

WINDWARD COMMUNITY COLLEGE



DESIGN GUIDELINES

FOR THE
UNIVERSITY OF HAWAII
COMMUNITY COLLEGES
STATE OF HAWAII

PREPARED BY

kya design group

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1.0 OVERVIEW

1.1 PURPOSE AND INTENT

The Master Plan document identifies future program and facility requirements. It also defines the intended design character and concepts which call for an identifiable and unified campus design theme.

The intent of the plan is to achieve a cohesive campus character through the compliance with design guidelines. For the most part, the guidelines are general in nature to provide an overall design framework. However, the characteristics of certain key elements have been described in more detail to assure design consistency throughout the campus.

The guidelines are to be used by prospective consultants, the Department of Planning and Permitting (DPP), Windward Community College (WCC), the University of Hawai'i Community Colleges (UHCC) and Department of Accounting and General Services (DAGS) in the development and review of future campus projects. The DPP will receive an annual report from the State, on project progress and compliance with the PRU and Master Plan. In addition, the State will submit any proposed revisions or updates to the PRU, Master Plan or campus Design Plan.

1.2 SCOPE

The scope of this document addresses specific items required by the City Council. The items focus on the design and development of physical facilities and construction which impact the visual character of the campus. Other information such as the College's long-range goals, planning criteria, and development requirements pertaining to utilities-related infrastructure is detailed in the PRU / Master Plan, Volumes 1 and 2. As a condition upon which the approval of the PRU was granted, the Design Plan was required by City Council Resolution No. 94-87 to provide a more detailed framework for the design and review of future developments.

Design Guidelines, an expanded Landscape Plan, a comprehensive Signage Plan, and an expanded Lighting Plan were required and included in this document.

1.3 APPLICABLE CODES AND STANDARDS

The campus Design Plan is to be used in conjunction with the City and County of Honolulu Land Use Ordinance (LUO). The American with Disabilities Act Accessibility Guidelines (ADAAG), City and County of Honolulu Department of Public Works Standard Details (for roadway construction), the latest adopted Uniform Building Code (UBC) with local amendments and other applicable codes and standards should also be followed during the implementation of this plan.

If a conflict exists between any provision of these guidelines and any law, code, ordinance or standard, the stricter provision will prevail.

1.4 STUDY AREA

The campus Design Plan addresses the area within the Windward Community College boundary. The location and limits of this Plan area (see Figure 1.1), Windward Community College Plan Area.



Figure 1.1 Windward Community College plan area

1.5 FORMAT

This document is based in part on the Windward Community College Design Plan and Design Guidelines document, dated July 15, 1994 and revised November 30, 1995.

The campus Design Plan is organized into five separate sections to address design considerations, concepts, guidelines, implementation and phasing, and amendment process. The guidelines are organized into the following sections:

2.0 DESIGN PRINCIPLES AND CONTROLS

In addition to addressing the goals and objectives of the college, the Design Plan also responds to the City's Development Plans which specifies urban design principles and controls for open space, views, building heights, density and circulation.

3.0 CAMPUS CONCEPTS AND THEMES

Central design concepts and themes define the desired campus character and context into which the college's facilities will be integrated. The resulting images and feel will be the basis for developing design guidelines to direct campus development.

4.0 DESIGN GUIDELINES

4.1 Architectural Design Guidelines

Guidelines and recommendations that affect the design character of new buildings or the renovation of existing buildings are provided in this section. The major architectural elements are addressed.

4.2 Site Development Guidelines

The section on site design describes the recommendations for the following components: setbacks, parking, roadways, pedestrian circulation, service areas, and ancillary structures.

4.3 Landscape Guidelines

This section specifies recommended plant materials and irrigation schemes for key areas of the campus.

4.4 Signage Guidelines

The Signage Plan establishes the direction for campus signage by identifying the major signage types and their locations.

4.5 Mechanical, Electrical, and Plumbing Guidelines

This section describes recommendations for the Mechanical, Electrical, and Plumbing disciplines.

5.0 IMPLEMENTATION

This section contains procedures for amending these guidelines; reviewing and updating the implementation status of the Master Plan; and reporting the revisions to the Department of Land Utilization.

2.0 DESIGN PRINCIPLES AND CONTROLS

The development of the Windward Community College will comply with the principles and controls described in the City and County of Honolulu Development Plan Common Provisions, Section 24-1.4, as well as those described in Section 24- 6.2: Special Provisions for Ko’olaupoko, except as modified in the campus Design Plan. The following provisions are common to both sections of the document:

2.0.1 PUBLIC VIEWS

All existing public views to and from the campus will be maintained or enhanced. The main view corridor along the Keahala Road will be unaffected and continue to afford views of Hale Alaka’i and the Ko’olau Mountains in the background when approaching the campus. Panoramic mauka and makai views will continue to be available from within the campus and adjoining areas when future facilities are built. None of the important views cited for consideration by the Development Plan will be affected by any campus construction.

Siting of new buildings will respect the same setbacks along the campus roadways established by existing buildings to preserve views and open space. Overhead utility line and poles are to be converted to underground lines as infrastructure is constructed to support new buildings. The implementation and phasing of underground services will correspond with site improvements shown in Table 5.1, Implementation Plan.

2.0.2 OPEN SPACE

For the most part, the campus master plan will continue to exhibit a generous amount of open space despite the addition of new buildings. Most new facilities will be located where existing parking areas or buildings occur. By respecting the size, scale and siting of existing buildings, the character and feel of the developed campus will remain spacious and open.

The Design Plan’s treatment of open space within the campus will be consistent with the intent of the City’s Development Plan for the Windward area. Visibility, preservation, enhancement and accessibility of open spaces will be a high priority and emphasized in the plan’s concepts and design guidelines, (see Figure 2.1). The public open spaces mentioned for consideration by the Development Plan will not be affected by the campus.

2.0.3 General Height Controls

The height of the existing campus and adjacent areas are in general compliance with the intent of the City’s Development Plan. However, several State Hospital buildings and the college’s Hale Akoakoa are well in excess of the present 25’ height limit without producing any negative effects. Their impacts are mitigated by being separated with generous setbacks from adjacent residential properties.

The only proposed area of non-conformance with the Development Plans is in the increased height limit from 25 feet, for the existing agricultural zoning of the campus, to 50 feet. The additional height, where required, facilitates the continuation of strong roof forms atop five buildings (Hale Akoakoa, Hale Manaleo, Hale No’eau, Hale La’akea, Hale

Palanakila,) designated to be two-stories high.

The estimated heights for proposed campus buildings exceeding the current 25 feet limit are shown on the Five Year Master Plan, (see Figure 2.2). Heights are based on present proposed building sizes and footprints, approximate floor to floor heights of 14 feet, and 6 in 12 roof slopes. Actual heights based on final designs may vary from those indicated, but shall not exceed the proposed 50 feet height limit.

The effect of these buildings, along the upper part of the main campus, should be minimal and not significantly affect the existing views. Their impact will be mitigated by their locations which are setback a substantial distance from residential areas.

2.1 DEVELOPMENT PLAN COMMON PROVISIONS

In addition to the principles and controls listed above, the development of the Windward Community College will comply with the following provisions from the City and County of Honolulu Development Plan Common Provisions, Section 24-1.4:

2.1.1 VEHICULAR AND PEDESTRIAN ROUTES

Landscaping will be provided along all main roadways of the campus. Appropriate landscaping will be used to minimize the visual dominance of paved parking surfaces. Separation of the main campus' vehicular and pedestrian routes will minimize conflict between circulation systems and encourage walking and bicycling as the main means of getting around the campus. Additionally, a comprehensive signage system will clearly direct vehicles and pedestrians to campus destinations. Site furnishings including benches, trash receptacles, planters, covered walkways and bus shelters should be compatible with the character of the campus.

