

6 | Open Space and Landscape Framework

As the Hayward campus develops toward its target enrollment of 18,000 FTES, a number of new buildings will be added and the density or intensity of development throughout the campus will increase. This will have many positive benefits, including creating a higher overall level of activity throughout the campus, supporting additional amenities and services.

However, coupled with the increase in occupied facilities, it will be very important to improve and add open spaces of all sizes and roles. These open spaces will serve to provide relief from the developed parts of campus and will host various activities ranging from studying, classes, casual sports activities, resting and just “hanging out,” to organized events such as concerts and job fairs.

This Open Space and Landscape Framework articulates the concepts associated with long term improvements to the site and grounds of the Hayward campus.

Included is a discussion of:

- Open Space Plan and the types of open space envisioned for Cal State East Bay, and
- Landscape Approach, describing the concepts for new and revitalized landscape plantings throughout campus.

Open Space Plan

The goal for the campus open space is to create a rich, supportive environment of open spaces and amenities that will support the academic and resident life components of the campus.

Existing open spaces will be improved and new spaces added over time to improve the image of the campus, provide programmable and informal usable space, and contribute to a sustainable campus by conserving water and reintroducing native and other sustainable vegetation.

The campus already has a clear pattern of open space that was based on the original master plan concepts. The strategies in this master plan build on those existing patterns and supplement them with spaces of all scales and purposes. Careful implementation of these open, outdoor spaces will have an important impact on the character of the campus for years to come.

Six types of open spaces are found on campus:

- Primary Campus Quads
- Secondary Campus Quads
- Courtyards
- Entry Plazas
- Residential Greens
- Pedestrian Promenades.

The following section describes the desired characteristics of each of these types.

