles to 50% non-carbon-based fuel by 2009-2010.
- Each campus will implement a pre-tax transit pass program for University employees.
- The University will pursue the introduction of ride-share programs at each campus and will track annual fuel consumption.

### V. Sustainable Operations

- Campuses will operate and maintain most buildings to LEED EB (Existing Buildings) Certified standard (excluded are acute/patient care buildings, structures less than 50,000 gsf and buildings off-campus.)

### VI. Recycling & Waste Management

- Campuses will seek to reduce/divert waste 50% by 2008, 75% by 2012 and achieve zero waste by 2020.

### VII. Environmentally Preferable Purchasing

- Campuses will consider 'cradle-to-cradle' lifecycle of products when purchasing.
- See full policy guidelines for purchasing details.

## Sustainable Site Planning Issues

Although not specifically mandated in the system-wide directives, there is an important aspect of sustainability in site planning for new campus facilities. Sustainability measures include the use of appropriate materials, stormwater management, increased density of development, minimizing vehicle use and minimizing long-term maintenance. Water efficiency in irrigation is another key issue in UCR's climate. These aspects should be considered for incorporation in the design of all new facilities.

LEED certification provides credits for Sustainable Sites, which focuses on site selection, reduction of site disturbance, green roofs, stormwater management, site lighting and higher density development.

The new LEED-NC Application Guide for Multiple Buildings and On-Campus Building Projects guides the application of LEED principles for the specific issues encountered on campuses. (<https://www.usgbc.org/ShowFile.aspx?DocumentID=1097>)

A pilot program is underway to establish a more detailed LEED Neighborhood Development (ND) certification, which will provide a wider array of criteria worth considering in sustainable campus planning and site development. ([www.usgbc.org/leed/nd/](http://www.usgbc.org/leed/nd/))

## UCR Sustainability Policies

UCR is required to adhere to the minimum standards outlined above and similar to each UC campus, has developed a campus baseline to "self certify" LEED equivalency via campus-wide policies and practices. There will undoubtedly be future revisions to this baseline. In addition, UCR has adopted the following benchmarks for implementation as feasible within budget parameters:

- Capital building projects involving new construction will pursue LEED Silver Certification or equivalency.
- Capital building projects involving renovation will comply with the UC President's Green Building Design policy for existing buildings.

*Note: UCR's Green Building Policy is under development and should supplement the information in this document upon campus approval.*



*Physical Sciences Building: Louvered Sun Shades*



*Bourns Hall: Atrium Sun Shade*



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## SITE GUIDELINES

Site planning guidelines implement the underlying campus design framework, goals and policies for specific physical development. The following section provides detailed descriptions and guidelines for the elements listed below:

- **Planting**
- **Paving**
- **Lighting**
- **Furnishings**
- **Campus Art**
- **Grading and Rainwater Management**
- **Circulation Systems**



**The many great gardens of the world, of literature and poetry, of painting and music, of religion and architecture, all make the point as clear as possible: the soul cannot thrive in the absence of a garden.**

Thomas Moore

## Planting

The UCR campus is located in Sunset Climate Zone 19 (USDA Zone 9b) in an interior valley Mediterranean climate. A variety of plants can be grown at UCR due to the range of microclimates created by the unique setting and terrain. A detailed Plant Material Palette is provided in Appendix A.

### Sustainability

- Minimize irrigation through the selection of plants appropriate to specific campus environments and use
- Focus the use of turf requiring more irrigation and care on high-use areas such as courtyards and malls that require a walkable surface
- Utilize native or climate-appropriate and drought-tolerant plantings where feasible
- Promote water conservation by using a computer-regulated irrigation system as well as efficient subterranean drip irrigation systems
- Incorporate UCR's Integrated Pest Management policies in plant selection

### General Guidelines

- Primary considerations should be healthy plant growth and ease of maintenance. Appendix A lists maintenance issues for specific plants
- Respect and reinforce natural and designed planting patterns and the intrinsic character and recognizable order of the campus
- Protect existing thematic gardens and collections
- Locate trees to maximize exposure to winter sun and provide summer shade
- Consider fragrance, sound, color and texture in planting design
- Consider use of citrus trees where appropriate, as a link to UCR's heritage



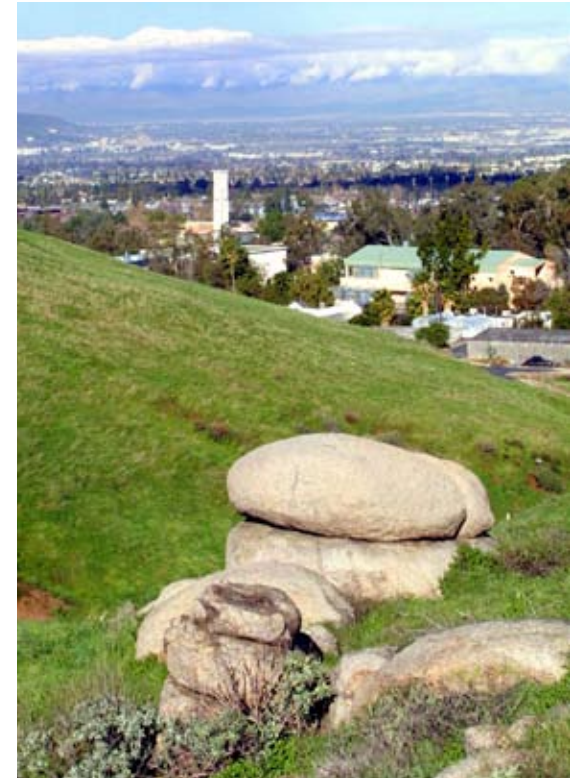
### Natural Planting

#### Intent

Only sensitively-sited infrastructure projects may be considered within natural areas, many of which are protected as Open Space Reserves in the southeastern portion of the campus. Such projects must restore the site's disturbed or eroded areas to match adjacent plant species and communities.

#### Guidelines

- Protect wildlife habitat and corridors where possible
- All facilities adjacent or near wildlands (southeast hills) will be subject to Very High Fire Hazard Severity recommendations and requirements from the Campus Fire Marshal to deal with the wildlands interface
- A qualified native landscape specialist shall be retained to develop an appropriate native landscape plan for the development areas within the Natural Open Space Reserve (see additional mitigation measures in the 2005 LRDP EIR Mitigation Monitoring Program when developing in Natural Open Space Reserve areas)
- Continue links to UCR academic programs for native plant restoration.



*Higher elevations near UCR contain former coastal sage scrub and chamise chaparral habitat, but exotic grass species predominate. The photo below shows an intact sage-scrub ecosystem in the Santa Rosa Islands.*





## Naturalistic Planting

### Intent

UCR features a number of transitional spaces between natural areas and managed campus malls and courtyards. Landscapes that use native or climate adapted plants should be increasingly employed on these transitional edges to help attain sustainability goals and blend the campus with the surrounding natural landscape of Open Space Reserves while helping to prevent wildfires from spreading to built areas of campus.

### Guidelines

- A variety of planting treatments, from semi-arid to subtropical, are appropriate. This can include succulents, pines, palms, ornamental grasses and riparian plantings (associated with arroyos)
- All plantings should require low water consumption and consist of native or climate-adaptive plants arranged in informal patterns

Fire retardant landscape buffers should:

- Provide a minimum of 50' depth or more, per the Campus Fire Marshal's recommendation, which could include thinned and irrigated areas
- Use plantings with fire retardant and low fuel volume characteristics
- Include access to permanent irrigation systems where possible
- Limit fuel potential of tree and large shrub plantings by spacing the plants to break continuous fuel canopies
- See mitigation measures in the 2005 LRDP EIR Mitigation Monitoring Program when developing in Natural and Naturalistic Open Space areas
- The California Building Commission adopted Wildland-Urban Interface codes effective January 2008. These new codes include provisions for ignition resistant construction standards in the wildland urban interface. The provisions of the California Building and Fire Codes in effect at the time of any future projects will be assessed for substantial compliance or equivalency.





## Malls

### Intent

UCR's malls, which consist of park-like lawns and large shade trees framed by academic buildings, provide pleasant and inviting spaces and a welcome contrast to surrounding busy streets and dry, exposed natural areas. Existing malls, including the Carillon and Library, will be preserved and strengthened and new malls will incorporate their design principles. Groups of trees and unique landscape beds can help to reinforce and define UCR's malls, contributing to the existing recognizable sense of place.

### Guidelines

- Avoid encroachment into campus malls. See the Regulating Plan (page 15) for mall scale and dimensions
- Traditional open lawns have important iconic value and should be provided in high use areas only. In other areas consider planting drought tolerant grass mixes that are aesthetically and functionally similar to lawn, but require less water and maintenance
- Shade trees should be chosen from the UCR Plant Material Palette (see *Appendix A*) and planted to reinforce a park-like setting and define edges

- Groupings of trees should be located and maintained to allow clear visibility for safety and security
- Irrigated turf areas will be limited to malls and other high-use areas. The intent is to use lawns only where a surface is to be walkable or used for recreation. Other open spaces should be planted
- Ideally, turf areas should be 15' and wider to enable the use of efficient rotor irrigation heads and allow efficient mowing
- UCR should consider identifying significant 'heritage' trees for long-term protection and to foster the idea of the campus as an 'informal arboretum.'





### Streetscape Plantings

#### Intent

Streetscapes, formal gateways and dropoffs should be aesthetically and functionally reinforced with street trees and median plantings.

#### Guidelines

- Plantings are to be wayfinding cues to guide pedestrians sequentially through campus
- Street trees should be adequately spaced, depending on species, to provide shade and cooling for pedestrians and reduce the overall urban heat island effect
- Street trees should shade 65-75% of a typical sidewalk's length. South-facing streets and walks require more shade
- Trees should have low maintenance requirements and sufficient hardiness to withstand the region's hot climate and the effects of adjacent traffic
- Where possible, planting strips (or 'parkways') for street trees should be added between new sidewalks and road edges. Where trees are planted in wells within sidewalks, provide a minimum 40 square feet of pervious area and soil
- Consider using structural soil in sidewalk and planting strip areas (for large trees) to minimize soil compaction and encourage healthy tree growth



### Building-Specific Plantings

#### Courtyards and Gardens

#### Intent

New buildings should be sited and designed to enhance and activate outdoor space. Courtyards at UCR provide very special places for both interaction and solitude and when effectively designed can contribute directly to intellectual pursuit and dialogue within the UCR community. The most successful courtyards are those that have a sense of enclosure, provide a variety of seating opportunities and have a high level of refinement in materials. Courtyards and gardens can be the most ornamental and lushly planted areas on campus with plants especially chosen for their thematic, aesthetic and aromatic qualities as well as shade to emulate a 'garden oasis.'

#### Guidelines

- Select plants for their color, texture, scent, seasonal change and shade
- Consider the use of perennials and flowering trees to create focal areas where appropriate
- Select trees and plants that will look their best throughout the academic year
- Consider plants related to a specific building's academic programs or function
- Provide root barriers for courtyard trees and trees adjacent to hardscape to minimize pavement damage



#### Structural Planting

#### Intent

The campus landscape includes 'structural' plantings of trees, shrubs and groundcovers adjacent (and sometimes attached) to buildings and walls that provide important form and edges to the campus setting. Structural planting helps to blend buildings into the campus, provides screening of utility and service areas and directs pedestrian movement to building entries.

#### Guidelines

- Utilize a simple palette of mass plantings that provides uniformity and consistency throughout the campus
- Provide safety and visibility while establishing a cohesive and uniform aesthetic
- Provide accent plantings at key building entries
- Consider using evergreen plants for year-round shade and on north-facing areas. Focus deciduous trees on south-facing areas, to allow for winter sun and summer shade
- Consider including large tree species as vertical punctuation between buildings and to provide shade

## Paving

A well-designed hierarchy of walks, plazas and building entrances enriches the campus environment and identity, improves visual quality and reinforces the primacy of the pedestrian.

### Sustainability

- Use permeable paving materials that allow rainwater infiltration where feasible, particularly for secondary paths and roads
- Use paving materials with post-consumer recycled content where possible
- When possible, select materials that are extracted or manufactured within 500 miles of UCR
- Minimize the use of petroleum-based paving products and products requiring high energy consumption in their production

### General Guidelines

- Meet all current Americans with Disabilities Act (ADA) criteria for slopes, width and finishes, including non-slip surfaces
- Layout of paved hardscape areas should facilitate regular maintenance and cleaning
- Paving materials should be selected for durability to withstand wear and minimize maintenance



### Modular Pavements

#### Intent

The use of high-quality modular “unit” pavement such as precast concrete, brick or cut stone should be considered as accents for building entries, courtyards and plazas as well as special walks, in keeping with the existing tradition of brick banding. These are visible areas that have high levels of pedestrian interaction and help establish a rich campus texture and character. They also allow for easy access to underground utilities.

#### Guidelines

- Use pavers with non-slip surfaces, in colors complementary to the color palette of UCR’s buildings
- Concrete or asphalt stamped to look like brick is not acceptable
- Paving patterns for larger areas should be in interlocking forms to facilitate long-term stability





### Cast-in-Place Concrete Pavement

#### Intent

Concrete paving will continue to be used throughout UCR for most pedestrian surfaces. It is economical, durable and reflects the modernist vocabulary of materials on campus. On major walks, existing concrete panels are often divided by a regular pattern of brick banding and edging, a unique detail that should be continued where appropriate.

#### Guidelines

- Use cast-in-place broom finish concrete for paths and walks
- Reduce surface glare by using 'UCR Tan' integral color admixture
- Utilize appropriate concrete thickness to accommodate expected uses & vehicle loads
- The use of pervious cast-in-place concrete is encouraged to enable rainwater infiltration where feasible



### Asphalt Paving

#### Intent

Asphalt paving is generally used on campus for vehicular surfaces due to its durability and flexibility. Asphalt paving indicates a public vehicular way and should rarely be used for pedestrian paving, especially in heavily-used areas.