2.1.2 SUSTAINABLE DESIGN

Building on the provision that efficient energy use shall be encouraged in all new campus developments, the core elements of sustainable design should also be addressed: water, energy, and material conservation, sustainable site design and indoor air quality. The United Nations defines sustainable building as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs." To help ensure that the campus and island may continue to be enjoyed for generations to come, it is strongly encouraged that new construction, major renovations, and existing buildings pursue LEED or other equivalent certification when appropriate.

The latest technology in energy efficient design, water conservation, and indoor air quality should be considered during the planning and design of future buildings and site development projects. All new construction and renovation projects shall comply with the State's model energy code.

Refer to individual sections within Section 4.0 Design Guidelines for specific guidance on sustainable design strategies and objectives. Also see Appendix A2 for Sustainability Resources.

2.1.3 RURAL CHARACTER

Although designated as Urban on the State Land Use Classification Maps, the campus site has a rural character because of its agricultural (AG-2) zoning and the low density of existing developments. The design concept promotes the preponderance of open space and small, low density developments which evoke a strong sense of place in a country-like environment.

2.2 KO'OLAUPOKO DEVELOPMENT PLAN SPECIAL PROVISIONS

Additionally, the development of the Windward Community College will comply with the following from Special Provisions for Ko'olaupoko, Section 24- 6.2:

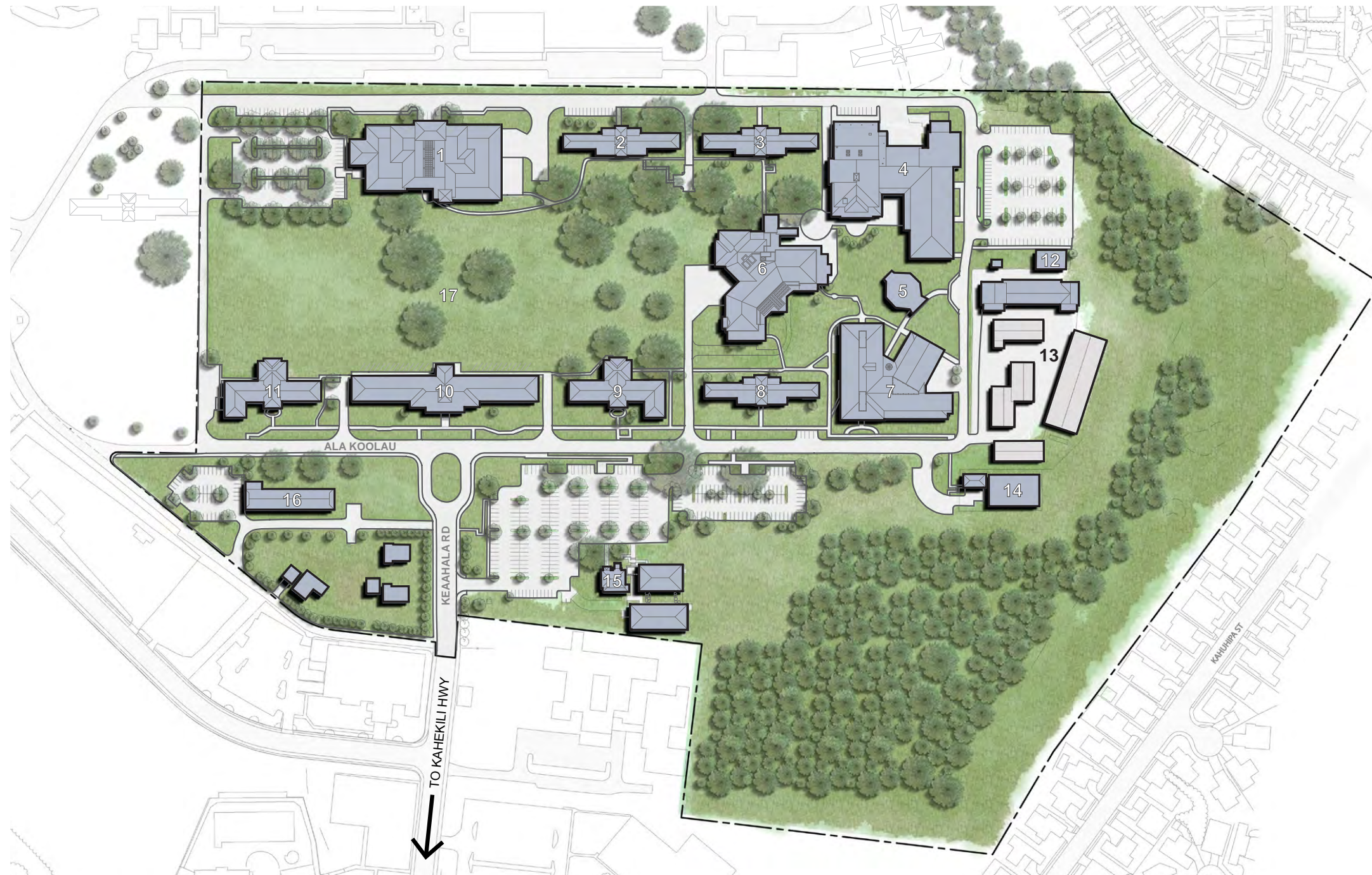
2.2.1 DENSITY CONTROLS

The density controls of the Development Plan address residential uses, but not educational facilities in Agricultural zoned lands. However, the continued character of the campus will be compatible with the surrounding low-density residential area.

The ratio of open space in relation to total campus area will be about 75% when the Master Plan is fully realized. Computation of the proposed development density is shown in Section B-1, Volume 1, of the PRU / Master Plan.



Figure 2.1 Campus views and open space



- | | | | |
|--------------------------------------|-----------------|---------------------------|---------------|
| 1 HALE ĀKOAKOA | 5 HALE HŌKŪLANI | 10 HALE ALAKA'I | 15 HALE A'O |
| 2 HALE NO'EAU | 6 HALE LA'AKEA | 11 HALE KUHINA | 16 HALE AWA |
| 3 HALE MANALEO | 7 HALE 'IMILOA | 12 LANIHULI OBSERVATORY | 17 GREAT LAWN |
| 4 HALE PĀLANAKILA,
PALIKU THEATER | 8 HALE KAKO'O | 13 MAINTENANCE FACILITIES | |
| | 9 HALE NA'AUAO | 14 HALE ULUWEHI | |

Figure 2.2 Five Year Master Site Plan

3.0 CAMPUS CONCEPTS AND THEMES

3.1 HISTORY

Located at the base of the Ko'olau mountains in Kāne'ohe on the island of O'ahu, Windward Community College (WCC) primarily serves residents from Waimanalo to Kahuku. Established in 1972, the College operates out of renovated former Hawai'i State Hospital buildings and some newly constructed buildings on approximately 64 acres of land, (Windward Community College Strategic Plan Action Outcomes, November 2008).

3.2 EXISTING CHARACTER

The existing campus is characterized as rustic, with large open spaces between small-scale, single-story structures in a pastoral setting. The simple Spanish Mediterranean architectural style of the existing buildings, with stuccoed walls and clay tile roofs, creates a strong sense of visual unity for the main campus. The campus' location at the base of the Ko'olau mountain range enhances the campus' secluded and tranquil feeling through the area's many mature trees and lush, rich landscaping .

The existing character and conditions of the campus' architecture, site attributes and utilities are described further in Sections A-1, A-3, C-1, C-2, C-3, and C-4 of the PRU, Volume 1.