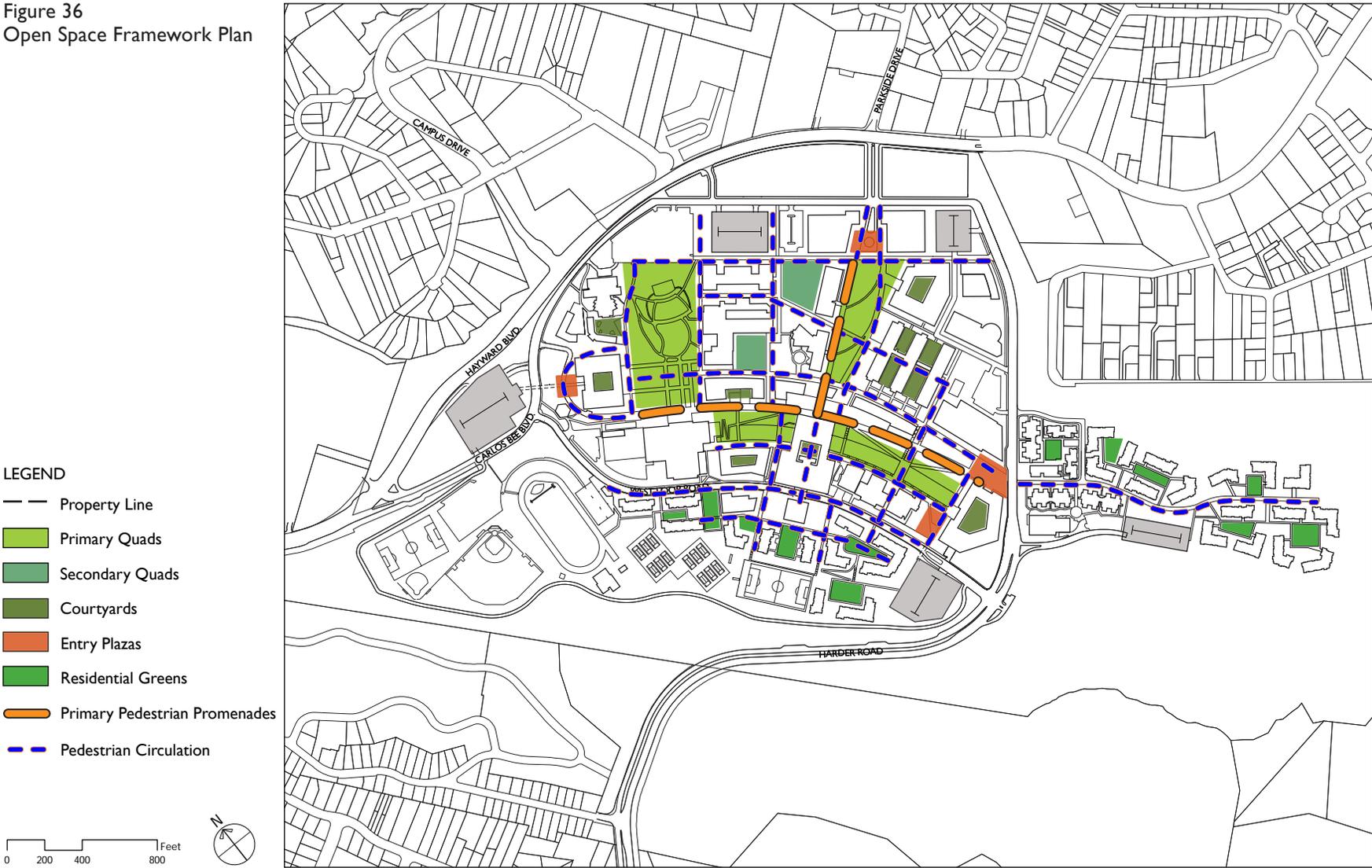


(upper)
Important campus open spaces such as this area adjoining the amphitheater will be maintained and improved as plant materials need replacing and other improvements are warranted.



(lower)
The area fronting the University Union and Bookstore functions as the Student Commons. This area needs improvement to allow it to support the many activities that occur here as well as to improve its appearance and "curb appeal."

Figure 36
Open Space Framework Plan



Primary Campus Quads

These are the largest open spaces on campus. Currently the most fully realized of these is the large space that includes two programmatically different but linked spaces: the campus amphitheatre and the adjoining landscaped areas extending west to the Music Building. This area is the most highly landscaped, mature and complete of the campuses open areas. This area will be retained and managed to preserve its “glade-like” character.

A second major quad is in the early stages of implementation and lies in front of the Valley Business Center and the soon to be completed Student Services and Administration Replacement Building. With the redesign of the entry sequence at CSU East Bay, this space will take on much more importance as the quad through which most visitors and many of the campus community will enter campus. Because of this role it should have a dramatic design and links it to the entry road and to points to the west.

The third major campus quad area is associated with student activities and adjoins the University Union, Bookstore, and Meiklejohn Hall. This space is intensively used, particularly at mid-day, but has had little attention for many years. Significant landscape improvements are needed which would greatly improve its appearance and flexibility.

A fourth quad is framed by the north side of the library, the Student Health Center, and the Gymnasium. This quad is the least compelling of all and needs a renewed landscape treatment to make it more attractive. More active uses facing it would also be beneficial.



(left)
Primary campus open spaces are often among the most memorable elements of a campus and have been found to be an important factor in the evaluation of a campus by parents and prospective students. (Stanford University)



(below)
A dramatic element such as seasonally flowering trees can make a campus quad particularly memorable. (University of Washington)