#### Guidelines

- Use cast-in-place concrete curbs along asphalt vehicular roads
- Asphalt thickness should be determined by functional requirements and the subsurface bearing capacity
- Pedestrian paths should only be asphalt on the periphery of campus. Stabilized decomposed granite may still be a better option in these locations



### Soft Surface Paths

#### Intent

Within natural areas and gardens, soft-surface paths provide the textural quality that reinforces a connection with the natural environment. Paths should be narrow and configured to allow sufficient pedestrian circulation within the area.

#### Guidelines

- Decomposed granite, a good permeable and ADA-accessible option, should be used to pave trails and small garden paths in natural areas to complement the setting
- Decomposed granite should be polymer stabilized, edged with a durable material (not wood) and should be colored to closely match the existing 'UCR Tan' standard

## Site Lighting

Effective lighting adds to public safety and to the night-time vitality of campus. Lighting should focus on providing an even, consistent coverage, softening contrast ratios at edges and thus improving visibility by avoiding excess illumination and brightness. Campus lighting should also be well-organized in simple patterns which reinforce the open space, courtyards and plazas and circulation on campus.

### Sustainability

- Light illuminating from fixtures should be cast downward with full cut-off shades
- Specify lighting for maximum durability, energy-efficiency and lifespan
- Use minimum lighting levels required by code and campus standards; focus on contrast ratios versus standard foot-candle light levels

### General Guidelines

- Provide sufficient lighting to establish safe conditions for access and circulation
- Consider lighting to enhance the aesthetic qualities of the campus and highlight special features and trees at night
- In-ground up-lighting should be avoided to minimize maintenance and vandalism
- Coordinate lighting locations and pole heights with tree locations and landscape areas and constructed elements
- Refer to lighting standards in California Title 24 or UCR construction specifications



### Free-Standing Lighting

#### Intent

Consistent pedestrian lighting is an important contributor to UCR's identity and can help suggest a hierarchy of travel routes.

#### Guidelines

- Walks and paths should be uniformly illuminated
- Parking areas, pedestrian plazas, campus building entries, loading areas and courtyards should be illuminated
- Pole spacing should be determined by pole height, luminaire type and desired foot candles
- Pole placement should reinforce the linearity of campus open space and circulation
- Lighting level in pedestrian pathways, etc., should be a minimum of 0.5 foot candle (fc) on the ground surface, 1.0 foot candle in parking lots



### Building Lighting

#### Intent

Building-specific light fixtures can be integral components of buildings, highlighting significant features and identifying entries.

#### Guidelines

- Lights should be compatible with buildings and should articulate and accent their landscape context
- Lighting should be indirectly focused. Light sources should not be visible
- Consider the additive effect of spilled light from building interiors when placing exterior fixtures





## Furnishings

Site furnishings are important elements of UCR's exterior public realm. They help define the campus character and improve the livability and comfort of outdoor spaces by providing places to gather, study and socialize, thus improving collegial communication and interaction. Furnishings should be selected and located to maintain the cleanliness and order of campus and enhance circulation.

Furnishings on major campus malls should match the existing palette of simple concrete pieces. Non-standard furnishings should be replaced. In all other campus spaces, different pieces are permitted as long as they recognize the distinct character of adjacent buildings and meet the guidelines that follow\*. This consistency and contextual consideration both enhances the campus's image and can help reduce maintenance costs.

### Sustainability

Selection of furnishings should consider:

- Local climate (especially intense heat)
- Recycled content
- Durability and lifespan
- Southern California production when possible
- Minimizing the use of toxic materials (paints, finishes, glues)

### General Guidelines

Furnishings should be:

- Efficient to repair and maintain
- Vandal-resistant
- Selected in coordination with campus lighting, signage and buildings
- Located to avoid conflicts with site maintenance
- Located to take advantage of shade

\* Other, sporadic site furnishings not described here include planters, kiosks and news racks.



## Benches/Seating

### Intent

In highly-public areas, seating can serve to invite collegial group activities, dining and informal study or introspection. A variety of comfortable seating along walks, paths, courtyards and plazas is an important contributor to the pedestrian circulation system. A family of benches should encompass a range of seating requirements.

### Guidelines

- Provide seating throughout campus, particularly in the following areas:
  - Plazas and courtyards, especially those offering shade
  - Building entries
  - Along major and minor pedestrian walks
  - Oriented toward interesting and varied views
  - Near transit stops, with a clear view of approaching buses
- Incorporate fixed seating at a comfortable height into planters, low dividing walls and the facades of buildings where appropriate as an alternative to stand-alone benches

- Group benches and trash receptacles as a composition of elements for practicalities of usage and to reduce visual clutter
- Locate seating to take advantage of public activities, views, sun in winter and shade in summer and shelter from the wind
- Provide some seating for individual, introspective use
- Ensure compatibility with the architectural and landscape setting
- All benches or seat walls should utilize creative prevention measures to reduce or eliminate damage from skateboarders and cyclists. Armrests are suggested to deter skateboarding
- Benches with backs are preferred for comfort



## Tables and Chairs

### Moveable

#### Intent

The use of moveable tables and chairs can allow for dynamic seating arrangements and can encourage more active use of campus gathering spaces. Such furniture can be moved to allow for more comfortable seating locations and to accommodate different group sizes. This flexibility allows spaces to be cleared for special events. This type of seating is well-suited for dining and is also particularly popular for informal outdoor study sessions.

#### Guidelines

- Consider moveable tables and chairs in areas of high public use and visibility such as around the UCR Student Commons
- Tables in open, un-shaded areas should include a shade umbrella. Umbrellas should be made from UV-resistant fabric that repels mildew and stains and is resilient to power-washing. Consider using steel umbrellas
- Moveable furniture must be managed and supervised to minimize damage or theft



### Stationary

#### Intent

Stationary tables and chairs are typically picnic table type units. They can serve to define spaces as gathering areas, particularly for outdoor dining. Seating should be planned to provide a variety of sun/ shade conditions and seat combinations.

#### Guidelines

- Tables and chairs should be simple as well as architecturally and aesthetically appropriate
- Tables in open, un-shaded areas should include a shade umbrella
- Choose units that allow for wheelchair user access
- Locate seating to discourage inappropriate use by skateboarders, or other activities unrelated to seating or dining





## Bicycle Parking

### Intent

Bicycle racks are important elements of the campus circulation system and their effective use can help to promote alternative transportation methods.

### Guidelines:

#### Bike Parking

- Bike parking should be visible, accessible and safe day and night. Provide shade and shelter where possible
- Provide sufficient bike racks to avoid unsightly random parking, based on projected use of adjacent building
- Provide covered, secure and lighted bicycle parking in all parking garages
- Consider providing bike lockers to commuters
- Provide covered, secure and lighted bicycle parking at every new residence hall. Retrofit older halls to provide such facilities where possible. Provide a minimum of 1 space per 8 students

### Bicycle Racks

- Choose secure racks that function well but also look aesthetically pleasing when no bikes are present
- Existing campus standard ribbon rack (Columbia Cascade 'Cycloops' #2170-UC; length to be determined by location) or single U-loop racks should be consistently installed in areas adjacent to building entries. The finish should be either powder-coated (patrician bronze) or stainless steel (determined by project and location) and installed by embed whenever feasible
- Other than the ribbon racks at building entrances, a specific style of bicycle rack is not recommended as aesthetic tastes change and designs for security and durability evolve regularly
- When locating racks near building entries, ensure the racks do not interrupt the flow of pedestrians into the building
- Racks should allow an entire bicycle to be locked, not just one wheel



### Trash & Recycling Receptacles

#### Intent

Trash and recycling containers are essential for a clean and sustainable campus environment. Careful selection and design can minimize the aesthetic effects from the multiple units that are required.

#### Guidelines

- Provide receptacles throughout campus, particularly near seating, crosswalks, transit stops, at residence halls and at all dining facilities
- Receptacles should be easily accessible to service operations
- Group benches and receptacles as a composition of elements for practicality of usage and to reduce visual clutter
- Recycling receptacles should be clearly marked for their purpose and be part of a family of furnishings
- For recycling, provide three separate containers: glass/aluminum, plastic and paper. Consider combining the three containers into one unit
- Receptacles should have a side opening to prevent birds from scattering trash
- Metal receptacles are generally recommended for clean profile, ease of maintenance and ability to customize and coordinate with other furnishings



### Bollards

#### Intent

Bollards are generally used to create a low barrier between vehicular and pedestrian traffic. The need for vehicles to enter the campus via pedestrian routes should first be minimized through careful site design. Minimize over-use of bollards, which can impede pedestrian flow.

#### Guidelines

- Removable bollards are appropriate where service and emergency vehicles require temporary access to pedestrian/bicycle only routes. Contact the Campus Fire Marshal before selecting removable bollards to determine type and location
- Bollard design should be simple in design, architecturally and aesthetically appropriate and should complement other site furnishings



### Campus Art

Campus art can express the intellectual inquiry, exploration and creativity found within UCR. The Advisory Committee on Campus Art organizes the acquisition, commissioning, or acceptance of art for locations throughout the campus. The committee screens potential donations and recommends acquisition of art to the Chancellor and identifies placement, funding and ongoing maintenance for the pieces.

#### Guidelines

- Select art that relates to associated academic programs to enhance the learning experience
- Placement of each art piece should relate to its immediate surroundings and context within the campus
- The Advisory Committee (and DRB) should carefully consider the placement of art at focal points and pedestrian gathering areas (see potential sites for Campus Art in the 2005 LRDP)
- Art should be vandal-resistant and should not require extensive on-going maintenance
- Art can be used functionally as an element of site furnishings

## Grading and Rainwater Management

The UCR campus is located on western-sloping alluvial deposits at the base of the Box Springs Mountains. The steep, rocky, and undeveloped hillsides to the east rise almost 2,000 feet above campus. On the East Campus, natural drainage incises this terrain via arroyos which drain westwards into the Gage Detention Basin and eventually into the Santa Ana River. On the West Campus, stormwater sheet flows primarily towards the southwest. New projects on the UCR campus should accommodate topographic changes in an elegant and appropriate manner and encourage infiltration of site drainage where practical. The following guidelines are all subtly related to efforts to improve campus sustainability by preserving trees and natural open space, minimizing erosion and protecting water quality.

### Guidelines: Grading

- Site design should recognize the role of elevation changes in providing functional separation and visual screening between project elements and between a project and its neighbors
- Grading for a project should seek to balance cut and fill on-site. Where this is not possible, cut and fill should be balanced on a campus-wide basis, through stockpiling. Off-site fill operations for future campus facilities should be properly engineered, placed and compacted
- Prior to grading, topsoil should be stripped and stockpiled for reuse where feasible
- Grading of sites within developed areas of the campus should impact adjacent development as little as practical, including subsurface infrastructure
- Contoured slopes are generally preferable to retaining walls



- Site features planned for preservation, such as significant rock outcrops or mature trees, should be protected in place
- Grading of sites adjacent to natural open space should minimize impacts on sensitive natural areas by minimizing the impact area and/or utilizing sensitive grading techniques
- Where retaining walls are necessary, incorporate them into other design features, such as stairs, ramps, and planters
- Techniques to soften the visual impact of long or high slope banks include terracing, varying slope heights, contour grading, rounding tops and bottoms of slopes, and screening with landscaping
- For trees to be preserved, grading should meet the existing ground level at the drip line perimeter of the trees at a minimum, or properly designed tree wells should be provided as part of the design concept. Existing trees to be saved should be carefully protected and maintained during construction
- Slopes should be designed to facilitate surface drainage, limit soil erosion, and avoid slides and instability
- The preferred maximum slope gradient should be 3:1 for planted banks
- In geologically stable rock areas, slopes up to 1:1 may be permitted, subject to approval by a geotechnical engineer
- Slopes for turf areas should be a minimum of 1.5% cross slope fall for drainage, and a maximum slope of 20% (5:1) for mowing
- Laid-back or flattened slopes (flatter than 3:1) should be utilized where sight lines are important or geological conditions warrant
- Slopes of plazas and other open space hardscape should be a minimum of 1% for concrete, 2% for unit pavers and other materials

### Guidelines: Rainwater Management

- Where possible the design should maintain and enhance natural drainage patterns, especially arroyos
- Design for natural infiltration and evaporation where possible to reduce water run-off during storm events
- Promote the filtering of run-off from roofs and paving via green or eco-roofs, bio-swales, filter strips, stormwater planters and other water-quality enhancing techniques

## Circulation Systems

There is a hierarchy of circulation throughout the UCR campus. The Campus Loop Road serves as a primary access point from regional roads and acts as an organizing element for service drives on the East Campus. Pedestrians should have priority in the academic cores of campus, especially on walkways closely associated with campus open spaces. Improvements to this system have been outlined in the Multi-Modal Transportation Management Strategy (MMTMS) with the goal of providing consistent, direct, safe and convenient pedestrian circulation to all areas of campus.