3.3 DESIGN CONCEPTS AND THEMES

Analysis of these qualities led to the establishment of design concepts and themes for the campus. The design concepts are generalized ideas that describe the essence of the perceived environment which can be visualized as a particular feeling, lifestyle or quality. Design themes develop the concepts and identify elements or parts that contribute to the organizing the environment.

3.3.1 OVERALL DESIGN CHARACTER

The concept for the overall design character is to promote the atmosphere and feel associated with a friendly, small town college campus which presently exists. In response to this image, design concepts and themes consistently call for preserving and enhancing the existing unique qualities of the buildings and site features. The central concept of retaining the tranquil character of the campus recognizes that this quality contributes greatly to the uniqueness of the college's environment and academic goals. The concept is consistent with the projected enrollment of 2,000 full-time equivalent (FTE) students and the required facilities to support this student population.

3.3.2 CAMPUS ARCHITECTURE

The design concept for campus architecture calls for the continuation of the present architectural character for new and existing buildings to be renovated. Structures with a maximum height of two-stories and sloped roof forms similar to the existing buildings will be in keeping with the area's residential nature.

The Design Plan and its guidelines are not intended to require future buildings that only replicate or duplicate the existing architectural style, but instead, encourage a harmonious family of buildings that relate to the overall design concept. The intention is to rehabilitate existing, older buildings that are appropriate and functional and to incorporate new, compatible facilities into the existing fabric of the campus.

The architectural theme should be predominantly the Spanish Mediterranean style to reflect and complement the vocabulary of the older buildings. Thematic elements should include arched openings, stuccoed or plastered walls and hipped roofs with clay tile roofing to repeat the traditional flavor of the campus.

OBJECTIVES

- Enhance existing historic character of the campus buildings.
- Keep the footprints of new buildings compact to maintain maximum open space.
- Introduce new buildings that respect the location, scale and size of the existing buildings.

3.3.3 SITE DESIGN

The design concept for campus site also calls for preserving and enhancing the character and feel of the existing campus in future developments. It addresses four key elements that make up its distinctive character: siting of buildings; vehicular circulation; pedestrian circulation; and landscaping.

OBJECTIVES

- Create strong edge definition between the college and the State Hospital.
- Keep central portion of main campus and northern corner (future gardens) as major open spaces.
- Locate parking and roads at the perimeter of the main campus.
- Create a pathway system for pedestrians and maintenance, covered walkways and accessible routes.
- Improve safety of transit riders, bicyclists, pedestrians as well as vehicular drivers.
- Preserve the Great Lawn and designated Exceptional Trees.
- Contain and treat majority of storm water runoff on site.

BUILDING LAYOUT

The concept envisions the retention of the formal, but spacious layout of the existing campus when new buildings are sited or located. The site layout proposed by the Master plan provides for this and generally should be followed when developing future facilities. The intent of the site design concept is to maintain the present quality of open space.

Certain structures, (Hale Akoakoa, Hale Manaleo, Hale No'éau, Hale La'akea, Hale Palanakila,) are two-stories in height to keep their footprints compact and allow more open space to be retained. Positioned on the upper part of the main campus, they create a backdrop for the campus and provide a clearly defined transition between the college and the State Hospital facilities.

VEHICULAR CIRCULATION AND PARKING

The concept for vehicular circulation is to preserve the simple, straightforward roadway system that encircles and defines the main campus. The existing two-lane roadway system helps to give the campus its scale and rural character. The main roadway system is a loop road with two-way traffic around the main campus. Parts of these roads are tree-lined or shaded by mature canopy trees.

Parking will be limited to the lots located along the periphery of the main campus and in limited spaces along Ala Kooalu at the upper campus. Indented passenger loading areas along Ala Kooalu at lower campus and a bus drop-off at the entrance to the campus reinforces the emphasis on the pedestrian-oriented theme of the campus.

Related improvements include providing for and standardizing walkways and sidewalks along roads; converting overhead utilities lines to underground lines; and screening off-road parking, loading and service areas with appropriate landscaping.

To emphasize a healthier campus lifestyle and reduce the dependency on automobiles, cars will be limited to the perimeter of the campus.

PEDESTRIAN CIRCULATION

The primary concept for the campus circulation is pedestrian-oriented to encourage social interaction. The proposed walkway system calls for more clearly delineated pedestrian paths with a mixture of open and covered walkways between buildings for weather protection.

Walkway routes may be adjusted to accommodate the actual locations of future buildings and entrances.

The Master Site Plan, (Figure 2.2), indicates the proposed locations of covered walkways which will correspond with wheelchair accessible routes between buildings. Where appropriate, rest stops with seating areas should be provided along pedestrian paths and under shade trees.

The design of the covered walkways will be simple, airy, and compatible with the architecture of the buildings. Design criteria for covered walkways are described in section 4.2.4 Pedestrian Circulation.

The proposed pedestrian circulation system for the campus calls for direct paths from parking areas to buildings and between buildings. The network of paths for pedestrians and bicycles as well as conveniently located parking areas are designed to encourage more walking and cycling.

Within the central campus area, a system of interconnected curvilinear pathways is proposed to provide a more fluid pedestrian movement, as well as to create visual forms compatible with the open, rural character of the campus. All pedestrian pathways will be well-lit at night for safety and convenience.

LANDSCAPING

The ultimate landscape plan calls for retaining the character of the existing campus. The majority of the campus will remain grassed with special attention paid to grounds adjacent to buildings, parking areas, roadways and campus edges. Greater detail is provided in section 4.3 Landscape Guidelines. The proposed landscape concept supports the character of the existing campus by emphasizing the following features:

- a. Existing banyan trees are to be protected, or relocated when possible. The landscape plan showing existing and proposed tree locations, (Figure 4.30), indicates 31 mature banyan trees in the central campus area which are to be protected as advised by the Kāneʻohe Outdoor Circle and the Mayor’s Arborist Advisory Committee.
- b. Low ground covers proposed around buildings will provide an attractive setting for each building and visual definition between campus structures and the open, central campus area. This landscaping treatment will also minimize maintenance activity around near buildings.
- c. Canopy trees will shade large parking areas, soften their effect and continue the rural setting theme.
- d. Trees proposed along roadways will soften their effect and delineate campus edges. Campus edges will have landscaping consisting of vertical planting and ground cover materials to mitigate the view of parking areas and buffer adjacent properties.
- e. Parking lot landscaping treatment (trees and screening elements) shall comply with the Land Use Ordinance (LUO).

4.0 DESIGN GUIDELINES

This section includes an overview of guidelines for architectural, site, landscape, signage, and mechanical/electrical/plumbing disciplines. Additionally, sections may contain language referring to LEED credits that are supported by the Application Guide for Multiple Buildings and On-Campus Building Projects. Under this application, credits are pre-approved through a master-site review and available for all campus improvement projects pursuing LEED certification within the defined LEED boundary that also meet minimum program requirements.

4.1 ARCHITECTURAL DESIGN GUIDELINES

The WCC campus' architectural character is primarily defined by its historic past; this significance was formally recognized with the designation of the WCC Historic District. The Historic District covers a significant portion of campus and impacts the majority of existing campus buildings, (see Figure 4.1). In total there are three distinct historical eras represented on campus and each is defined by corresponding architectural characteristics. The appropriate architectural character for a proposed building project is determined by the historical region it is located within, therefore new projects are to follow the design guidelines for the historic era region in which it is located, (see Figure 4.2).

WCC HISTORIC DISTRICT

The Territorial Hospital historic district consists of nine buildings which were erected in the period 1928 – 1935 and one constructed circa 1950 for the care and treatment of Hawaii's mentally ill. The district is characterized by an extensive green open space with modest Spanish Mission revival style buildings at its periphery. The buildings face downhill, towards the ocean, and are of reinforced concrete, one-story in height, and originally nine had red tile roofs. Seven of the buildings are sited around the main quadrangle, which is defined by the buildings on three sides and a roadway on the fourth. The other three buildings sit on the periphery of the quadrangle area. The buildings primarily served as wards to house the mentally ill, and as such are quite long and spaced relatively far apart from each other. Eighteen mature banyans, primarily located on the large grassy quadrangle (Great Lawn), further define the district's character.