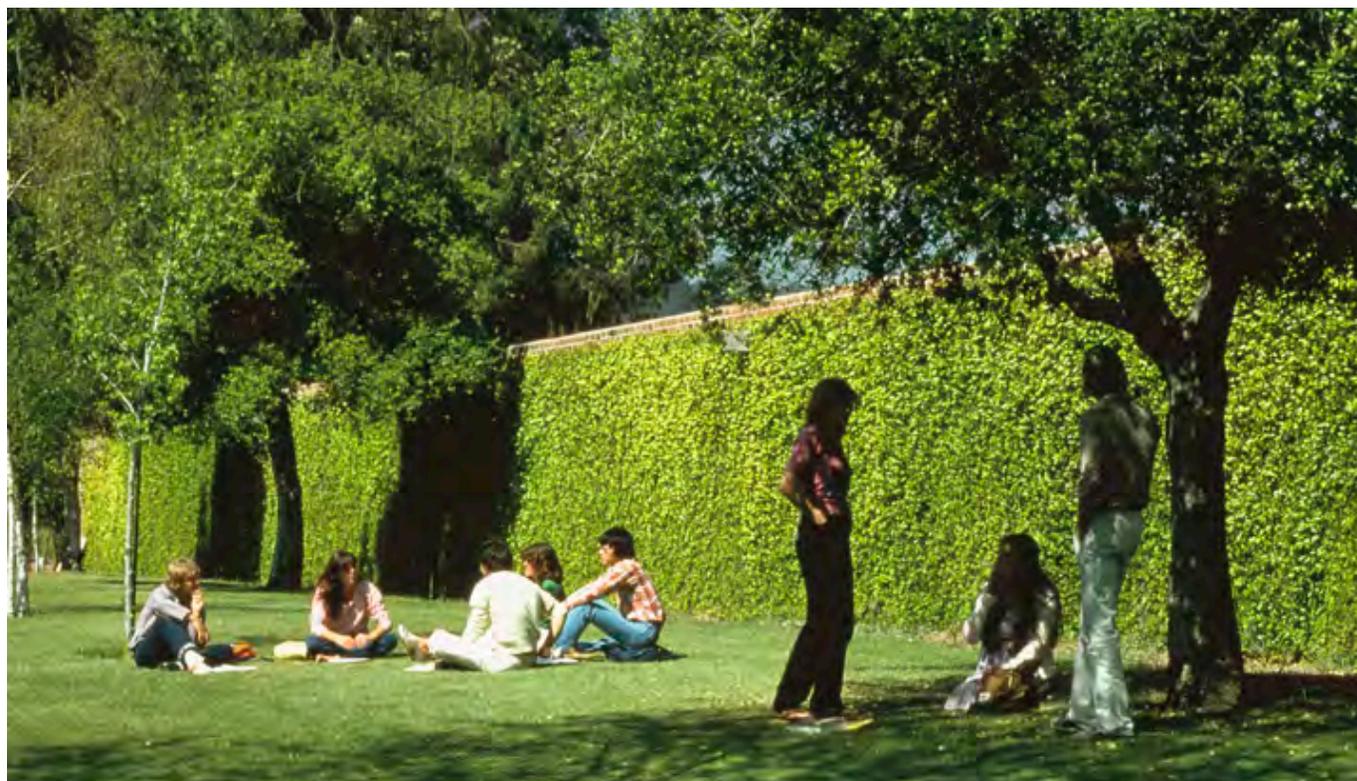
Secondary Campus Quads

Secondary campus quads are a highly important component of the campus open space system. Although they are not of the scale of the primary quads, they provide important landscaped outdoor spaces in developed areas of the campus..

Two secondary campus quads are proposed in areas of the campus where long term development of academic facilities will likely focus and where, therefore, it will

be important to have adequate open space to balance the intensive building program.

Located to the north and south of the primary entry quad, these quads provide spaces that can serve as the building entry quads for their respective districts. In addition, they will anchor an important pedestrian walkway that will link academic areas.



(right)

Secondary quads can fill a variety of roles, but are generally smaller than major quads. They can be formal or informal in design, but providing a variety of usable space, seating and other furnishings will make it suitable for studying and socialization. (Foothill College)

Courtyards

The climate at the Hayward campus lends itself to a pattern of small courtyards incorporated into or adjoining buildings. The mild spring, summer and fall temperatures encourage outdoor activities, and these spaces can accommodate seating suitable for casual conversation, informal classes, or solitary reading. During colder periods, these courtyards provide important protection from the sometime brisk cold winds that can affect parts of campus.