### Sustainability

- Use the narrowest cross-section feasible for vehicular traffic to reduce impervious surface and mitigate urban heat islands
- Use street trees wherever feasible. See Appendix B for the UCR Street Tree Plan. Street trees serve to filter pollutants originating from vehicles; they intercept rainwater, reducing polluted runoff. They also shade nearby buildings, reducing cooling costs and providing a cooler microclimate for sidewalks and streets
- Consider pervious surface pavements for circulation to allow rainwater to percolate into the ground instead of draining into nearby waterways
- Use recycled material in paving where feasible (recycled asphalt for example)

*For detailed Circulation System standards and cross-sections, please consult Appendix D.*



### General Guidelines

- Give priority to pedestrians on sidewalks and at street intersections. Curb radii should be as tight as possible and crosswalks should be enhanced with special paving and/or markings to emphasize primacy of the pedestrian
- Traffic-calming measures should be introduced wherever feasible
- All sidewalks and walkways should be barrier-free
- Within street rights-of-way, walks should be of sufficient width to create a pedestrian-friendly atmosphere and be separated from the street via a planting strip wherever possible
- Trees and plantings should be provided along pedestrian walks, providing definition and enclosure. See Appendix B for the UCR Street Tree Plan
- The pedestrian circulation system should provide direct paved connections between buildings and parking
- Pedestrian amenities and building entrances can be used to reinforce pedestrian paths
- Provide raised pedestrian crossings at each intersection or at crosswalks to clearly identify them to cause motor vehicles to slow down and be prepared to stop (see photo below)
- Walks should generally be straight, orthogonal or diagonal in alignment
- Integrate accessible routes in a visually cohesive manner. Routes should be direct and provide a similar quality and hierarchy of circulation as those provided for able bodied persons



*Example of raised crosswalk, Corvallis, OR*



### Service Areas and Drives

Service areas at UCR are generally on the outer, rear edges of buildings, minimizing pedestrian conflicts. They are typically accessed via narrow service drives from the Campus Loop Road. These drives can be used by emergency fire and life safety vehicles for quick access to the heart of UCR's East Campus. There are generally two types of service areas, used either for staging and delivery, or garbage/recycling storage and removal. The campus anticipates that it will be necessary to restrict many on-campus deliveries in the future and direct them to a central receiving point to be transferred to smaller vehicles and distributed by campus personnel. Service areas should be established to minimize aesthetic and circulatory effects on the campus while optimizing access and functionality.

### Sustainability

- Consider pervious pavement for service areas to allow for infiltration of rainwater where feasible
- Paved areas should be as small as necessary to service the building
- Service drive length should be minimized in planning new buildings
- Integrate space for recycling facilities into all new service areas
- Provision for electrical cart storage/parking with a recharging station should be considered where appropriate

### Guidelines

- The project site planning for future buildings should place service areas to minimize aesthetic impacts to the campus landscape
- Service areas should be sized to accommodate required vehicular movement and should be efficiently scaled to minimize their footprint
- Locate service areas away from pedestrian open spaces such as malls, courtyards and building entries
- Service drives when used informally by bicycles and pedestrians should be designed and managed to be safe and easily negotiated
- Consider adding ADA or special permit parking to certain service areas if there is sufficient space and access is appropriate for the disabled
- Service areas should be well-screened with vegetation or masonry walls and gated where possible, especially at interfaces with campus open spaces
- Loading docks, trash containers or utility structures should be located within buildings when possible
- Trash receptacle enclosures should be gated, visually subordinate to adjacent buildings and constructed from complimentary materials
- Consider impacts on other campus uses such as garbage smells, in placement of service areas
- Utility infrastructure and enclosures should generally be sited and designed to avoid aesthetic impacts to campus open space and campus circulation



## Surface Parking Lots

### Intent

Parking lots should be screened to minimize their visual impact on campus, but still provide safe access and egress and allow good surveillance and monitoring. Planting in surface parking lots can visually segregate the expanse of asphalt and shade pavements and vehicles.

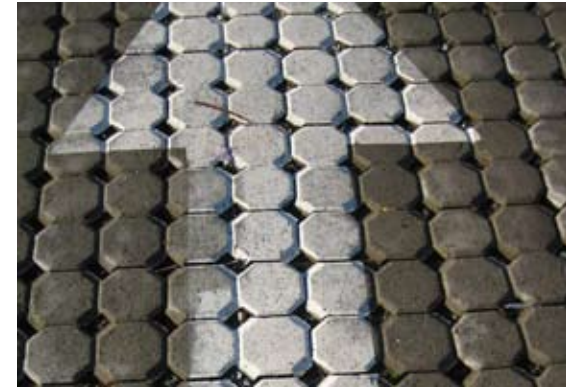
### Sustainability

- Parking lots could be paved in a pervious material such as porous asphalt or open-grid pavers to permit water percolation into the ground, with concrete curbs where feasible
- Minimize scale of surface lots
- Large lots will be replaced with parking structures as the campus grows
- Lots should be designed with drainage detention swales for stormwater runoff interception and filtration
- Lots should be 50% shaded with trees to reduce excessive heat buildup, with additional edge landscape
- Lots should be lighted according to sustainability guidelines on page S-8
- Consider facilities for electric auto recharging where feasible



### Guidelines

- Provide perimeter landscape buffers, designed to allow surveillance of the lot by campus security
- Designate a minimum of 10% of the parking area's interior for landscaping to enhance safety and comfort
- Each tree should be centered on at least 40 square feet of pervious soil area to ensure adequate air and water for root systems
- To increase shade, canopy trees should be provided every eight (8) linear stalls. Trees should be placed to minimize visibility conflicts. Planting islands should be staggered or triangulated to maximize the shade benefit from trees
- Low-maintenance trees should be used
- Provide clear and safe pedestrian circulation within surface lots
- Curb stops should be used sparingly
- Lots should be lit according to California Title 24 standards (1fc in 2007). Lighting should respect tree placement
- Comply with all ADA parking lot guidelines



*Pervious Pavers*



*Stormwater Detention Swale*





## Campus Wide Signage

The hundreds of signs on the UCR campus not only provide important information; they collectively form powerful and lasting impressions of the University and campus environment. Each sign should be considered a direct message from the administration and each is an opportunity to communicate clearly and present a positive image to students, staff, faculty and visitors. Sign descriptions, materials and standards will be found in Appendix E: UCR Campus Sign Program (*under separate cover*).

### Intent

Signage and graphics design guidelines seek to unify and improve all signage on the campus by:

- Organizing campus signs into useful, integrated categories;
- Standardizing materials, colors and type styles;
- Setting scale and size formats;
- Creating appropriate relationships to landscape, architectural and lighting elements; and
- Selecting appropriate design details.

Campus signage has been organized into the following functional groups:

### Monument & Entry Signs

Substantial monument signs have been designed for key entrances to the campus. Those entrances are identified as 1) University Avenue & West Campus Drive; 2) Martin Luther King Boulevard & Chicago Avenue; 3) Canyon Crest Drive & Martin Luther King Boulevard; 4) Big Springs Road & Valencia Hill Drive. For the main entrance signs, permanent, monumental materials such as natural stone and metal will be used to present a formal, welcoming appearance. The signs will be illuminated by remotely mounted fixtures. Letters may be fabricated of metals or incised into the surface of the monument.

In addition to the monument signs, a pylon sign of significant height and visibility has been designed for a location adjacent to the freeway. The purpose of this sign is to identify the UCR campus to freeway drivers and to provide an opportunity for University announcements of events. A high resolution LED screen would be incorporated into the pylon, providing a mechanism by which the University can communicate directly with the community.

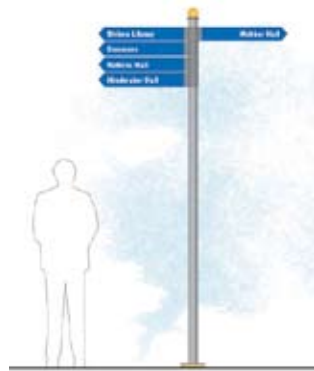
### Vehicular Directional Signs

A hierarchy of vehicular signage has been designed and will be deployed throughout the campus roadways and parking areas. The vehicular sign system

will be comprised of directional signs, parking identification sign and street name signs. These signs will display important and “reachable-by-car” campus destinations, and adjacent parking areas, with directional arrows. The signs will be highly visible and recognizable from over 150 feet where sight lines allow. (Drivers should always be able to see at least one directional sign from anywhere on the campus roadways, thus providing substantial driver reassurance.)

### Pedestrian Directional Signs

A system of pedestrian-directional signage has been designed and will be deployed throughout the campus. The directional signs will display important and frequented campus destinations with directional arrows. The directional signs will be a “finger-sign” or pointer style design that features pointed slats for each destination. Signs of this style are very pedestrian friendly and are less prone to vandalism. The height of these signs will be eight to ten feet. The type style will be a simple, bold sans-serif font for clarity and easy reading. Wording on the signs will be simple and use the shortest messages possible. The formal names of some destinations may need to be shortened for effective display on signs.



### Pedestrian Map Directories

A system of map directories has been designed and will be deployed throughout the campus, presenting an illustrated and lighted campus map and detailed listing of all destinations. The directories will present a clear, colorful map, matching that of printed hand-out maps. Maps will be easily changeable to allow for regularly updating campus information.

### Information Kiosks

Interactive kiosks will be installed primarily in parking structures for the display of campus information. Information links within the kiosk software can help foster communication, student interest and help build community on the campus.

### Free-standing Building Signage

A system of free-standing building identification signage has been designed and will be deployed throughout the campus. Each sign will display the formal name of a campus building and be located near the main building entry doors. The signs will be highly visible and recognizable from over 200 feet where sight lines allow. These signs will reflect the University's blue and gold colors, but will feature a more architecturally sensitive neutral background color. A letter size of approximately two to three inches will be used.

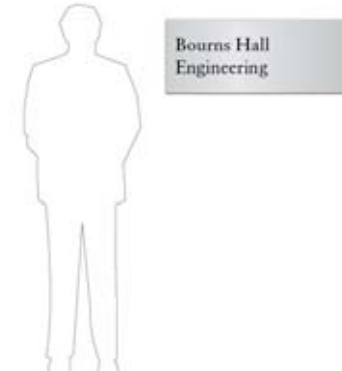


### Building-Mounted Signage

Building-mounted signs will be comprised of three categories: architectural parapet-mounted letter signs, panel signs and door mounted signs. These signs will be used in a variety of configurations in order to provide adequate visibility and identification for the building. Architectural letter signs will be used to prominently identify buildings, generally at or near the top of the structure. Letter size and location will be appropriately scaled and proportioned to the overall building. Panel signs will be used to supplement the architectural letter signs where building identification is required closer to the entry path. Door mounted signs shall be applied to all building entry doors. These signs shall be vinyl letters applied subsurface to clear or tinted glass.

### Interior Signage

A system of interior building signs has been developed to give consistency to the location, size, materials and color of the graphic elements within buildings. Directional signage, room number identification, building and floor directories, and all code required signs shall be laid out and located in accordance with the UCR Interior Signage Guidelines (*Appendix E*, under separate cover.)



### Color and Contrast

With its large scale, open spaces and long sight lines, the campus needs highly visible and recognizable signs. The use of bold and high contrast colors and materials will help signage elements stand out in the environment. Directional signage will reflect the University's school colors of blue and gold with sign messages in white. Monument signage will be constructed using a more architectural palette of natural stone and metal finishes.

For more details, please consult the Campus Sign Program (*Appendix E*, under separate cover, and posted on the UCR Capital and Physical Planning website at [www.apb.ucr.edu](http://www.apb.ucr.edu).)



*Typical parapet-mounted letter sign*

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## ARCHITECTURAL GUIDELINES

The Architectural Guidelines provide detailed descriptions and guidelines for the elements listed below:

- **Outdoor Circulation**
- **Building Orientation and Entrances**
- **Relationship of Interior to Exterior at Ground Floor**
- **Building Massing and Articulation**
- **Building Materials and Color Palette**
- **Building Response to Climate**

For each element, the guidelines address the defining characteristics of UCR and strategies for the design of buildings to complement and enhance the overall campus. When a new building is proposed, the Campus Framework, Site Guidelines and all of the following Architectural Guidelines should be considered.

New buildings must also adhere to University-wide sustainability directives which include outperforming the California Energy Code and meeting the US Green Building Council's Leadership in Energy and Environmental Design (LEED) "Certified" rating, while striving for "Silver" rating or higher.



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## Outdoor Circulation

### Intent

One of the defining characteristics of UCR is the integration of campus buildings with outdoor spaces. The careful siting of buildings helps give definition to open spaces, creating varied experiences across the campus, from naturalistic open spaces to formal malls to upper floor courtyards.

Covered walkways, exterior corridors and connections between buildings further define these outdoor spaces while providing shelter for pedestrians from the sun. Exterior connections between buildings also create visual links and help create a cohesive sense of place on the campus, and are an integral part of the campus circulation system.

The mild climate at UCR makes it possible to have more permeable buildings. The active use of the exterior of the buildings on multiple levels engages the building occupants with the outdoor space.

### Sustainability

- Utilizing covered but not enclosed exterior circulation takes advantage of UCR's favorable climate, reducing the need for conditioned space, providing shade and mitigating solar gain on the building.

### Guidelines

New buildings should be sited and designed to support, enhance and activate common outdoor space. Incorporation of exterior circulation elements and gathering spaces is encouraged, including:

- Freestanding Arcades
- Arcades connected to buildings
- Courtyards/Plazas
- Roof terraces
- Exterior circulation at multiple levels of a building
- Linkages to existing buildings, including covered walkways and bridges

## Outdoor Circulation Examples



### Rivera Library

- The Rivera Library arcade provides an exterior circulation space along a primary campus walkway that is sheltered from the sun
- Well lit at night, this arcade becomes a beacon for library users
- The degree of openness of the arcade creates visual continuity with the adjacent Carillon Mall
- The arcade has become an iconic element of the campus architecture



### Bourns Hall

- The proportions of exterior corridors at Bourns Hall provide shelter while maintaining an open feeling. In this way, the building engages the adjacent open space
- The outdoor corridors connect to other wings of the building as well as the adjacent Engineering Building Unit 2, enhancing the network of campus circulation



### Olmsted Hall

- Olmsted Hall features a series of arched supports that provide open circulation underneath the building
- This ground floor circulation creates a large degree of transparency from the courtyard to the landscaped area beyond



### Humanities and Social Sciences

- Humanities and Social Sciences is comprised of a number of wings which are connected by exterior bridges
- On the ground level, outdoor corridors are provided to provide circulation that is sheltered from the sun

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## Building Orientation and Entrances

### Intent

The careful siting and orientation of buildings helps define the character of a campus. One of the key strengths of the UCR campus is the integral nature of the buildings and open spaces. The buildings are oriented in ways to help both define and differentiate the adjacent open spaces across the campus.