All renovations, alterations and/or additions should follow the Secretary of the Interior's Standards and guidelines for rehabilitating historic buildings. Refer to the original drawings for accuracy and compatibility to the historic style. Please see the website for the Secretary of the Interior's Standards and guidelines, (<http://www.nps.gov/hps/tps/standguide/>).

Please note, Windward Community College is eligible for listing on the National and Hawaii State Registers of Historic Places. Thus, all proposed future work on the campus shall be reviewed by the State Historic Preservation Division pursuant to Hawaii State Revised Statutes, Chapter 6E-8. Historic District boundaries and guidelines are further described in the following section.

The following architectural design guidelines provide direction for achieving the intent of the design concepts. Some of the architectural design elements that are most critical for buildings are: scale and massing; facade detailing; windows; and wall finishes. The three historic era regions listed below are described in greater detail within each architectural category:

A. WOOD FRAME BUILDINGS (1920s) REGION

ARCHITECTURAL DESCRIPTION

Built in 1929, the Doctor's Residence (now known as Hale A'o) is the only original wood frame building that survives on campus. The clapboard clad two-story dwelling sits on a lava rock post and pier foundation. It has a steep hipped roof with overhanging eaves and exposed rafter tails. A single-story entrance on the mauka side has a hipped roof with four square-paneled posts supporting the roof. At the time of original construction, the front entry was located at the makai side of the building. The original front lanai is now enclosed with transom windows and currently functions as another room at the rear of the house. Other original features include wooden 6x1 double-hung windows and paneled columns on the corners of the exterior elevations. Features that are not original include a modern single-story wing added adjacent to the portico façade and a modern corner entry at the mauka side.

B. SPANISH MISSION STYLE, THE TERRITORIAL PERIOD (1893-1941) REGION

ARCHITECTURAL DESCRIPTION

The style used in this period is most commonly recognized as Spanish Mission Style. The style is typically characterized by stucco-finished exterior walls, balconies (lanai), semicircular arches, a low-pitched hipped roof with red mission-tile, double hung rectangular windows, and the main entry door often located within a centered recessed porch. The buildings at WCC and the Hawaii State Hospital evolved and adapted the style to the local design. This can be often seen at building features such as architectural screens or decorative railings that have Asian or Hawaiian elements. In keeping with the style, careful consideration should be made towards the following recommendations:

C. MODERN ERA BUILDINGS (1940-1975) REGION

ARCHITECTURAL DESCRIPTION

During the years following World War II, Hale Awa and several buildings were constructed for Hawaii State Hospital. Among the buildings located within the WCC historic district, Hale Awa is the only building designed in the Modern style. The two-story building features a hip-gablet roof and is constructed of hollow tile, finished with stucco. Hale Awa features two banded rows of windows along the length of the building on each side, further emphasizing its horizontality to maintain a sense of consistency with other campus buildings. In keeping with the style, careful consideration should be made towards the following recommendations:



Figure 4.1 Historic District Boundary and historic era building type locations

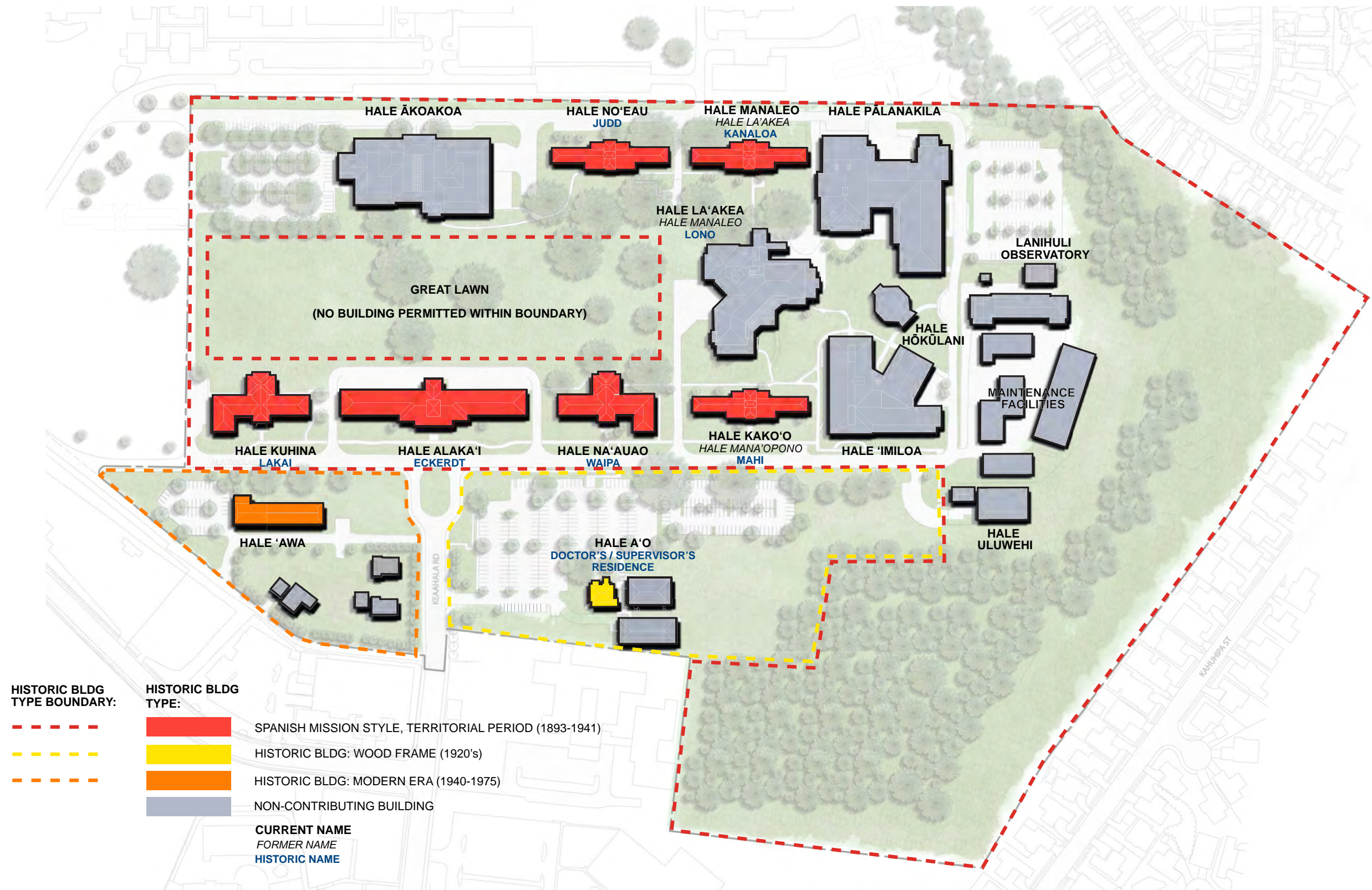


Figure 4.2 Historic era building type boundaries

4.1.1 HEIGHT

- a. Two-story buildings should reduce the emphasis on verticality with the use of horizontal elements such as tiered roofs and/or balconies.
- b. Limit maximum height of all buildings to 50 feet above adjacent finish or existing grade, whichever is lower. The method for measuring building height shall comply with the LUO, (see Figure 4.3).
- c. The heights of existing buildings shall be maintained. When substantial increase in floor area is required for an existing building, a second level and additional height may be provided where scale and massing are appropriate.