(left)
Courtyards should be designed to allow outdoor classes, informal discussion, and quiet study, while providing access to adjoining buildings and a restful view out from the adjoining classrooms and offices. (UC Davis)



(below left)
Design of courtyards should focus on providing a comfortable environment in virtually all seasons, with plenty of seating and a variety of opportunities for sun and shade. (UC Davis)

(right)
Important campus entries can be marked with design elements such as plazas, special landscaping, or gateway pillars. (San Jose State University)



(right)
Entry plazas can be simple in design and need not be monumental or complex. (Stanford University)



Entry Plazas

As the University grows, the on-campus resident community will grow significantly, as will the numbers of faculty, staff and visitors. Attractive entry points from parking structures and lots, transit facilities, and residential neighborhoods will make the first introduction to the campus a pleasant experience.

The single most important entry will be from the new entry road, Pioneer Way, which will enter on the east from Hayward Boulevard. The entry sequence, including vehicle turn-around and drop-off, and pedestrian spaces leading to the Entry Quad will be the first impression visitors will have of the campus. Care must be taken to ensure that entry spaces are designed to promote easy wayfinding and be of appropriate quality.

Entry from the parking structure at Carlos Bee Boulevard and Harder Drive will occur via elevated pedestrian bridges leading to the edge of campus near the Music Building and Meiklejohn Hall respectively. While not needing to be grand, these spaces should include signage and campus information.

The entries from Pioneer Heights and from the new student housing area to the academic core area will see large volumes of pedestrians every day and will serve as places to meet, see and be seen. As a consequence, these spaces should be designed with places to sit such as seat walls, and generous walkways and paved areas.

Residential Greens

As the student resident population grows from 1,292 (Fall 2008) to 5,000, providing appropriately-scaled open space in the housing areas will become more important.

The open spaces in residential areas play an important role in support student success by facilitating socialization and the informal interactions that are complimentary to academic pursuits. To accomplish this, it is important to consider the variety of activities that can occur in these spaces and the differences individual students may have in their comfort with highly exposed spaces versus more protected and private spaces.

Several types of space are desirable. First, residential buildings and dining halls should be sited to provide a variety of spaces ranging from large spaces for gathering to small spaces for quiet studying. Space for informal recreation is important; this can be provided in quad areas or within the larger residential neighborhoods and should include lawn and informal field areas as well as basketball and volleyball courts, and the like. Other outdoor spaces can be paved, but should be provided with ample seating and a variety of conditions for shade, sun and wind protection. Informal recreation space will be increasingly important. While flat, usable areas are important for active recreation, equally important are smaller gathering spots or seating associated with building entries and grade transitions, which can form “porches” from which to see the campus community pass by.



(left)
The open space framed by the buildings of Pioneer Heights II provides space for recreation, although additional seating and more variety in the space would be an improvement.



(left)
Residential greens serve a variety of functions, ranging from studying meeting friends, dining, and informal recreation. A variety of spaces should be provided that allow a student to be as secluded or engaged as desired. (UC Riverside)

(upper)
Linear plantings of trees with seasonal color can help identify important pedestrian walkways.
(CSU Northridge)



(middle)
Various design elements such as a simple, strong paving pattern can be used to clearly define a major campus walkway.
(UC San Diego)



(lower)
Adequate bicycle parking will be provided at building entries and in high activity areas.
(UC Riverside)



Pedestrian Promenades

The corridors along which students, faculty and staff walk to destinations throughout campus are enormously important. Three primary north / south routes currently exist, and these will be improved with new paving, lighting and furnishings. The most important of the three is the route that traverses the middle of the site from the Pioneer Heights entry point to the north near the Music Building. This route touches the most destinations and is flat, allowing universal access for many campus buildings.