Building entrances help orient students and visitors to the campus. It is important that entrances be clearly marked and visible from a distance. The orientation of a building and its relationship to adjacent outdoor spaces also establishes a hierarchy that is critical as part of the system of wayfinding on the campus. In combination with the design of the entries, this hierarchy helps clarify primary and secondary points of entry.

Currently on the UCR campus, some entries to buildings are not on axis with or visible from adjacent outdoor space, but instead are marked by an arcade. These arcades create informal gathering spaces, identify the entries indirectly and provide sheltered outdoor circulation. This strategy of marking entries reinforces a quality of informality on the campus.

All building entries should be designed to feel safe and secure. When combined with arcades or other covered exterior spaces, it is especially important to ensure the entry is well lit and that signage provides building identification on all doors including service areas.

### Sustainability

- Orientation should consider solar angles and wind direction to reduce energy consumption (*see Building Response to Climate, page A-12*)

### Guidelines

- Primary entrances (typically adjacent to streets and quadrangles) should be carefully located; pedestrian circulation around and potentially through the building should also be considered
- The relationship of the building to the campus open space network and useable open space is critical; facades of buildings fronting on major open spaces (*see Regulating Plan, pages 14-15*) require careful design to respect their prominent locations
- Buildings should help frame significant view axes
- Building orientation should consider future development on or adjacent to the site, including potential linkages to such development

All new building entries should:

- Be clearly defined
- Be well lit in evening hours
- Be articulated to differentiate primary and secondary entrances
- Provide building name on all doors and at loading dock/service areas (*see Appendix F: Campus Sign Program for specifics*)

Typical ways to designate entries include:

- Incorporation of a canopy or other feature to mark the entry
- Articulation of entries as a vertical element
- Orientation of building entries toward major axis or primary open space
- Horizontal articulation of entries with arcade elements

## Building Orientation and Entrances Examples



**Anderson Hall**

- The prominent location of this building is central to its identity; in future, it will define the end of a major campus open space (Citrus Mall)
- The main entry is clearly defined through symmetrical treatment of the façade, incorporation of a small sheltered area and the direct, axial relationship to courtyards
- The recessed entry creates contrast of dark to light (which reverses when lit at night) to further mark the entry clearly



**Webber Hall**

- Webber Hall defines the east end of the Carillon Mall, making it a focus of the open space and destination of the pedestrian circulation
- A prominent arcade marks the main entries in addition to providing sheltered outdoor circulation
- The arcade is visible from a distance; therefore, building entries are perceived from a distance even though the actual entrances are not visible



**Spieth Hall**

- Spieth Hall's covered outdoor area adjacent to the Carillon Mall creates a transition as part of the entry sequence
- Transparency to the courtyard beyond draws focus to it and helps mark the entry



**Science Laboratories 1**

- Entry is marked by a vertical expanse of glass that can be seen from a distance
- Lit at night, entry becomes a beacon
- While not symmetrical, the entry is clearly oriented to open space
- A canopy provides shelter at the entry

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## Relationship of Interior to Exterior at Ground Floor

### Intent

A successful campus relies on a positive relationship of its buildings to adjacent exterior spaces. Buildings should not simply define or enclose an open space but should also actively engage them. It is important to have ground floor levels of buildings that maintain human scale and encourage activity in and around the buildings. It is at the ground floor where people interact most directly with a building, so the scale should be more attuned to human dimensions and perception.

### Sustainability

- Careful design of the indoor-outdoor transition can minimize indoor energy loss. Low-emittance glazing will also improve building efficiency
- Shaded arcades at entries also offer protection from the weather and shade interior spaces

### Guidelines

Transparent and open ground floors are to be provided to increase the interaction between inside and outside. The ground floors of new buildings should be designed according to the following:

- Ground floor spaces should house active uses, for instance, classrooms and class laboratories
- Facades at the ground floor should be open to view from adjacent spaces. Incorporate ground floor windows, with clear glass, for 50% of the length and 25% of the area of the ground floor wall area. Blank walls should be avoided
- Permeable ground floor areas such as arcades or open connections to internal courtyards should be incorporated
- Entries providing a direct visual connection to internal courtyards are also encouraged
- Multiple entries should be incorporated to activate ground floor facades
- A hierarchy of building entries (primary, secondary, service etc.) should be reflected in the design of the façade
- The design of the ground floors of buildings should be closely coordinated with the design of the adjacent open spaces, plazas or courtyards



## Relationship of Interior to Exterior at Ground Floor Examples



**Bourns Hall**

- The ground floor is very open to the courtyard visually and helps to activate this outside space at Bourns Hall
- The use of glass on the upper levels adjacent to the exterior corridors also creates a more active environment for these spaces
- The recessed (arcaded) ground floor mediates between the inside and outside, offering protection from the weather and shading the interior space



**Hinderaker Hall**

- Large areas of glass at this entry and textural treatment of the ground floor walls activate this façade of Hinderaker Hall
- The transparency of the glass at this entry invites people to “pass-through” the building, adding to the network of circulation on campus
- The scale of the ground floor is appropriate to the size of the adjacent open space



**Engineering Building Unit 2**

- The ground floor room is open to view from the adjacent courtyard, creating a visual link and providing an active facade in this location



**Webber Hall**

- The combination of arcade and steps along this façade of Webber Hall defines the edge of this courtyard space.
- The arcade connects to entries at its ends, and mediates between the ground floor spaces and the larger open space of the Carillon Mall

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## Building Massing and Articulation

### Intent

As stated in the Campus Design Framework, the architectural character of UCR is in part defined by the expression of structure and the honest use of materials. In combination with this, attention to building massing and articulation is important to reinforce the character of the campus.

In general, newer buildings on campus are larger than original buildings, reflecting the need to provide a compact, walkable academic core with facilities that meet growing enrollment levels. It is important to be sensitive to existing smaller buildings and to develop the campus in a way that maintains a comfortable pedestrian scale on the primary outdoor spaces. One of the ways to achieve this is to carefully compose the massing of large buildings into smaller building volumes and use thoughtful articulation of materials to reduce the overall scale.

### Sustainability

- Effective building location and massing can optimize solar orientation, natural ventilation and passive heating and cooling and thus reduce building energy use

### Guidelines

Building height and coverage must be in conformance with the LRDP as well as the following:

- New structures should be limited in height to four stories around the Carillon Mall and other major open spaces to maintain a pedestrian scale. They could step back from four stories up to six stories as appropriate to maintain density, if they remain subordinate to the Carillon Tower or other future campus icons
- New structures should primarily have flat roofs, incorporating terraces where feasible
- Rooftop mechanical equipment should be screened from view at ground level and from other buildings where feasible
- Temporary trailer or modular type facilities are discouraged within the academic cores

The following factors should also be considered:

- Divide large buildings into smaller components to reduce the overall scale
- Incorporate smaller-scale elements on lower levels to provide a human scale
- Minimize blank walls at the ground floor and encourage active uses and ample fenestration (see *Relationship of Interior to Exterior at Ground Floor*, page A-6)
- Reduce building mass to mediate scale and provide transitions to open spaces and adjacent buildings
- Express the structural frame clearly to reduce the apparent scale of the building
- Express circulation elements as separate components (see *Outdoor Circulation*, page A-2)

## Building Massing and Articulation Examples



### Physical Education Building

- The simple detailing and massing of the Physical Education Building add interest to this otherwise plain façade
- The volumes as they are articulated “step down” to the smaller scale of the entry arcade adjacent to the open space, providing a transition for the pedestrian zone



### Science Laboratories 1

- Science Laboratories 1 is stepped back from the Carillon Mall to reduce the perception of mass
- The floor levels are articulated in the banding of the brick to add more of a human scale to the building



### Hinderaker Hall

- Hinderaker Hall is articulated as distinct volumes which reduces the apparent mass of the building
- The detail and openness of the façade at the ground level provide a transition to the pedestrian zone



### Bourns Hall

- Bourns Hall is articulated with distinct volumes, reducing the mass of a large building into a series of volumes well scaled to the adjacent open space
- A variety of materials (including brick, metal panel, glass and unpainted concrete) are used with a clear expression of the structural system
- The materials are used in a manner that highlights the construction of the building, creating a legible façade in a design approach consistent with the early campus buildings

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## Building Materials and Color Palette

### Intent

As stated in the Campus Design Framework, the architectural character of UCR is in part defined by the clear and direct use of materials. The formative years (1950s and 1960s) in the development of the campus saw the direct expression of structure and “honest” use of materials, which lent a simple, quiet and modest dignity to the campus buildings, which were also deferential to the campus open spaces.

The selection of building materials should be sensitive to the overall context of the UCR campus as well as the immediate surroundings of the building. Buildings, materials and colors should be harmonious with the existing buildings on campus to achieve an overall sense of unity. The UCR campus is characterized by this continuity, due in large part to the use of a consistent brick blend as a means of tying the buildings together.

All UCR buildings are expected to incorporate the ‘UCR Blend’ brick on campus to continue this tradition. Other building materials must be compatible with this range of brick tones as well as glazing types and other expressions of metal and concrete found on the campus.

The selection of building materials should establish a sense of permanence and quality on the campus. Materials should be durable, lasting and detailed appropriately for climatic conditions and patterns of maintenance.

### Sustainability

- The University of California requires that UCR use its purchasing power to promote the availability of recycled and rapidly renewable content for building materials, subsystems, components, equipment, and supplies.
- Select materials produced as close to southern California as possible
- Consider materials produced with minimal pollution or adverse impacts to sensitive ecosystems (for example, certain tropical timber)
- Maximize energy conservation by considering life cycle heating and cooling costs for a range of potential building materials

### Guidelines

- Select low reflectance glass, emphasizing clarity; reflective or mirror glass is not permitted
- Select a color palette that is harmonious with existing campus buildings using the UCR brick blend as an organizing element

Selection of materials should also be based on the following considerations:

- Ensuring long-term durability and ease of maintenance
- Providing textural variety
- The type of structure, facility occupancy and use
- Minimizing vandalism

## Building Materials and Color Palette Examples



**Watkins Hall**

- This example of use of UCR brick combined with horizontal banding in Watkins Hall is representative of many of the original UCR buildings
- The horizontal banding provides an appropriate edge to a linear open space



**Pierce Hall**

- Traditional use of brick interrupted by an articulated panel reduces the scale of this façade of Pierce Hall
- Shadows and light activate the building surface



**Physical Sciences**

- The use of a variety of materials (brick, metal panel, glass and concrete) gives dimension and scale to Physical Sciences
- The horizontal banding and articulation of the windows reduces the scale of this façade



**Rivera Library**

- Rivera Library is articulated into smaller volumes rendered with a variety of materials
- The detail and scale of the glazing on this wing adds interest to the façade and reflects the division of space inside

---

## Building Response to Climate

### Intent

An appropriate response to climate is integral to a building's success. The siting and layout of a building should consider the climate of the region as well as the microclimate of the building site. The building's response to the sun is a major factor in the functionality of the building, as is the consideration of wind and other weather patterns.

The warm climate at UCR makes it possible to open the buildings up to the surroundings with the incorporation of exterior circulation (see *Outdoor Circulation*), thereby creating a more active relationship with the outdoors than is possible in many regions.

The ability for building occupants to control their environments through operable windows and shading devices helps to keep them connected to the larger environment. Passive solar design and daylighting strategies can reduce energy use. Use of natural ventilation can reduce a building's energy use; however, programmatic use, weather patterns and security should be taken into account when incorporating operable windows into campus buildings.

### Sustainability

- Integrate building and landscape design. Adjacent plantings such as deciduous trees provide afternoon shade in the summer, helping with building cooling
- Incorporate green roofs
- Incorporate operable windows in all residence halls
- Incorporate operable windows where appropriate in academic buildings and offices
- Maximize daylighting opportunities
- Incorporate photovoltaic systems in building facades or rooftops
- Window placement and orientation should take advantage of climatic features of the site including solar orientation and natural breezes

### Additional Guidelines

Building elements for protection from sun, wind and rain should be employed in all buildings. Typical elements include:

- Arcades--free-standing or attached to buildings
- Canopies
- Sun shading devices appropriate to orientation and fenestration (such as the 'sails' on EBU2)
- Recessed building entries and windows

## Building Response to Climate Examples



### Anderson Hall

- Exterior circulation in this ground floor arcade provides human scale and creates an intimate relationship with the adjacent courtyard
- The incorporation of covered exterior circulation is a common strategy in this climate and recognizes the tradition of being outside while needing protection from the sun



### Watkins Hall

- This covered area along one of the primary circulation routes marks the entry to Watkins and provides a sheltered area
- The circular cut-outs provide ample natural light for the space while adding visual interest



### Spieth Hall

- This courtyard at Spieth Hall is a good example of passive solar design with a combination of horizontal and vertical sunshades for protection from the summer sun
- The shading devices are fully integrated with the design of the building
- Trees in the courtyard provide additional shading of the building and courtyard



### Engineering Building Unit 2

- Engineering Building Unit 2 employs a variety of strategies to encourage the use of the outdoor spaces around the building
- Exterior circulation creates a more permeable building envelope and provides sun-shading for adjacent spaces
- The design of the upper courtyard includes high 'sails' to provide protection from the sun

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## **CONCLUSION:**

### ***Design For A Cohesive Campus***

The campus Design Guidelines are intended for use by every architect, landscape architect, civil engineer and planner hired by UCR for consulting services. This document represents a directive to these consultants to incorporate these guidelines into design work for the campus.