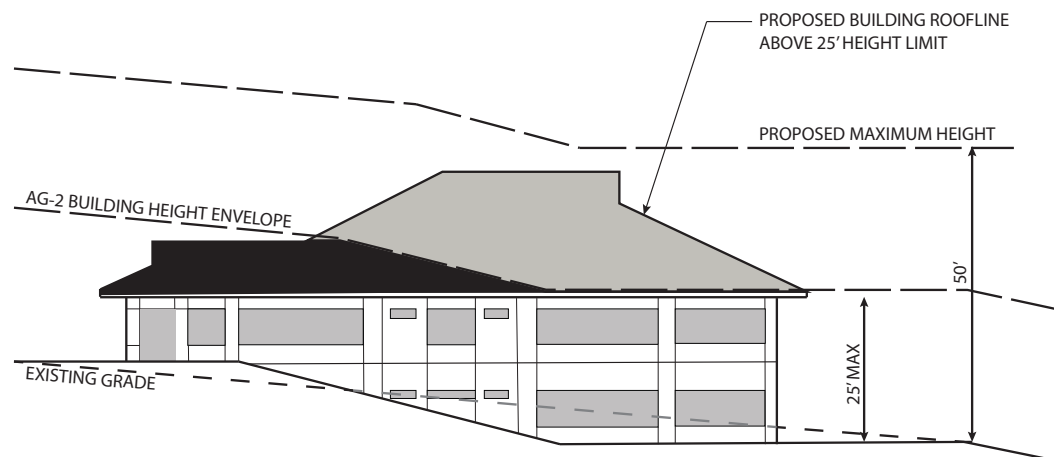


Figure 4.3 Building heights: existing and proposed height envelopes

4.1.2 SCALE AND MASSING

ALL NEW BUILDINGS:

- a. Size elements, such as windows, doors, and ornaments, to relate to human scale and proportions.
- b. Minimize large masses or volumes through the use of varying roof and wall planes. Step or setback second floor areas from lower floors, where possible, to reduce the apparent mass of the upper levels.
- c. Acknowledge the scale, massing, spacing and relationship of existing buildings when juxtaposing new construction.
- d. Massing should emphasize horizontal elements instead of verticality. However, long building elevations should be articulated with changes in planes and / or vertical elements such as columns.
- e. Utilize two-story structures, where allowed by the functional program and master plan, to keep footprints compact and retain as much open space as possible.
- f. Balconies, lanais and arcades shall be used, where appropriate, to adjust scale and massing of structures.

4.1.2 A. WOOD FRAME BUILDINGS REGION: SCALE AND MASSING

- a. Maintain structures to be in scale with the existing campus buildings and surrounding areas.
- b. Retain use of varying roof and wall planes.
- c. Preserve symmetry of original building elements.
- d. Preserve the extensive open space character of the area, allowing for visible sight lines to buildings.

4.1.2 B. SPANISH MISSION STYLE REGION: SCALE AND MASSING

- a. Maintain structures to be in scale with the existing campus buildings and surrounding areas.
- b. Retain use of varying roof and wall planes.
- c. Maintain emphasis on horizontality of existing structures.
- d. Maintain symmetry of building elements.
- e. Maintain central two-story rectangular tower and outset front lanai distinguishing entryway.
- f. Preserve the extensive open space character of the quad area (Great Lawn), allowing for visible sight lines to buildings; refer to figure 4.2 which illustrates the boundary of the Great Lawn where no structures are permitted.

4.1.2 C. MODERN ERA REGION: SCALE AND MASSING

- a. Maintain structures to be in scale with the existing campus buildings and surrounding areas.
- b. Maintain emphasis on horizontality of existing structures.
- c. Maintain symmetry of building elements, with the exception of the original laundry room facility at the rear elevation.
- d. Retain central recessed entryway and extended wings, which mimics scale and massing of the predominant style of historic campus building, the Spanish Mission Style.
- e. Preserve the extensive open space character of the area, allowing for visible sight lines to buildings.

4.1.3 ROOFS

ALL NEW BUILDINGS:

- a. Copper metal roofing, flashing, gutters and downspouts shall be allowed to acquire a natural patina over time as the structure ages. When the copper material is not allowed, use galvanized metal painted to match existing fixtures.
- b. Flat roofing materials shall be non-reflective or non-glare producing, in lighter or earth tone colors.
- c. Minimize the visibility of solar panels, mechanical, electrical, and other rooftop equipment from ground level view with the use of screen walls, parapets or roof wells. Where possible, group equipment together to facilitate screening.
- a. Where renovation, alteration, and/or expansion of an existing building occur, materials shall be similar in color and texture to achieve a contiguous and unified appearance.
- d. Designing roofs to drain to an on-site cistern to capture storm water may contribute to LEED campus credits from WEC1: Water Efficient Landscaping.

4.1.3 A. WOOD FRAME BUILDING REGION: ROOFS

- a. Where renovation, alteration, and/or expansion of an existing building occur, materials shall be similar in color and texture to achieve a contiguous and unified appearance. Roof pitch may impact color and depth of the shingles; thus, it is not recommended that the pitch be altered.
- b. Maintain the original design of the roof lines and slopes in keeping with the existing buildings on campus. Retaining historic qualities of a hipped roof with overhanging eaves and rafter tails is highly encouraged.
- c. For roof replacements, it is recommended that cedar shingles, as shown in the original drawings, should be used, (See Fig. 4.4). If replacement with cedar shingles is not feasible, then Three Tab Asphalt tile shingles may be used for future replacements.



Figure 4.4 Wood shingles

4.1.3 B. SPANISH MISSION STYLE REGION: ROOFS

- a. A primary key element in a building's character is the role of the roof. To maintain a sense of scale, proportion, and style, a sloped form roof is highly recommended for buildings designed in the Spanish Mission Style period.
- b. For new buildings within this region: Use one-piece mission S-style or two-piece mission style clay tiles as the predominant roofing material of proposed buildings to maintain continuity with existing roofs. Tile colors for new and future proposed buildings should be modulated with a four color blend in the following percentages to complement existing hues of surrounding buildings and give the college a separate identity from the State Hospital facilities: Natural red (70%); Spanish red (10%); light buff (10%); and Sahara (10%), (see Figure 4.5). Color blends of red, brown, orange, green and other muted natural tones may also be recommended to provide variety and interest to the new roofs or future proposed roofs.
- c. All colors should be non-reflective to help blend the building into the surrounding environment and landscape.
- d. Roof design for new buildings shall generally conform with the hip or gable styles currently found on campus. Other acceptable roof styles or shapes may include double pitched and flat roofs used in conjunction with the hip or gable styles. Approximately two-thirds (2/3) of a building's total roof area should be designed with a sloped roof for clay tile roofing.
- e. Where appropriate or necessary and when approved by the College, other roof forms may be used for functional reasons, aesthetic relief or to comply with the required height limit.
- f. Use minimum roof pitches of 3:12 to 6:12 slopes for clay tile roofs. Flat roofs should maintain a minimum pitch of 2 inches per foot.
- g. Preserve pitched roofs, which encourage a sense of human scale and proportion.
- h. Maintain the original design of the roof lines and slopes in keeping with the existing buildings on campus. Retaining large eaves and overhangs for shelter and shade is highly encouraged.
- i. Avoid roof extensions, especially with the hip roof, to maintain the look of the original roof style.
- j. Where feasible, existing buildings within this region that are constructed after 1975 should be renovated with the same clay tile blend designated for new buildings.
- k. For existing buildings within this region that were constructed before 1975: clay tile roofs are recommended for their durability, low maintenance, economics, and aesthetic appeal. (See Figure 4.6).
 - i. Matte finish with monotone color
 - ii. Uniform red color throughout
 - iii. Recommended for existing tile roofs, the predominant roofing material, to match other historic two-piece clay tile roofs in order to maintain consistency.