Of equal importance is a east-west route that extends from the new campus entry, Pioneer Way, into the campus through the Entry Quad, leading to the Library and on axis with Warren Hall. This will be the route most first-time visitors use and will be their first introduction to the campus.

Additional east-west routes will be needed as campus destinations are added, particularly on the east side of the academic core. Linkages to the future student residential area flanking Warren Hall will be important as well. In some places, pedestrian bridges will be needed to allow accessible transitions between different elevations on campus.

Due to the high volumes of pedestrian movement, the academic core of the campus will be largely free of vehicle traffic, except for limited service access. Where needed, bollards and signage will limit access to approved vehicles. Similarly, in residential areas, vehicles will be limited so as to avoid conflicts with pedestrians and bicyclists.

Landscape Approach

The vision for the Hayward campus landscape is to create a beautiful and sustainable setting to enhance the life of the university and establish a strong identity as the “campus in the oaks.”

This landscape will reflect the plant communities, drainage patterns, and other ecological attributes that distinguish the historic natural setting of the campus. Such an approach offers a sustainable, longer “life cycle” landscape in terms of the longevity of site improvements and planting, with a variety of self-generating vegetative communities that are adapted to specific site conditions. With careful design, this landscape can be adapted into outdoor spaces that serve the evolving needs of the University, and it can be implemented to grow in efficiency and become less demanding of maintenance and water resources over time.

Achieving this vision requires:

- Maximizing existing plantings and create opportunities for future landscapes that will utilize both California native plantings and other appropriate plant materials to create the overall theme of the “campus in the oaks”
- Understanding existing soil and plant conditions, landscape zones and establishing related plant communities suited to site topography and use.
- Creating a plant palette suited to each landscape zone, with emphasis on water-conserving species and plant communities that will sustain a healthy ecological balance and create aesthetically pleasing grounds appropriate to a university campus, with use of native species whenever appropriate

- Understanding landscape conditions specific to the Hayward campus, such as slope transitions and the quality of existing vegetation.
- Creating a sustainable, longer life cycle landscape; this may require more initial investment but will recapture this investment over time.
- Implementating sustainable stormwater management strategies, such as green roofs, vegetated swales, and permeable paving, that can remove pollutants, recharge groundwater and minimize impact on the municipal storm drain system.



(left)
The historic oak and grassland vegetation of the Hayward area provides the inspiration for a renewed landscape at the Hayward campus.



(above)
The rolling hillsides of the southern part of the Hayward campus (seen looking west from south of the Pioneer Heights residential neighborhood) will be retained as an open space reserve.

(right)
Looking north from the hillside just west of Pioneer Heights, the spring landscape of green grasses and flowering native perennials provides a lush backdrop for the campus.



In addition, Cal State East Bay can develop programs to educate the University community about sustainable landscape practices, such as integrating concepts about ecological design into academic programs, and training and educating staff to understand sustainable landscape practices such as integrated pest management and proper mulching and mowing techniques. The final result should be a landscape that has year-round appeal, seasonal interest and color, and that is attractive to visitors and the public.

Landscape Context

The campus's physical and biological context provides clues to developing a set of sustainable and practical landscape proposals. These conditions include high summer temperatures and annual average precipitation of about 26 inches, with dry summers and wet winters. The local climate implies the need for landscape irrigation especially during establishment of new plantings and the hot, dry summer season.

In addition, conditions of site drainage, soils, and vegetation suggest other landscape challenges and opportunities.

Regional Landscape

Figure 37 illustrates the landscape context of the campus which reflects natural patterns of vegetation associated with the rolling coastal hills of Northern California. The area, which was in ranching uses when the campus was established, historically included several major drainageways, generally flowing northwest, and three primary plant communities: oak-grassland, riparian, and hard (Diablan) chaparral. Each of these is identified by its dominant plant species and

influenced by conditions of soils, slope, drainage, water availability and solar orientation.