The guidelines are purposefully not presented as regulatory restrictions or prescribed standards. They provide an informal framework within which designers who willingly commit to contribute to the campus legacy of quality and continuity, can add positively to the built environment.

The UCR Campus Architect, Capital & Physical Planning, the Office of Design & Construction and the Design Review Board will utilize this document as a template within which all proposed architectural designs and site plans will be measured. The document is intended to be a dynamic work-in-progress which will evolve as UCR grows and will be adapted to future programmatic and physical challenges.



**Every time a student walks past a really urgent, expressive piece of architecture that belongs to their college, it can help reassure them that they do have that mind, they do have that soul.**

Louis Kahn



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## APPENDICES





## Appendix A: Campus Plant Material Palette

The following plant material has been approved for use at UC Riverside:

		Drought Tolerant	Heat Tolerant	CA Native	Comments
<b>Evergreen Trees</b>					
<i>Acacia baileyana</i>	Bailey Acacia				Beautiful color but often chlorotic at UCR
<i>Acacia pendula</i>	Weeping Acacia				
<i>Acacia podalyriifolia</i>	Pearl Acacia				
<i>Acacia retinoides</i>	Acacia Floribunda				
	Western Australia				
<i>Agonis flexuosa</i>	Peppermint				Gorgeous small tree; worth trying especially as accent
<i>Alnus rhombifolia</i>	White Alder				True climax tree, medieval forest look; best in natural, riparian areas
<i>Arbutus unedo</i>	Strawberry Tree				"Marina" cultivar is a great tree. Plant big. Do not use near lawns or paved areas. Edible fruit/dense canopy often sooty mold a problem if too humid
<i>Brachychiton acerifolius</i>	Flame Tree				
<i>Brachychiton populneus</i>	Bottle Tree				Great shade tree. Good windbreak. Susceptible to Texas root rot.
<i>Callistemon lanceolatus</i> (Tree)	Red Bottlebrush				
<i>Callistemon viminalis</i>	Weeping Bottlebrush				
<i>Calocedrus decurrens</i>	Incense Cedar				Underused local forest tree w/ great fragrance; good drainage, ample cool season water
<i>Calodendrum capense</i>	Cape Chestnut				Statement tree w/ bold lilac flowers; requires rich loamy soil
<i>Cedrus atlantica</i>	Atlas Cedar				Tough urban conifer; needs lots of room/best not in lawns can windthrow if shallow rooted. Also Blue Atlas (glauca) variety.
<i>Cedrus deodara</i>	Deodor Cedar				Somewhat larger than Atlas Cedar. These cedars are all beautiful; prune to avoid windsail
<i>Chorisia speciosa</i> 'Majestic Beauty'	Floss Silk Tree				"Majestic Beauty" is thornless variety. Lovely pink flower, green trunk/great great flower
<i>Cinnamomum camphora</i>	Camphor Tree				Great evergreen shade tree, prototypical tree, slow-growing. Very nice bark and trunk color and texture w/ contrasting shiny leaves
<i>Citrinus species</i>	Citrus varieties				UCR's heritage. Hedges, groves, specimens all very ornamental
<i>Cupaniopsis anacardioides</i>	Carrot Wood				Females drop messy, sticky seed pods; specify male varieties. Nice small tree with brittle wood
<i>Cupressus sempervirens</i>	Italian Cypress				"Exclamation point" trees good in groves, borders; tough tree

		Drought Tolerant	Heat Tolerant	CA Native	Comments
<i>Eriobotrya deflexa</i>	Bronze Loquat				Non-fruiting loquat. Red-bronze foliage.
<i>Eucalyptus citriodora</i>	Lemon Scented Gum				Susceptible to spotted-gum eucalyptus psyllid. Striking architecturally (plant away from buildings)
<i>Eucalyptus erythrocorys</i>	Red Cap Gum				Rangy small tree but outstanding floral and seed cap display
<i>Eucalyptus ficifolia</i>	Scarlet-Flowering Gum				Good canopy tree. Use sparingly
<i>Eucalyptus lehmanni</i>	Lehman Eucalyptus				Good canopy tree. Subject to frost damage in Sunset Zones 17-18
<i>Eucalyptus leucoxylon</i>	White Ironbark				Striking cream-colored bark. Good silhouette against blank tall building façade
<i>Eucalyptus polyanthemos</i>	Silver Dollar Gum				Smallest of eucalyptus species
<i>Feijoa sellowiana</i>	Pineapple Guava				Edible fruit and flower. Avoid use in paved and lawn areas/moderate frost sensitivity
<i>Ficus microcarpa nitida</i> 'Green Gem'	Indian Laurel Fig				Striking, robust "jungle tree". Avoid use near paving, surface roots heave sidewalks.
<i>Geijera parviflora</i>	Australian Willow				Small-medium sized weeping willow-like tree/always attractive, drought tolerant, carefree tree
<i>Heteromeles arbutifolia</i>	Toyon				Subject to fire blight. Plant in well-drained soils. Absolutely gorgeous local native (hates summer water).
<i>Lophostemon (Tristania) conferta</i>	Brisbane Box				Eucalyptus relative. Very formal structure. Good lawn and street tree.
<i>Magnolia grandiflora</i>	Southern Magnolia				Great shade tree but excessive flower drop. Excellent accent tree (leaves & flowers) buttressing roots break hardscape
<i>Melaleuca quinquenervia</i>	Cajeput Tree				Very nice small tree; street tree or multi-trunk tree. Upright form. Good drainage appreciated
<i>Metasequoia glyptostroboides</i>	Dawn Redwood				Deciduous conifer; novelty tree, striking. Good fall and spring leaf color, accepts lawn water. Great in groves.
<i>Olea europaea (fruitless varieties)</i>	Fruitless Olive				Bulletproof; 'Swan Hill' fruitless variety; great in containers
<i>Pinus canariensis</i>	Canary Island Pine				Easy-growing to 50'. Good avenue tree--the best--but watch for psyllid, mite infestations
<i>Pinus coulteri</i>	Coulter Pine				Indigenous to local mountains. Watch summer water. Nice tree but big dangerous cones
<i>Pinus eldarica</i>	Mondell Pine				Great sturdy avenue tree
<i>Pinus halepensis</i>	Desert (Aleppo) Pine				Tough, loves heat but rangy habit and messy needle drop
<i>Pinus nigra</i>	Austrian Black Pine				
<i>Pinus pinea</i>	Italian Stone Pine				Classic umbrella shape pine. Great avenue tree. If deep roots not encouraged, this beautiful tree can windthrow

		Drought Tolerant	Heat Tolerant	CA Native	Comments
<i>Pittosporum phillyraeoides</i>	Willow Pittosporum				Nice accent tree
<i>Pittosporum rhombifolium</i>	Queensland Pittosporum				Great patio tree. Do not install over hardscape
<i>Pittosporum undulatum</i>	Victorian Box				
<i>Podocarpus elongatus</i>	Fern Podocarpus				
<i>Podocarpus gracilior</i>	Fern Pine				Tough, fast growing evergreen; can be gangly in youth; good street tree
<i>Podocarpus henkelii</i>	Long-leaf Yellow Wood				Erect tree with slender drooping leaves in youth.
<i>Podocarpus macrophyllus</i>	Yew Pine				Good street tree
<i>Prosopis glandulosa</i>	Honey Mesquite				Desert tree, spreads. Nice structure w/ age
<i>Prunus caroliniana</i>	Carolina Cherry				Great shrub/ good screen shiny evergreen. Tough w/ arid forest look
<i>Prunus lusitanica</i>	Portugal Laurel				Good, tough shrub
<i>Prunus ilicifolia ilicifolia</i>	Holly-Leaf Cherry				Often used as giant shrub - needs good drainage
<i>Prunus ilicifolia lyonii</i>	Catalina Cherry				Good, carefree, attractive w/ little water
<i>Quercus agrifolia</i>	California Live Oak				Great; native grown, needs minimal summer water; do not use with regular irrigation. Most common local oak; use more in wild areas
<i>Quercus chrysolepis</i>	Golden Cup Oak				Great structure (needs room) needs good drainage
<i>Quercus ilex</i>	Holly Oak				Good evergreen tree. Good small-scale street tree/ thrives in lawns, extremely fertile acorns are nuisance in shrub beds
<i>Quercus suber</i>	Cork Oak				Good avenue tree/ more need to be planted so people can feel its bark
<i>Quercus virginiana</i>	Southern Live Oak				Best oak for lawn planting- takes regular irrigation/ look great on campus lawns
<i>Schinus molle</i>	California Pepper				Native to Peru. Give plenty of room to grow.
<i>Schinus terebinthifolius</i>	Brazilian Pepper				High maintenance
<i>Tipuana tipu</i>	Tipu Tree				Bold structure
<i>Ulmus parvifolia 'Drake'</i>	Chinese Evergreen Elm				'Drake' has small leaves, weeping habit; 'True Green' varietal is most evergreen of species.
<i>Umbellularia californica</i>	California Laurel Bay				None on campus now. Extremely aromatic leaf, nice shape. Small tree in southern California

		Drought Tolerant	Heat Tolerant	CA Native	Comments
<b>Deciduous Trees</b>					
<i>Acer macrophyllum</i>	Bigleaf Maple				Native to stream banks, moist canyons. Resists oak root fungus. Large shade tree.
<i>Acer palmatum</i>	Japanese Maple				Does well in patios, as accents or large pots; nice mini-forests
<i>Aesculus californica</i>	California Buckeye				Good for native plantings; produces chestnuts
<i>Albizia julibrissin</i>	Mimosa Tree/Silk Tree				Tough, colorful and fast
<i>Alnus cordata</i>	Italian Alder				
<i>Alnus rhombifolia</i>	White Alder				Good wind break
<i>Bauhinea variegata</i>	Purple Orchid Tree				Semi-evergreen. Ungainly shape but great flowers and excellent for color -- at a distance
<i>Brachychiton acerifolius</i>	Flame Tree				Red-flowering tree. Briefly deciduous. Eye-catching flower display is the best. Tough tree
<i>Cercis occidentalis</i>	Redbud				Good small flowering tree, drought tolerant and really colorful
<i>Cupaniopsis anacardioides</i>	Carrotwood Tree				
<i>Fraxinus velutina</i> 'Modesto'	Modesto Ash				Good option; good large street tree. Great fall color
<i>Fraxinus uhdei</i> 'Majestic Beauty'	Evergreen Ash				
<i>Fraxinus velutina</i>	Arizona Ash				
<i>Fraxinus angustifolia</i> 'Raywood'	Raywood Ash				
<i>Ginkgo biloba</i> 'Autumn Gold'	Maidenhair Tree				Great; slow growing; specify variety to make sure it is a male plant. Great vertical fall color
<i>Gleditsia triacanthos</i> 'Shademaster'	Honey Locust				Nice color flowers, but junky tree, esp. for traffic areas
<i>Jacaranda acutifolia</i> ( <i>mimosifolia</i> )	Jacaranda				Great purple flowers; can be brittle and prone to wind damage, semi-evergreen. Messy over pavement
<i>Juglans californica</i>	California Black Walnut				
<i>Koelreuteria bipinnata</i>	Chinese Flame Tree				Good street trees. Stains hardscape w/ tannic acid
<i>Koelreuteria paniculata</i>	Golden Rain Tree				Good street trees. Good Fall color. Stains hardscape w/ tannic acid
<i>Lagerstroemia indica</i> 'Indian Tribe'	Crape Myrtle				Good medium flowering. Many varieties. Select for hardiness and mildew resistance. The best summer color tree in the area.
<i>Liquidambar formosana</i> 'Afterglow'	Chinese Sweet Gum				Needs large tree well. Not great street tree because of spikey seed pods; great fall color.
<i>Liquidambar styraciflua</i> 'Palo Alto'	American Sweet Gum				Needs large tree well. Many varieties to choose from. See above
<i>Liriodendron tulipifera</i>	Tulip Tree				Needs deep, well-drained, slightly acidic soils
<i>Magnolia soulangeana</i>	Saucer Magnolia				Good large shrub/ small tree. Many varieties

		Drought Tolerant	Heat Tolerant	CA Native	Comments
<i>Magnolia stellata</i>	Star Magnolia				Large shrub/small tree. Many varieties
<i>Pistacia chinensis</i>	Chinese Pistache				Slow growing. Good street tree, great fall color.
<i>Platanus acerifolia</i> 'spp.'	London Plane Tree				"Bloodgood" is resistant to anthracnose. "Yarwood" is resistant to oak root fungus; "Columbia" is resistant to both
<i>Platanus racemosa</i>	California Sycamore				Good native. Anthracnose causes irregular form. Great trunk color.
<i>Populus nigra</i> 'Italica'	Lombardy Poplar				Needs room to grow. Good tall windbreak. Roots can be disruptive
<i>Prunus persica</i>	Flowering Peach				
<i>Pyrus calleryana</i> 'spp.'	Ornamental Pear				'Bradford' is poor variety with weak crotch; select alternate variety such as 'Aristocrat' or 'Chanticleer'
<i>Quercus coccinea</i>	Scarlet Oak				Not recommended for turf areas
<i>Quercus douglasii</i>	Blue Oak				
<i>Quercus kelloggii</i>	California Black Oak				Striking upright oak, good fall color (woody look)
<i>Quercus lobata</i>	California White Oak				Large tree in maturity
<i>Quercus virginiana</i>	Southern Live Oak				Superior in turf areas
<i>Sapium sebiferum</i>	Chinese Tallow Tree				
<i>Tipuana tipu</i>	Tipu Tree				Semi-evergreen; good street tree if flower litter is tolerable. Needs plenty of space
<i>Zelkova serrata</i> 'spp.'	Sawleaf Zelkova				Good street tree. 'Green Vase'
<b>Palms</b>					
<i>Syagrus romanzoffianum</i> (aka <i>Cocos plumosa</i> )	Queen Palm				Formerly <i>Arecastrum romanzoffianum</i> 'Feather Frond'
<i>Brahea armata</i>	Mexican Blue Palm				Slow growth, compact fronds with nice color
<i>Brahea edulis</i>	Guadalupe Palm				Great small fan palm. Slow-growing, creamy-colored fronds.
<i>Butia capitata</i>	Pindo Palm				Graceful arching fronds; slow growing
<i>Chamaerops humilis</i>	Mediterranean Fan Palm				Natural multi-trunk, small-med. sized palm. Attractive at maturity
<i>Phoenix canariensis</i>	Canary Island Date Palm				Elegant but hard to find. Fronds heavy
<i>Phoenix dactylifera</i>	Date Palm				Classic date palm of desert lore
<i>Phoenix reclinata</i>	Senegal Date Palm				Beautiful, stately natural multi-trunk palm
<i>Phoenix roebelenii</i>	Pygmy Date Palm				Subject to frost damage. Afternoon shade advised
<i>Trachycarpus fortunei</i>	Windmill Palm				Tight and compact. Good for small areas.
<i>Washingtonia filifera</i>	California Fan Palm				Needs room, subject to fungal disease
<i>Washingtonia robusta</i>	Mexican Fan Palm				Grows extremely fast, reaches 100 feet tall