- l. It is recommended that Three Tab Asphalt tile shingles shall not be used at historic buildings designed in the Spanish Mission Style because the material is incompatible with the original style.
- m. It is recommended that any existing asphalt shingle roofs on this style of building be replaced with single color, red clay tile roofs when the roof is scheduled to be replaced in the future. Where asphalt tile shingles are currently used as roofing material on Spanish Mission Style buildings, it is recommended that uniform red clay tile be used upon future scheduled roof replacement in order to maintain the original design aesthetic and to be compatible with existing buildings around the WCC campus. Refer to the Roof: Colors and Textures portion of this section for recommendations for the tiles to be used in the WCC campus.



Figure 4.5 Roofs: clay roof tile with multi-color blend



Figure 4.6 Example of clay tiles

4.1.3 C. MODERN ERA REGION: ROOFS

- a. Maintain original hip-gablet roof of existing building.
- b. Where renovation, alteration, and/or expansion of an existing building occur, materials shall be similar in color and texture to achieve a contiguous and unified appearance. Roof pitch may impact color and depth of the shingles; thus, it is not recommended that the pitch be altered.
- c. Roof shingles should remain similar in style and intent of the original shingle design. It is recommended that Three Tab Asphalt tile shingles be used for future replacements due to its simple, clean appearance and ease of repair when portions are damaged.

4.1.4 FACADES

ALL NEW BUILDINGS:

- a. Break up the mass of facades with recessed entries, doors, windows, transoms, and other elements which reflect the existing architecture of the campus.
- b. Minimize the visibility of mechanical and electrical equipment with screen walls, roof wells, landscaping, and/or placement of equipment at interior spaces.
- c. Maintain or replicate plastered walls, arches, colonnades, and railings found in existing buildings.
- d. Provide covered arcades or colonnaded walkways for weather protection and design continuity, (see Figure 4.7). However, it is preferable that covered walkways are not used within the historic district boundaries. Use arched elements where appropriate.



Figure 4.7 Facades: covered arcade and balcony

4.1.4 A. WOOD FRAME BUILDING REGION: FACADES

- a. Maintain original historic features such as the lava rock foundation, lattice work at the base of the structure, and embedded columns at the corner of elevations, (see Figure 4.8).
- b. Replace sidings with the 1x8 double lap rustic sidings, as shown in the original drawings, is Avoid using vinyl sidings.
- c. Minimize the visibility of mechanical and electrical equipment with screen walls, roof wells, landscaping, and/or placement at interior spaces; Minimize add-on mechanical equipment at window openings.

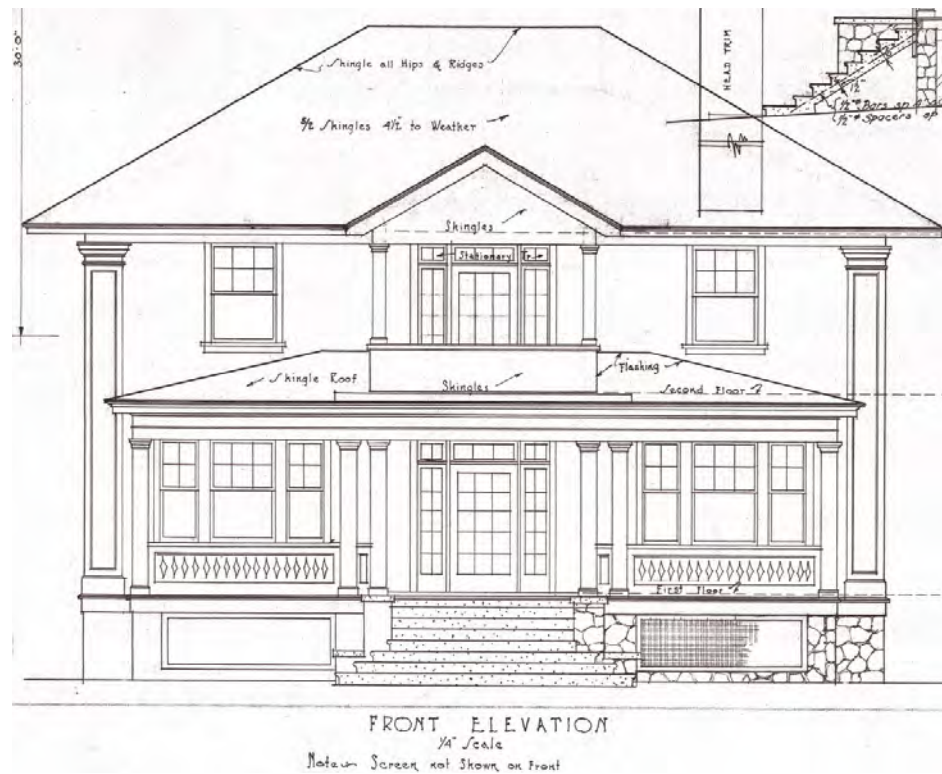


Figure 4.8 Front elevation from the original drawing dated 1927

4.1.4 B. SPANISH MISSION STYLE REGION: FACADES

- a. Minimize the visibility of mechanical and electrical equipment with screen walls, roof wells, landscaping, and/or placement at interior spaces; reduce or eliminate add-on mechanical equipment at window openings.
- b. It is recommended and encouraged that lanais be re-opened to their original state, where feasible. If it is necessary to retain existing enclosed lanais, replace with glazing and/or window setbacks to create the appearance of open lanais from a distance. Refer to the Secretary of Interior's Standards.
- c. Maintain or replicate plastered walls, arches, colonnades, and railings found in existing buildings.

4.1.4 C. MODERN ERA REGION: FACADES

- a. Maintain or replicate plastered walls found at existing buildings.
- b. Provide visual relief of mass with recessed entries, doors, windows and other elements that reflect the Modern design aesthetic and complement the predominant existing architecture (the Spanish Mission Style) of the campus.
- c. Minimize the visibility of mechanical and electrical equipment with screen walls, roof wells, landscaping, and/or placement at interior spaces; reduce or eliminate add-on mechanical equipment at window openings.
- d. It is recommended that the patio and lounge area located at the center of the rear façade and the window openings at the same location be restored to its original design.

4.1.5 BUILDING ENTRANCES

ALL NEW BUILDINGS:

- a. Emphasize main entrances by articulation in plan and elevation. Use arched entries where appropriate.
- b. Main entrances should be oriented toward the makai direction, except the wood structure.

4.1.5 A. WOOD FRAME REGION: BUILDING ENTRANCES

- a. Restoring and re-opening the existing enclosed veranda, and relocating the main entrance to the makai side, as seen in original drawings, is highly recommended. When relocating the entrance, restore the concrete steps and the lava rock wall, (see Figure 4.9).
- b. If it is necessary to retain the existing newer entrance, use a different style of design and materials in order to distinguish the new entry from original architectural elements.



Figure 4.9 Left elevation from the original drawing dated 1927

4.1.5 B. SPANISH MISSION STYLE REGION: BUILDING ENTRANCES

- a. Main entrances for buildings constructed in this style should remain oriented toward the makai direction.
- b. Maintain emphasis on main entrances. Entry elements such as arches, colonnades, and verandas are proportioned to be comfortable for human scale. Maintain and/or replicate arched elements.