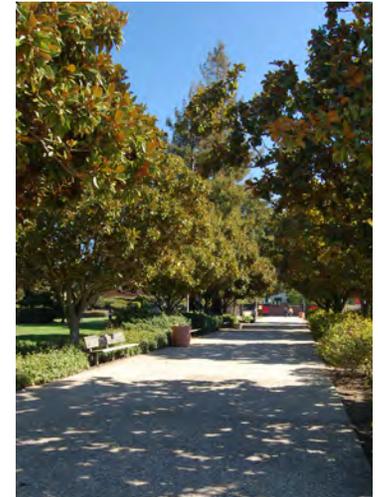
- Along the plains and rolling hills of Hayward are oak woodlands and grasslands with clustered trees, primarily oaks and bays. These areas support many plants and animals associated with California’s wild landscape
- Riparian areas are found along permanent and intermittent streams in the area and are dominated by willows, sycamores, and cottonwoods. This moist habitat is a rich source of food for many birds, herbivores, and amphibians.
- The chaparral plant community of California exists along the coast from about San Francisco down through about San Diego and inland as far as Riverside in southern California. In these areas, the climate is so mild that there is something flowering every month of the year. The dormant period for the plants is summer through fall when there is no rainfall and the temperatures are higher.

Existing Campus Vegetation

The Hayward campus has an aging landscape, characterized by mostly mature trees and some eroded slope banks and difficult grade transitions. Trees were planted in phases as new buildings and developments occurred, with a resulting wide range of plant species at various stages of maturity, a general lack of uniformity and a “hodge-podge” character. Trees are planted on grids, in rows, and informal grouping for screening, shade, and framing spaces. Species are characteristic of an era of landscaping that values green and colorful landscapes reflecting the success, comfort, amenity, and image of the place.



(above left)
To the left and right of the stair, eroded slopes have difficulty supporting attractive vegetation.



(above right)
The lush landscape near the Music Building, including mature Magnolias, is an appropriate treatment of this major campus open space.



(right)
The slope to the east of Meiklejohn Hall is successfully planted with attractive, sturdy shrubs; to the right of the stair, however, the eroded slope is not currently supporting vegetation.

Figure 37
Regional Landscape

-  Developed Campus
-  Riparian Corridors (Streams)
-  Annual Grasslands / Oak Woodland
-  Drainages



Some trees are thriving while others have reached the end of their life cycle. Redwoods, oaks, and Canary Island pine appear to be healthy, long-lived, and well-adapted to the site and soil conditions of the campus. Other trees, such as Monterey pine and Catalina Island ironwood, are noticeably in decline. In particular, dying Monterey pines are a hazard and should be removed.

**Table 15
Common Trees on Campus**

<i>Magnolia grandifolia</i>	Southern Magnolia
<i>Magnolia virginiana</i>	Magnolia
<i>Washingtonia filifera</i>	Washington Palm
<i>Tristania conferta</i>	Brisbane box
<i>Robinia pseudocacia</i>	Black locust
<i>Quercus suber</i>	Black oak
<i>Quercus ilex</i>	Holly oak
<i>Quercus agrifolia</i>	Live oak
<i>Pinus radiati</i>	Monterey pine
<i>Pinus canariensis</i>	Canary Island pine
<i>Lyonothamnus floribundus</i>	Catalina Island ironwood
<i>Juniperus chinensis</i>	Juniper tree
<i>Eucalyptus viminalis</i>	Coral gum
<i>Eucalyptus sideroxylon</i>	Red ironbark
<i>Eucalyptus leucoxyton</i>	White ironbark
<i>Cupressus glabra</i>	Cypress
<i>Rhaphiolepis indica</i>	India hawthorn
<i>Cedrus deodara</i>	Deodar cedar
<i>Calpcedrus decurrens</i>	Incense cedar
<i>Arbutus unedo</i>	Strawberry tree
<i>Aesculus californica</i>	California buckeye
<i>Acacia saligna</i>	Acacia
<i>Acacia baileyana</i>	Acacia
<i>Myoporum laetum</i>	Myoporum

Most trees on campus are suited to dry climate regions and many are suited to the soils of the site. Understory plantings consist primarily of small shrubs and lawn, but many locations lack a uniform and consistent understory. Compacted, rootbound soils make replacement of the understory more difficult.