		Drought Tolerant	Heat Tolerant	CA Native	Comments
<i>Washingtonia robusta</i> 'hybrid'	Hybrid Mexican Fan Palm				Hybrid between robusta and filifera is smaller than species
<b>Shrubs</b>					
<i>Abelia grandiflora</i> 'Edward Goucher'	Edward Goucher Abelia				Sturdy and attractive
<i>Acacia</i> species	Acacia				Good for slope stabilization; <i>A. redolens</i> in particular
<i>Agapanthus africanus</i>	Lily of the Nile				Varieties include dwarf and white flowering. Midnight Blue variety has deep color
<i>Arbutus unedo</i> 'Compacta'	Strawberry Tree				Great for sunny, open areas. Otherwise subject to mildew.
<i>Arctostaphylos</i> species	Manzanita				Good; slow growing; needs excellent drainage
<i>Caesalpinia gilliesii</i>	Bird of Paradise Bush				Not 'true' bird; 'Pulcherrima' variety has bright orange flowers
<i>Callistemon</i> species	Bottlebrush				Tough; large shrub. Honeybee magnet
<i>Camellia</i> species	Camellia				Spectacular in shady, northern exposures
<i>Ceanothus</i> species	California Lilac				Short-lived; no water; many varieties; height ranges. Good accent
<i>Cistus</i> species	Rockrose				Short-lived; not good with overhead irrigation
<i>Clivia miniata</i>	Kaffir Lily				Full shade; good in pots; red-orange flowers. Needs good drainage
<i>Cocculus laurifolius</i>	Snailseed				Sun or shade; large shrub. Foundation plant
<i>Cotoneaster</i> species	Cotoneaster				Reliable in proper conditions. Fireblight possible.
<i>Dendromecon harfordii</i>	Island Bush Poppy				Good for native plant areas. Great flower display. <i>D. rigida</i> also good.
<i>Dietes bicolor</i>	Fortnight Lily				Reliable but needs thinning with age.
<i>Fremontodendron californicum</i>	Common Flannel Bush				No water needed; several varieties
<i>Grevillea</i> 'Noellii'	Noel Grevillea				Grows under eucalyptus trees
<i>Hebe</i> 'Coed'	Veronica				Doesn't like dry, windy conditions
<i>Hemerocallis</i> species	Day Lily				Good for naturalizing, esp. evergreen varieties
<i>Ilex</i> species: <i>cornuta</i> and <i>vomitaria</i>	Chinese and Yaupon Holly				Good for borders
<i>Iris douglasiana</i>	Beardless Iris				Native; good with oaks
<i>Juniperus</i> species	Juniper				Good for forested border effect
<i>Leptospermum scoparium</i>	Australian Tea Tree				Needs good drainage. Great branch structure as it ages
<i>Ligustrum japonicum</i> 'texanum'	Japanese Privet				Good standard hedge plant. Profuse flowers if untrimmed
<i>Lonicera japonica</i> 'Halliana'	Hall's Honeysuckle				Aggressive, invasive vine/bank or fence cover
<i>Mahonia aquifolium</i> and 'Compacta'	Oregon Grape				Good with native oaks, natural plantings, esp. groundcover
<i>Nandina domestica</i> and 'Compacta'	Heavenly Bamboo				Good shade plant but also takes sun. Many compact colorful varieties

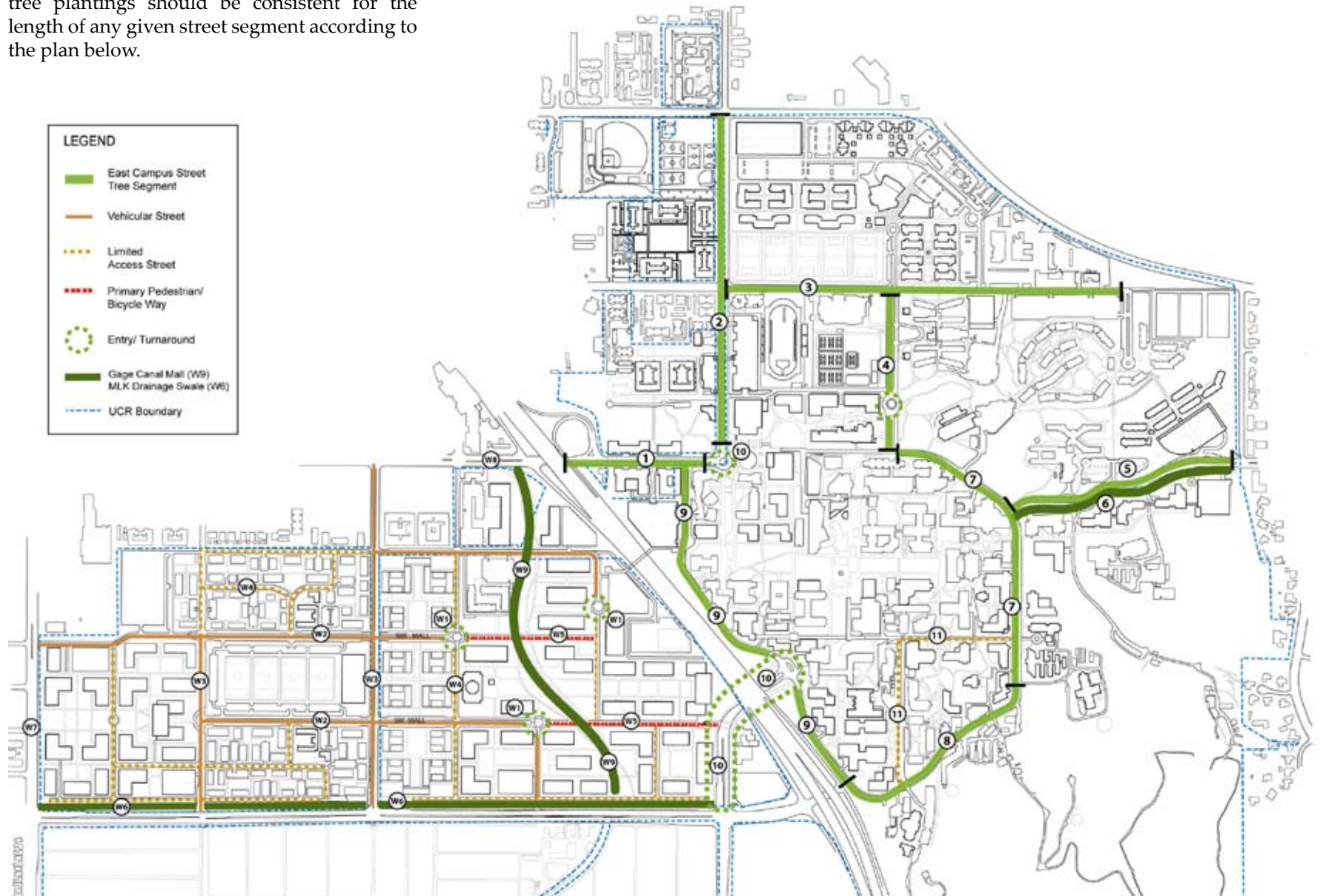


		Drought Tolerant	Heat Tolerant	CA Native	Comments
<i>Osmanthus fragrans</i>	Sweet Olive				Fragrant. Gives afternoon shade
<i>Phormium tenax</i>	Flax				Select varieties that don't revert; many varieties; expensive
<i>Pittosporum tobira</i> and 'Wheeler's Dwarf'	Mock Orange				Good foundation shrubs; common
<i>Plumbago auriculata</i>	Cape Plumbago				Good for spilling over a high wall; not good for containers; needs room and good drainage. Nice color.
<i>Prunus caroliniana</i>	Carolina Laurel Cherry				Great. Shiny, attractive leaves, low maintenance
<i>Prunus ilicifolia</i>	Hollyleaf Cherry				Similar to Laurel Cherry
<i>Punica granatum</i>	Pomegranate				Fruit hangs on into winter; good color
<i>Pyracantha species</i>	Firethorn				Subject to fire blight
<i>Raphiolepis indica</i> 'Springtime'	Pink Indian Hawthorn				Takes light shade/full sun. 'Clara' has white flowers. Nice low vars.
<i>Rhamnus californica</i>	Coffeeberry				Full sun/part shade. Great indigeneous shrub
<i>Rhus ovata</i>	Sugar Bush				Good for outlying areas, low water requirements
<i>Ribes sanguineum</i>	Pink Winter Currant				Native; good with oaks; many varieties; Golden currant local, nice
<i>Ribes speciosum</i>	Fuschia Flowering Currant				Good barrier plant; part shade in hot climates. Temperamental
<i>Romneya coulteri</i>	Matilija Poppy				Do not use in natural areas. Extremely invasive. Great flowers
<i>Rosmarinus officinalis</i> 'spp.'	Rosemary				Needs full sun, good drainage. Short-lived; attracts bees
<i>Tecomaria capensis</i>	Cape Honeysuckle				Tall hedge: good bank, fence cover; red-orange flowers.
<i>Ternstroemia gymnanthera</i>	Ternstroemia Mock Orange				Takes part to full shade; needs acid, well-drained soil
<i>Trachelospermum jasminoides</i>	Star Jasmine				Great fragrance; good but common; good fence cover. Invasive
<i>Xylosma congestum</i> 'Compacta'	Xylosma				Foundation good but requires trimming
<b>Vines</b>					
<i>Cissus antarctica</i>	Kangaroo Tree Vine				Sun or shade; large-scale bank cover, wall cover, trellis. Maintenance issues on walls
<i>Cissus hypoglauca</i>	No common name				Sun or light shade; large-scale bank cover, wall cover, trellis
<i>Clytostoma callistegioides</i>	Violet Trumpet Vine				Sun or part shade; needs support on walls, climbs by tendrils
<i>Distictis buccinatoria</i>	Blood-red Trumpet Vine				Rampant grower; needs protection from frost. Great color
<i>Ficus pumila</i>	Creeping Fig				Rampant grower; do not plant on walls that need regular painting; "feet" stick to wall surface like Boston Ivy. Good for block walls
<i>Gelsemium sempervirens</i>	Carolina Jessamine				Good bank cover. Colorful, fast grower
<i>Jasminum mesnyi</i>	Primrose Jasmine				Good bank cover; let spill over large wall

		Drought Tolerant	Heat Tolerant	CA Native	Comments
<i>Jasminum polyanthum</i>	No common name				Great flower and fragrance. Unattractive as it matures
<i>Lonicera japonica</i>	Japanese Honeysuckle				Good fence/bank cover. Invasive
<i>Parthenocissus tricuspidata</i>	Boston Ivy				Good; fall color; self-adheres to walls, maintenance problem on walls
<i>Pyrostegia venusta</i>	Flame Vine				Great orange color. Frost sensitive
<i>Trachelospermum jasminoides</i>	Star Jasmine				Good evergreen vine; need attachment. Keep confined
<i>Wisteria sinensis</i>	Chinese Wisteria				Rampant; needs support; purple flowers hang in large clusters. Good over patios
<b>GroundCovers</b>					
<i>Aptenia cordifolia</i>	Red Apple				Small-scale groundcover. Invasive with shrubs. Attracts bees.
<i>Arcostaphylos edmundsii</i>	Little Sir Manzanita				Good. Slow-growing, needs drainage
<i>Baccharis pilularis 'Twin Peaks'</i>	Coyote Brush				Grows large; do not use in ornamental gardens; good for slope stabilization, but fire hazard
<i>Campanula poscharskyana</i>	Serbian Bellflower				Shade; small-scale groundcover
<i>Duchesnea indica</i>	Indian Mock Strawberry				Good bank cover; attracts bees
<i>Festuca species</i>	Fescue				Good bank cover
<i>Hedera helix</i>	English Ivy				Only in pots. Very invasive species
<i>Lantana montevidensis</i>	Trailing Lantana				Many varieties, frost sensitive. Good colors
<i>Lonicera japonica</i>	Honeysuckle				Good bank/fence cover, but invasive
<i>Myoporum parvifolium 'Putah Creek'</i>	No common name				Good bank cover. Does not take well near traffic
<i>Potentilla verna</i>	Spring Cinquefoil				Good summer bloom; small-scale. Easily invaded by grasses
<i>Rosmarinus officinalis 'Prostratus'</i>	Prostrate Rosemary				Good, needs full sun- short-lived; attracts bees
<i>Verbena peruviana</i>	No common name				Not used often; small-scale ground cover. Good color, needs sun
<i>Vinca minor 'Bowles'</i>	Dwarf Periwinkle				Do not use in areas where it can become invasive; good for shade
<i>Zoysia tenuifolia</i>	Korean Grass				Small-scale groundcover. Velvety look.
<b>Turf Grasses</b>					
<i>Cynodon dactylon 'Santa Ana'</i>	Santa Ana Dwarf Bermuda				Actually <i>Cynodon transvaalensis</i>
<i>Festuca elatior 'Marathon II'</i>	Marathon II Dwarf Tall Fescue				Also known as <i>Festuca arundinaceae</i> ; also use Marathon III
<i>Festuca elatior 'Bonsai'</i>	Bonsai Dwarf Tall Fescue				Same plant as Marathon, just different brand

## Appendix B: Street Tree Plan

This plan and the lists that follow provide the palette of trees available and recommended for streets on and around the UCR campus. Street tree plantings should be consistent for the length of any given street segment according to the plan below.