4.1.5 C. MODERN ERA REGION: BUILDING ENTRANCES

- a. Emphasize main entrances by articulation with door, window, and materials. Refer to the Secretary of the Interior's Standard for treatment.
- b. Retain orientation of existing main entrance towards makai direction.
- c. Where possible, it is recommended that existing stairways and landings be restored to reflect the original Modern design aesthetic while addressing current safety codes.
- d. Removal of the non-historic, inappropriate ramp addition is recommended. If accessibility is required, pursue other options such as changes in program accessibility, elevator use, etc.
- e. Maintain simple and proportional landscaping to allow for open sightlines to entryways.

4.1.6 DOORS

ALL NEW BUILDINGS:

- a. Use aluminum storefronts at non-historic main entrances and glazed metal doors and frames at classroom entrances.
- b. Finish for aluminum frames and members shall be fluorocarbon coating system. Finish for steel doors and frames shall be semigloss paint.
- c. Relate glazing on entry doors to proportions of facade windows.
- d. Reduce mass of large delivery doors with glazing or other details where possible.
- e. Restore original door treatment and historic style, as possible or feasible, when renovating existing buildings. If wood is not a feasible option, an aluminum door made to appear in the style of paneled wood doors may be acceptable.

4.1.6 A. WOOD FRAME BUILDING REGION: DOORS

- a. Restore original door treatment and historic style, as possible or feasible, when renovating existing buildings. If it is infeasible to use wood, an aluminum door made to appear in the style of paneled wood doors may be an acceptable substitution.

- b. Transoms should be maintained and restored when renovating existing buildings. Refer to the original plans to replicate the original transom design style and materials, (see Figure 4.10).

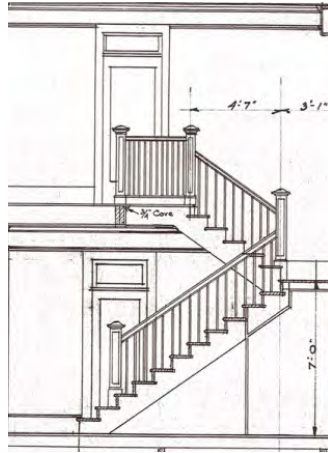


Figure 4.10 Interior doors with transoms

4.1.6 B. SPANISH MISSION STYLE REGION: DOORS

- a. When replacing doors at existing Spanish Mission Style buildings, restore original door treatment and historic style, as possible or feasible, when renovating existing buildings. Refer to the original drawings to match the original door style as closely as possible, (see Figure 4.11). If the original door style is incompatible with the structural function and/or current building code, use a door style that reflects the design aesthetic of the Modest Spanish Mission architectural style. If it is infeasible to use wood, an aluminum door made to appear in the style of paneled wood doors may be an acceptable substitution.

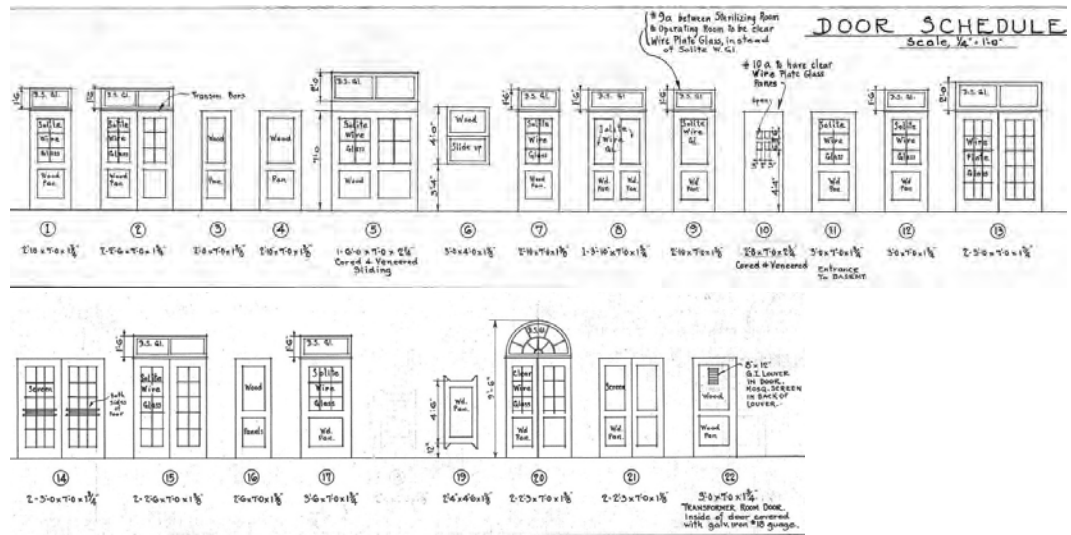


Figure 4.11 Original door schedule for the Alakai, dated 1929

4.1.6 C. MODERN ERA REGION: DOORS

- a. Restore original door treatment and historic style, as possible or feasible, when renovating existing buildings.
- b. Maintain or replicate historic door styles and treatment, particularly at primary entryway. It is recommended that the main entryway, which appears significantly altered, be restored to its original design. Refer to original drawings if found.
- c. Further research is recommended to determine the original entryway design of this building.

4.1.7 WINDOWS

ALL NEW BUILDINGS:

- a. Use typical window characteristics and design found in existing buildings: regular pattern and rhythm; alignment of top or bottom with adjacent elements; awning or double-hung; and recessed into wall surface.
- b. Use single or divided light windows with aluminum frame, sash, muntins, and screen frames. Finish for aluminum frames and members shall be fluorocarbon coating system.
- c. Use light blue / green tinted glass throughout with Hale Imiloa and Hale Kuhina as standards.
- d. Restore original window treatment and historic style, wherever possible, when renovating existing buildings.
- e. Window design should utilize daylighting and other devices to reduce the use of artificial lighting in buildings.

4.1.7 A. WOOD FRAME BUILDING REGION: WINDOWS

- a. Maintain usage of light, absorptive finishes for the building's exterior façade with wood and glass window articulations.
- b. Maintain wooden 6x1 double hung windows.
- c. When replacing windows at existing wooden buildings, refer to the original drawings to replicate the original window design style and materials, (see Figure 4.12).
- d. When replacing windows at existing wooden buildings, refer to the original drawings to replicate the original window design style and materials.

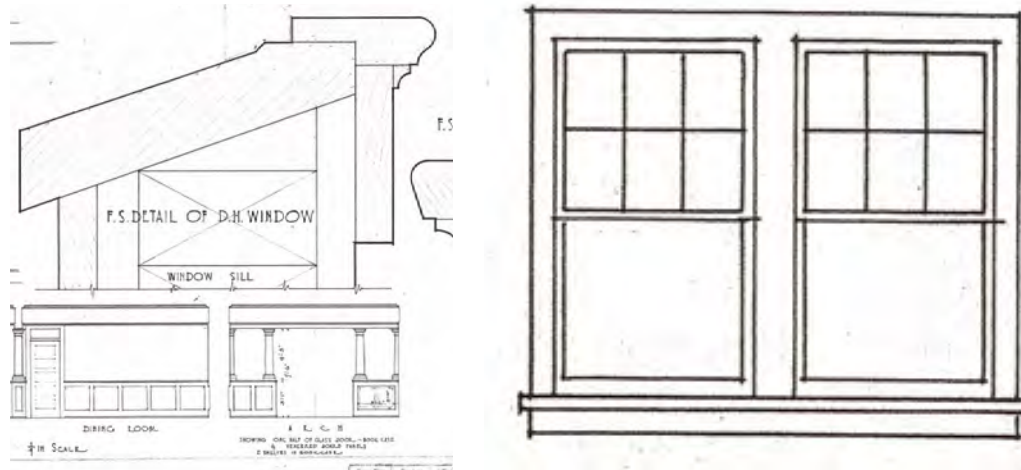


Figure 4.12 Original window elements

4.1.7 B. SPANISH MISSION STYLE REGION: WINDOWS

- a. Maintain usage of light, absorptive finishes for the building’s exterior façade with varying combinations of glass and metal window articulations.
- b. When replacing windows at existing Spanish Mission Style buildings, restore original window treatment and historic style, as possible or feasible, when renovating existing buildings. Refer to the original drawings to match the original window style as closely as possible, (see Figures 4.13). If the original window style is incompatible with the structural function and/or current building code, use a window style that reflects the design aesthetic of the Modest Spanish Mission architectural style.