In many locations, soils have eroded where groundcover and other plantings have died or become rootbound, or where irrigation systems have failed to provide consistent sources of water to the plant material.

Sustainable Landscape Approach

Landscape improvements generally will be made on an incremental basis in conjunction with major capital projects and as funds are available for significant maintenance or replanting. Whenever funds are available, however, more sizeable landscape projects such as the Main Promenade or Entry Quad should be undertaken in their entirety in order to achieve a dramatic functional and aesthetic upgrade for the entire campus.

In concert with the sustainable basis of this campus master plan, landscape elements are intended to lower consumption of resources and carbon output. This involves an approach that ties landscape proposals to site factors, especially drainage and water availability, and uses drought-tolerant and low water use plant communities to establish healthy, beautiful campus environments.

Some desirable characteristics of campus plants include:

- Long lived
- Slow growing
- Tolerant of summer droughts and cold periods during the winter months
- Tolerant of seasonal rainfall and inundation
- Tolerant of urban pollutants
- Tolerant of poor soils and modified soil conditions
- Provide seasonal flowers
- Provide food, shelter, and nectar sources for wildlife
- Attractive when dormant.

This approach will create landscapes that are particularly suited to the campus environment. Certain plantings in high visibility areas will require irrigation in order to sustain the required aesthetic appear necessary for a university campus.

The following strategies will be followed.

- The use of native species is encouraged, but other non-invasive species well-suited to existing conditions are also acceptable. Ease of maintenance and environmental sustainability will be carefully considered, and water-conserving native plants and other low water-use plant materials (xeriscape) will be used as much as possible.
- Plant materials will be selected based on specific site conditions to maximize potential for healthy establishment and minimize the need for irrigation and fertilization. Vegetation with higher irrigation demands will be concentrated near buildings, in most visible areas, and where natural patterns of drainage and water collection will offset irrigation needs.
- Natural regeneration of oaks and other native plants will be encouraged, and healthy, non-invasive trees will be retained wherever possible.
- Monterey pines, Catalina Island ironwood, and other plants in decline will be removed to avoid safety problems, and replaced with appropriate species.
- Plants materials of the oak-grassland community will be emphasized at the campus periphery, north and east-facing slopes, and upper edges of pathways and promenades.
- Plants materials of the riparian plant community will be emphasized at vegetated swales and low areas located at base of slopes and pathways; areas where water may be captured from rooftops, parking lots, or other hard surfaces; and at stormwater retention areas.
- Plants materials of the hard chaparral community will be emphasized at west and south-facing slopes and embankments and in drier, hotter areas located in less visible portions of the campus.
- Plant combinations will provide year-round interest and beauty. Native perennials may be utilized for seasonal color. While redwoods are not native to the immediate area, they appear to thrive on the campus and may be included as a major background “structure” species.
- Native trees, shrubs and groundcovers as well as nonnative species well-suited to the climate should be irrigated when planted, but adapted to the natural rainwater cycles and available grey system over time. Irrigation techniques will be selected to allocate efficient delivery of water.
- In general, planting areas will be lowered to retain and better utilize rainfall; subdrains will be used where needed. Where existing planting beds are compacted

and raised, retaining walls and subdrains may be installed to promote healthy growth and develop a healthy soil layer.