# MASTER STREET TREE LIST

## EAST CAMPUS LOOP ROAD AND ENTRIES

<b>1 UNIVERSITY AVENUE</b>			
D/M	Main Structure Tree	Washingtonia robusta 'Hybrid' Washingtonia filifera	Hybrid Mexican Fan Palm California Fan Palm
D/I	Flowering Accent Between Palms	Koelreuteria bipinnata	Chinese Flame Tree
A	Small Accent Tree	Lagerstroemia indica 'Hybrids'	Crape Myrtle
<b>2 CANYON CREST DRIVE</b>			
EX/D/M	Large Semi-evergreen Tree	Fraxinus velutina 'Modesto'	Modesto Ash
M		Fraxinus uhdei 'Majestic Beauty'	Evergreen Ash
M		Fraxinus velutina	Arizona Ash
M		Fraxinus angustifolia 'Raywood'	Raywood Ash
<b>3 LINDEN STREET</b>			
EX/D/M	Tall Accent Palm	Washingtonia robusta 'Hybrid'	Hybrid Mexican Fan Palm
D/I	Large Evergreen Tree	Schinus molle	California Pepper Tree
I	Semi-evergreen Flowering	Jacaranda mimosifolia	Jacaranda
I	Between Palms	Tipuana tipu	Tipu Tree
<b>4 ABERDEEN DRIVE</b>			
EX/D/M	Large Evergreen Tree	Cinnamomum camphora	Camphor Tree
M		Brachychiton populneus	Bottle Tree
M	Deciduous Canopy Tree	Brachychiton acerifolius	Flame Tree
M		Sapium sebiferum	Chinese Tallow Tree
<b>5 BIG SPRINGS ROAD</b>			
D/M		Fraxinus velutina 'Modesto'	Modesto Ash
D/M		Pinus canariensis	Canary Island Pine
<b>6 ARROYO @ BIG SPRINGS ROAD</b>			
EX/G	WRT Planting Plan	Fraxinus velutina 'Modesto'	Modesto Ash
G		Juglans californica	California Black Walnut
EX/G		Platanus racemosa	California Sycamore
EX/G		Quercus agrifolia	Coast Live Oak
EX/G		Heteromeles arbutifolia	Toyon
<b>7 EAST CAMPUS DRIVE</b>			
M	Main Structure Tree	Platanus acerifolia 'Columbia'	London Plane Tree
M		Fraxinus spp.	Ash
EX/D/I	In-fill Tree	Schinus molle	California Pepper Tree
EX/D/I	In-fill Tree	Acer saccharum	Sugar Maple
<b>8 SOUTH CAMPUS DRIVE</b>			
M	Main Structure Tree	Pinus pinea	Italian Stone Pine
M		Podocarpus gracilior	Fern Pine
M		Zelkova serrata 'Green Vase'	Sawleaf Zelkova
I	In-fill Tree	Platanus acerifolia 'Columbia'	London Plane Tree
A	Small Accent Tree	Lagerstroemia indica 'Hybrids'	Crape Myrtle
<b>9 WEST CAMPUS DRIVE</b>			
<i>Naturalistic Landscape</i>			
EX/D/M	Main Structure Tree	Fraxinus velutina 'Modesto'	Modesto Ash
M		Pinus halepensis	Aleppo Pine
EX/I		Platanus acerifolia 'Columbia'	London Plane Tree
EX/A	Small Accent Tree	Prunus cerasifera spp.	Purple-leaf Plum

EX = Existing Street Tree

D = Designated Campus Street Tree

M = Main Structure Tree (Single tree species to be used as the dominant street tree.)

I = In-fill Tree (Tree species to be used as a back-drop tree to the main structure tree.)

G = Group Planting (Trees to be mixed in group planting with other species on list.)

A = Small accent tree



Modesto Ash along Canyon Crest Drive



Mexican Fan Palm on Linden Avenue



Canary Date Palm

<b>10</b>	<b>ENTRY</b>		
M	<i>Monumental Palms</i>	Phoenix canariensis	Canary Island Date Palm
M		Phoenix dactylifera	Date Palm
M		Washingtonia felifera	California Fan Palm
<b>11</b>	<b>SERVICE WALK</b>		
M		Koelreuteria bipinnata	Chinese Flame Tree
M		Tipuana tipu	Tipu Tree
M		Cinnamomum camphora	Camphor Tree
M		Platanus acerifolia 'Columbia'	London Plane Tree
M		Quercus suber	Cork Oak
M		Quercus agrifolia	Coast Live Oak
M		Quercus virginiana	Southern Live Oak
M		Ginkgo biloba 'Fastigata'	Maidenhair Tree
M		Pistache chinensis	Chinese Pistache
M		Jacaranda mimosifolia	Jacaranda
M		Magnolia grandiflora	Southern Magnolia
M		Pinus pinea	Italian Stone Pine
M		Podocarpus gracilior	Fern Pine
		Citrus oroblanco	Oroblanco Grapefruit
		Citrus washington	Washington Navel Orange
		Citrus 'Improved Meyer'	Meyer Lemon

EX = Existing Street Tree  
D = Designated Campus Street Tree  
M = Main Structure Tree (Single tree species to be used as the dominant street tree.)  
I = In-fill Tree (Tree species to be used as a back-drop tree to the main structure tree.)  
G = Group Planting (Trees to be mixed in group planting with other species on list.)  
A = Small accent tree

## WEST CAMPUS

<b>W1</b>	<b>WEST CAMPUS DROP-OFF</b>		
M	<i>California Signature Tree Circle</i>	Quercus lobata	White Oak
M		Quercus agrifolia	Coast Live Oak
M	<i>Grove Tree</i>	Platanus racemosa	California Sycamore
		Phoenix dactylifera	Date Palm
		Washingtonia felifera	California Fan Palm
<b>W2</b>	<b>NW MALL / SW MALL</b>		
G	<i>Ornamental Arroyo Swale</i>	Platanus racemosa	California Sycamore
G		Quercus agrifolia	Coast Live Oak
G		Alnus rhombifolia	White Alder
G		Juglans californica	California Black Walnut
G		Acer macrophyllum	Big-leaf Maple
G		Heteromeles arbutifolia	Toyon
G		Myrica californica	Pacific Wax Myrtle
M	<i>Large Scale Street Trees</i>	Fraxinus velutina 'Modesto'	Modesto Ash
M		Washingtonia robusta 'Hybrid'	Hybrid Mexican Fan Palm
M		Chorisia speciosa 'Majestic Beauty'	Floss Silk Tree
M		Pinus canariensis	Canary Island Pine
M		Pinus pinea	Italian Stone Pine
		Quercus kelloggii	California Black Oak
I	<i>Medium Scale Back-drop Tree</i>	Jacaranda mimosifolia	Jacaranda
I		Agonis flexuosa	Peppermint Tree
I		Magnolia grandiflora	Southern Magnolia
	<i>Grove Tree</i>	Washingtonia felifera	California Fan Palm
		Citrus oroblanco	Oroblanco Grapefruit
		Citrus washington	Washington Navel Orange
		Citrus 'Improved Meyer'	Meyer Lemon



Oroblanco Grapefruit Street Trees



Toyon

## WEST CAMPUS

<b>W3 TYPICAL VEHICULAR STREET</b>			
M	<i>Med/Lg Scale Street Tree</i>	Koelreuteria bipinnata	Chinese Flame Tree
M		Tipuana tipu	Tipu Tree
M		Cinnamomum camphora	Camphor Tree
M		Platanus acerifolia 'Columbia'	London Plane Tree
M		Quercus suber	Cork Oak
M		Quercus agrifolia	Coast Live Oak
M		Quercus virginiana	Southern Live Oak
M		Ginkgo biloba 'Fastigata'	Maidenhair Tree
M		Pistache chinensis	Chinese Pistache
M		Jacaranda mimosifolia	Jacaranda
M		Magnolia grandiflora	Southern Magnolia
M		Pinus pinea	Italian Stone Pine
M		Podocarpus gracilior	Fern Pine
<b>W4 LIMITED ACCESS STREET</b>			
M	<i>Medium Scale Street Tree</i>	Quercus virginiana	Southern Live Oak
M		Ulmus parvifolia 'Drake'	Chinese Evergreen Elm
M		Koelreuteria bipinnata	Chinese Flame Tree
M		Koelreuteria paniculata	Golden Rain Tree
M		Tipuana tipu	Tipu Tree
M		Cinnamomum camphora	Camphor Tree
M		Jacaranda mimosifolia	Jacaranda
M		Magnolia grandiflora	Southern Magnolia
M		Pistache chinensis	Chinese Pistache
<b>W5 PRIMARY PEDESTRIAN/BICYCLE</b>			
M	<i>Large scale street tree</i>	Fraxinus velutina 'Modesto'	Modesto Ash
M		Washingtonia robusta 'Hybrid'	Hybrid Mexican Fan Palm
M		Chorisia speciosa 'Majestic Beauty'	Floss Silk Tree
M		Pinus canariensis	Canary Island Pine
M		Pinus pinea	Italian Stone Pine
M		Quercus kelloggii	California Black Oak
I	<i>Medium scale back-drop tree</i>	Jacaranda mimosifolia	Jacaranda
I	<i>Grove tree</i>	Agonis flexuosa	Peppermint Tree
		Citrusus oroblanco	Oroblanco Grapefruit
		Citrusus washington	Washington Navel Orange
		Citrusus 'Improved Meyer'	Meyer Lemon
<b>W6 MLK BLVD. DRAINAGE SWALE</b>			
	<i>Grove tree</i>	Platanus acerifolia 'Columbia'	London Plane Tree
	<i>Grove tree</i>	Quercus ilex	Holly Oak
	<i>Grove tree</i>	Washingtonia robusta 'Hybrid'	Hybrid Mexican Fan Palm
	<i>Grove tree</i>	Washingtonia felifera	California Fan Palm
	<i>Grove tree</i>	Phoenix dactylifera	Date Palm
	<i>Grove tree</i>	Citrusus spp.	Citrus
	<i>Grove tree</i>	Olea europea 'Swan Hill'	Fruitless Olive
	<i>Grove tree / wind break</i>	Eucalyptus spp.	Gum Tree
	<i>Grove tree / wind break</i>	Populus nigra 'Italica'	Lombardy Poplar
	<i>Grove tree / wind break</i>	Cupressus arizonica 'Pyramidalis'	Arizona Cypress
<b>W7 CHICAGO AVENUE</b>			
M		Washingtonia felifera	California Fan Palm
M		Washingtonia robusta 'Hybrid'	Hybrid Mexican Fan Palm
I	<i>Semi-evergreen flowering</i>	Jacaranda mimosifolia	Jacaranda
I	<i>Between palms</i>	Tipuana tipu	Tipu Tree
<b>W8 UNIVERSITY AVE. (WEST OF I-215)</b>			
M		Washingtonia felifera	California Fan Palm
M		Washingtonia robusta 'Hybrid'	Hybrid Mexican Fan Palm
I	<i>Semi-evergreen flowering</i>	Koelreuteria bipinnata	Chinese Flame Tree
A	<i>Small accent tree</i>	Lagerstroemia indica 'Hybrids'	Crape Myrtle

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Chinese Pistache



Aleppo Pines and California Fan Palms, MLK Jr. Blvd

## W9 WEST CAMPUS GAGE CANAL MALL

### *Mediterranean Trees*

Alnus cordata	Italian Alder
Pinus pinea	Italian Stone Pine
Pinus halepensis	Aleppo Pine
Pinus canariensis	Canary Island Pine
Cupressus sempervirens	Italian Cypress
Populus nigra italica	Lombardy Poplar
Chamaerops humilis	Mediterranean Fan Palm
Phoenix canariensis	Canary Island Date Palm
Phoenix dactylifera	Date Palm
Myrtus communis	Myrtle
Nerium oleander	Oleander
Olea europea 'swan hill'	Fruitless Olive
Citrus spp.	Citrus
Quercus suber	Cork Oak
Quercus ilex	Holly Oak
Arbutus unedo	Strawberry Guava
Cedrus atlantica glauca	Atlas Cedar
Cedrus atlantica glauca 'pendula'	Weeping Atlas Cedar
Cedrus libani	Cedar Of Lebanon
Punica granatum	Pomegranate
Ceratonia siliqua	Carob Tree

### *California / Mexican Desert Trees*

Olneya tesota	Desert Ironwood
Prosopis glandulosa	Honey Mesquite
Parkinsonia aculeata	Mexican Palo Verde
Washingtonia felifera	California Fan Palm
Washingtonia robusta 'hybrid'	Hybrid Mexican Fan Palm
Caesalpinia mexicana	Mexican Bird-of-paradise
Dalea spinosa	Smoke Tree
Cercidium 'desert museum'	Hybrid Palo Verde
Cercidium floridum	Blue Palo Verde
Cercidium microphyllum	Little Leaf Palo Verde
Eriobotrya deflexa	Bronze Loquat
Chilopsis linearis	Desert Willow