- Landscapes around buildings will be designed to capture water from roofs and direct it to swales and riparian areas. Where possible, stormwater will be routed into outdoor spaces and corridors, especially those identified and vegetated with riparian species.
- Green roofs will be considered for both existing and future buildings. The advantages of green roofs include retention of water, water quality improvement, climate control of buildings, protection of the rooftop from the elements, and enhancement of the view of the roof from above.
- Permeable paving will be utilized wherever possible. Stone cobble may be used to reinforce drainage swales.

Illustrative Landscape Plan

The Illustrative Landscape Plan (Figure 38) shows how the open space and landscape strategies described in this chapter can be applied to the Hayward campus as it grows.

Major elements of the Illustrative Landscape Plan include:

New Entry Drive

The new entry drive creates a grand ceremonial entrance to the campus. It is lined with a distinctive tree planting that continues through main entry quad.

Main Entry Quad

The main entry quad is lined with distinctive tree planting along the perimeter of the quad to define the quad space and draw students and visitors into the campus.

Main Pedestrian Promenade

The main pedestrian promenade has a strong, consistent design expression with distinctive tree planting throughout its entire length, marking it as the most prominent of the north-south pedestrian walkways. This route will be lined on one side with a vegetated swale to handle stormwater runoff.

Amphitheatre

No change is foreseen for the amphitheatre area, where full tree cover buffers the stage from the adjacent parking lots, and lines the edges of the seating area.

Figure 38
Illustrative Landscape Plan



Perimeter Street Tree Planting

Street tree planting provides a consistent edge environment, supports pedestrian activity, and creates an identifiable edge to the campus.

Parking Lot Planting

The surface parking lots will be planted with trees to provide relief from the expanse of pavement, as well as to provide much needed shade.

Green Roof on Library

The rooftop link from Warren Hall over the Library presents an enormous opportunity for a green roof. A green roof would collect and treat stormwater, provide a more aesthetically pleasing view from Warren Hall, and would enhance the pedestrian experience by reducing the scale of the expansive concrete rooftop.

Student Commons

The Student Commons is the center of student activity on campus. Located near the cafeteria and bookstore, this is the central area for socializing and informal campus events.

Slope Planting

The west and south-facing slopes and embankments are suited to a hard chaparral planting palette, including groundcover, shrubs and trees.

Naturalistic Planting along Edges of the Site

The areas along the edges of campus and in the larger undeveloped area to the south support a naturalistic oak woodland planting.



(above)
 Parking lots can be landscaped with trees and screening vegetation. Vegetated swales can also be used to manage stormwater runoff. (Redwood Shores, CA)

(left)
 Green roofs are a sustainable building design strategy that lower energy use and aid in building cooling. (Gap Offices, San Bruno, CA)



(above)
The varied topography of the Hayward campus creates situations where slopes lie between developed sites. Most of the north- and east-facing slopes have been successfully landscaped with a rich palette of trees and groundcover.

Landscape Interpretation and Education

An ecological approach to landscape requires a long term, concerted effort to explain and build interest and enthusiasm for a different aesthetic and approach to maintenance and management. For example, some plant materials that survive with minimal input of water and fertilizer also have a natural period of senescence when foliage discolors and seed is set. Other plants may take a longer time to spread and become well-established, requiring more weed removal initially.

An awareness and appreciation of these natural cycles requires education, interpretation, and adjustment to maintenance practices.

- To communicate the long-term benefits and intent of the ecological landscape approach, the University should develop a program of education and interpretation to explain the relationship of the native landscape to campus improvements and overall sustainable approach. This may include signage, interpretive displays, tie-ins to university curriculum, and “adoption” of elements of the campus landscape by members of the community including faculty, students, and staff.
- Landscaped areas may provide opportunities for gardens, native plants, edible plants, demonstration gardens, and arboretums to help to communicate sustainable ideas.
- To insure long-term health of new and renewed landscape, the University should develop a manual for maintenance of campus landscape areas to be developed and used by campus facilities staff.