### *Australian Trees*

Eucalyptus spp.	Gum Tree
Melaleuca quinquenervia	Cajeput Tree
Melaleuca linariifolia	Flaxleaf Paperbark
Melaleuca styphelioides	Black Tea Tree
Geijera parvifolia	Australian Willow
Acacia spp.	Acacia
Agonis flexuosa	Australian Peppermint
Callistemon viminalis	Weeping Bottlebrush
Callistemon citrinus	Lemon-scented Bottlebrush
Leptospermum laevigatum	Australian Tea Tree
Pittosporum spp.	Pittosporum
Cupaniopsis anacardioides	Carrot Wood
Casuarina equisetifolia	Horsetail Tree

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*Crape Myrtle and Fan Palms on University Avenue*



*Italian Stone Pine*

**W9 WEST CAMPUS GAGE CANAL MALL**

*Asian Trees*

- |                                |                              |
|--------------------------------|------------------------------|
| Zelkova serrata                | Sawleaf Zelkova              |
| Koelreuteria bipinnata         | Chinese Flame Tree           |
| Pistache chinensis             | Chinese Pistache             |
| Magnolia kobus stellata        | Star Magnolia                |
| Magnolia soulangiana           | Saucer Magnolia              |
| Melia azedarach                | Chinaberry                   |
| Ficus microcarpa               | Indian Laurel Fig            |
| Gingko biloba                  | Maidenhair Tree              |
| Cedrus deodara                 | Deodar Cedar                 |
| Paulownia tomentosa            | Empress Tree                 |
| Pyrus calleryana 'chanticleer' | Chanticleer Pear             |
| Eriobotrya japonica            | Japanese Loquat              |
| Chionanthus retusus            | Chinese Fringe Tree          |
| Tracycarpus fortunei           | Windmill Palm                |
| Luma apiculata                 | Chilean Myrtle               |
| Maytenus boaria                | Mayten Tree                  |
| Feijoa sellowiana              | Pineapple Guava              |
| Prosopis chilensis             | Chilean Mesquite             |
| Cedrela fissilis               | Brazilian Cedar Wood         |
| Schinus terebinthifolius       | Brazilian Pepper Tree        |
| Schinus molle                  | California (Peruvian) Pepper |
| Brahea edulis                  | Guadalupe Palm               |

*Central/South American Trees*

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**A** = Small accent tree



*Coast Live Oak*



*Chinese Fringe Tree*



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**Appendix C:  
Documents Referenced**

1990 Long Range Development Plan (LRDP)

1996 Campus Design Guidelines

1996 Campus Landscape Master Plan

2003 West Campus Area Plan (WCAP)

2003 Strategic Plan for Housing (SPH) and 2007 Update

2004 East Campus Entrance Area Study (ECEAS)

2004 Multi-Modal Transportation Management Strategy (MMTMS)

2005 Long Range Development Plan (LRDP) and LRDP Environmental Impact Report (EIR)

2006 East-Southeast Campus Area Study (ESCAS)

2006 UCR Medical School Capacity Study

2007 Campus Aggregate Master Planning Study (CAMPS)

2007 Campus Sign Program

## Appendix D: Circulation Standards

*Please see the 2007 CAMPS for more details.*

### Major Pedestrian Walks

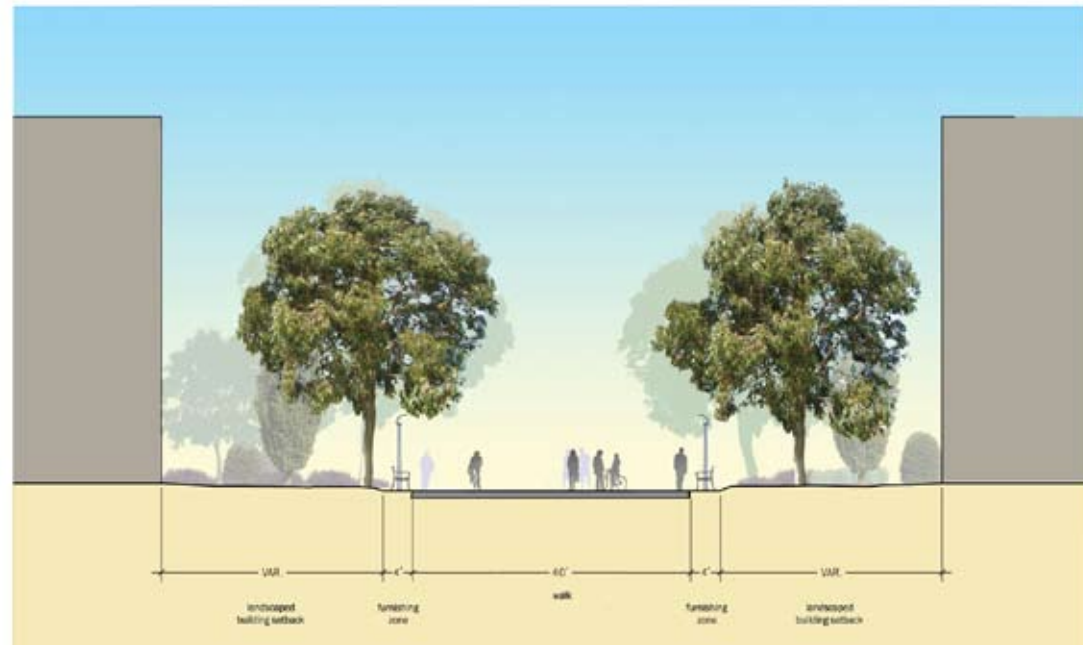
- Minimum width 10'-0", vertical clearance 8'-0"
- NW and SW Walks on West Campus to be 30-40' wide with special paving
- Preferred longitudinal slope up to 3%, maximum slope 5%, preferred cross slope 2%

### Major Walks/Fire Lane Combination

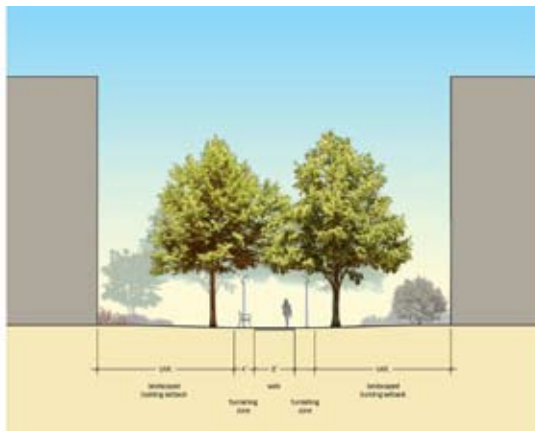
- Minimum width 20'-0", vertical clearance 13'-6"
- Engineered surface to support maintenance and emergency service vehicles

### Minor Walkways and Sidewalks

- Minimum width 6'-0"; 8'-0" minimum sidewalk recommended along major streets. 4' furnishing zone adjacent.



**NW and SW Walks on West Campus**



**Typical Minor Walkway**



**Limited Access/Residential Street (may include 8' on-street parking bays on one or both sides)**

### Arterial Street--Iowa Avenue

- City-owned street
- Minimize lane widths to slow traffic; 11' recommended
- On-street bike lanes, minimum 5'
- Sidewalks separated from roadway by planting strip (parkway)
- Central median serves as pedestrian refuge and can be replaced with left-turn lane where necessary

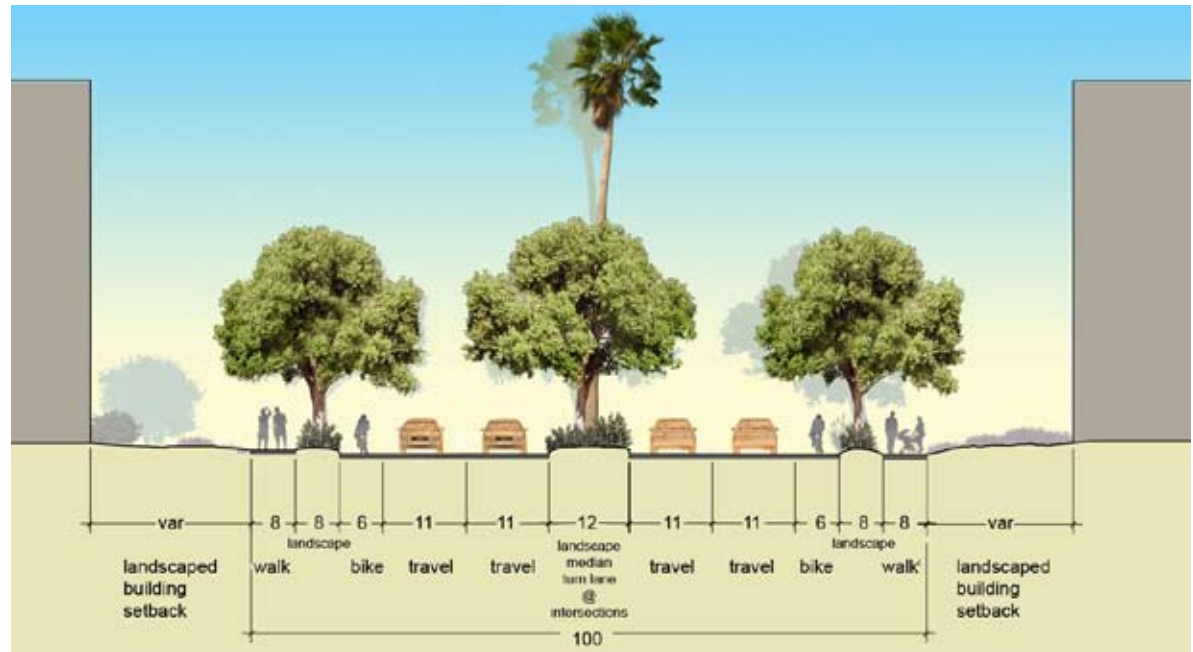
### West Campus Vehicular & Academic Streets

- Includes Limited Access streets on School of Medicine campus
- Minimize lane widths, 20' minimum for two-way acceptable
- Bicycles in 6' bike lanes or sharing roadway
- Sidewalks separated from driving lanes by street tree planting strips.

### Residential Streets (West Campus Family Housing)

This cross-section is similar to other West Campus streets, except:

- Limited access; bicycles share low-speed roadway
- On-street parking adds to capacity and reduces the need for surface parking; consider wider sidewalks in places for ease of entering and exiting autos
- Minimize driving travel lane widths; 20' is sufficient for two-way traffic to promote slow speeds
- Narrower travel lane widths are possible if the fire department is amenable. Two-way streets with on-street parking on both sides, are possible, with widths of 24', in a queuing street configuration. (When two vehicles meet on a queuing street, one of the vehicles must yield by pulling over into a vacant segment of the adjacent parking lane.)



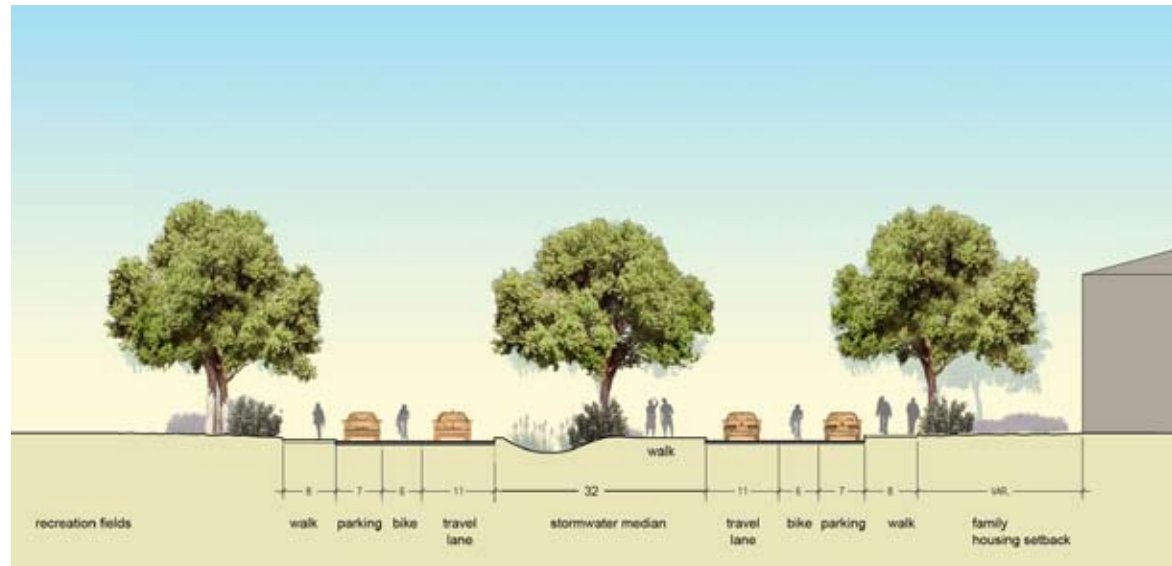
Recommended Iowa Avenue Arterial



Recommended Campus Vehicular Street (incl. Academic Streets)

## NW and SW Malls

- The NW and SW Malls will also become part of the West Campus open space network thanks to their generous central median space linking academic, residential and recreational land uses. The medians will separate a single traffic lane in each direction. Turn pockets at intersections should be designed to maintain the integrity of the central median, which will also be a critical component of the West Campus' stormwater treatment system. Both Malls will include street trees on each side, in parkways or planting strips. The central median may also include trees, with species more suited to the median's ecological functions. On-street parking is recommended on both sides of the Mall, but not adjacent to the median. Wide sidewalks will serve large numbers of students traversing campus from east to west, continuing from the wide pedestrian walks within the West Campus academic core. A path system may also be possible within the median, to allow a more informal route across campus. The Malls will terminate at the West Campus academic core in dramatic new turnaround/dropoffs that also serve as gateways to UC Riverside.



NW and SW Malls

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