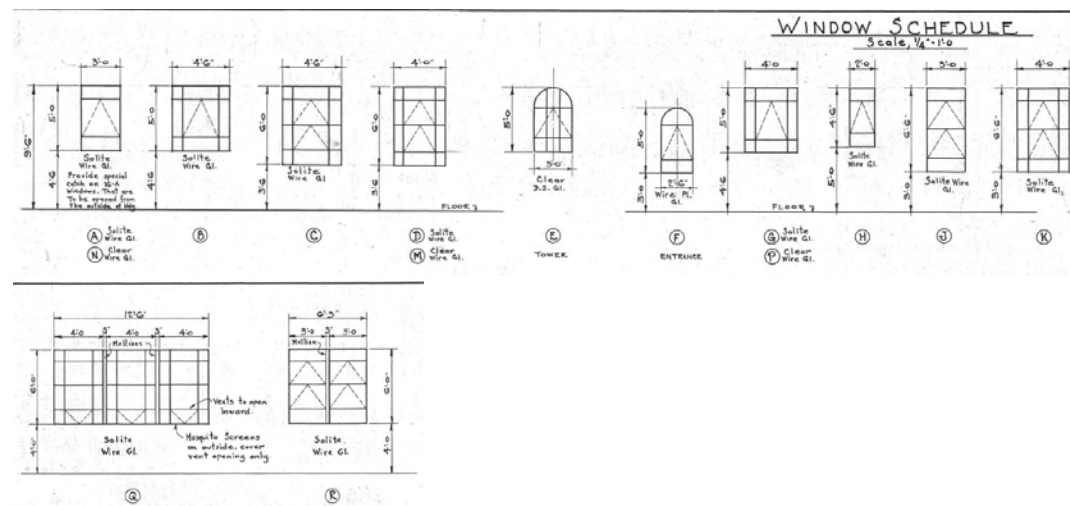


Figure 4.13 Original window schedule for Hale Alakai, dated 1929

4.1.7 C. MODERN ERA REGION: WINDOWS

- a. Restore original window treatment and historic style, wherever possible, when renovating existing buildings.
- b. Maintain or replicate horizontal banded rows of windows and uniform window and sill height.
- c. Maintain or replicate historic window type and uniformity of existing window elements, using steel awning windows (as seen on the mauka elevation) or jalousie windows (as seen on the makai elevation), (see Figure 4.14).
- d. Further research may be necessary to determine if jalousie windows located on the makai façade are original or a later renovation, (see Figure 4.15).



Figure 4.14 2-over-1 steel awning windows



Figure 4.15 Jalousie windows

4.1.8 WALL FINISHES

ALL NEW BUILDINGS:

- a. Minimize number of materials for exterior walls. The main materials for exterior walls shall be painted concrete, cement plaster or exterior finish system (EFS) for a monolithic appearance to match existing buildings. Do not use metal, vinyl, plastic siding, asphalt sheets, or false veneers.
- b. Repair damaged walls with materials that match adjacent existing finish when renovating existing buildings.
- c. Use smooth or light sand textures for plaster finishes as found on existing buildings.
- d. Where appropriate, limited amounts of complementing or accent materials such as stone, marble, glass block or painted split-face CMU may be introduced as accent features for aesthetic and/or for functional purposes.
- e. Color of walls shall be beige and/or light earth tones to match the character of existing buildings.

4.1.8 A. WOOD FRAME BUILDING REGION: WALL FINISHES

- a. Maintain clapboard siding on the façade, (see Figure 4.16).
- b. When replacing or repairing the damaged areas of the wall, refer to the original drawings to replicate the original materials to match with adjacent existing finishes.
- c. Original paint color of the building is advised for the façade treatment. Paint testing is recommended for accurate replication of color.



Figure 4.16 Clapboard siding at side elevation

4.1.8 B. SPANISH MISSION STYLE REGION: WALL FINISHES

- a. Minimize number of materials for exterior wall. The main finish for the exterior walls shall be smooth or light sand textures for plaster finishes with beige or light earth tone.
- b. Repair damaged walls with materials that match adjacent existing finish when renovating existing buildings.
- c. Use smooth or light sand textures for plaster finishes as found on other existing buildings.
- d. Color of walls shall be beige and/or light earth tones to match the character of other existing buildings.

4.1.8 C. MODERN ERA REGION: WALL FINISHES

- a. Minimize number of materials for exterior wall. The main finish for the exterior walls shall be smooth or light sand textures for plaster finishes with beige or light earth tone.
- b. Maintain or replicate plastered walls found in existing buildings.
- c. Repair damaged walls with materials that match adjacent existing finish when renovating existing buildings.

4.1.9 FLOOR FINISHES

ALL NEW BUILDINGS:

- a. Selection of flooring colors and materials are to take into consideration the colors and materials in adjacent spaces as well as LEED standards when possible. Appropriateness, durability, ease of maintenance and safety, along with aesthetics are primary considerations in the selection of materials.
- b. Repair damaged floors with materials that match adjacent existing finish when renovating existing buildings.
- c. Avoid flooring materials such as VCT that contains PVC.

4.1.9 A. WOOD FRAME BUILDING REGION: FLOOR FINISHES

- a. Restore original hard wood floors if possible or feasible when renovating the existing building. If it is infeasible other woods or laminates that appear in a similar style may be an acceptable substitution.

4.1.9 B. SPANISH MISSION STYLE REGION: FLOOR FINISHES

- a. Maintain the existing original floor tile wherever possible.
- b. Repair damaged floors with materials that match adjacent existing finish when renovating existing buildings.

4.1.9 C. MODERN ERA REGION: FLOOR FINISHES

- a. Maintain the existing original floor tile wherever possible.
- b. Repair damaged floors with materials that match adjacent existing finish when renovating existing buildings.

4.1.10 CEILING FINISHES

ALL NEW BUILDINGS:

- a. Repair damaged walls with materials that match adjacent existing finish when renovating existing buildings.
- b. Use smooth or light sand textures for plaster finishes as found on existing buildings

4.1.10 B. SPANISH MISSION STYLE REGION: FLOOR FINISHES

- a. Maintain original vaulted ceilings and exposed structural components at public entryways where extant.
- b. Restoration of the vaulted ceilings and exposed structural components at public entryways is strongly encouraged.
- c. Where still extant, historic molding and detailing should be preserved wherever possible.

4.1.11 ORNAMENTATION

ALL NEW BUILDINGS:

- a. Keep ornamentation simple and appropriate to scale and design of the building.
- b. Maintain or replicate architectural details of existing buildings where appropriate. Use ornamentation such as moldings, rafter tails, brackets, grilled vents and railing details similar to those found on existing buildings, (see Figure 4.4).
- c. Avoid “pasted on” embellishments, such as non-functional shutters, which are not found on existing buildings.

4.1.11 A. WOOD FRAME REGION: ORNAMENTATION

- a. Avoid covering, layering over, or altering existing architectural ornamentation and unique detailing present at the interior and exterior of the historic structure.
- b. Maintain architectural details of existing buildings, following the Secretary of the Interior’s Standards for treatment of original elements. Use ornamentation such as moldings, rafter tails, and bracket details similar to those found in the existing building or original building plans, (see Figure 4.17).



Figure 4.17 Engaged pilaster at exterior corners

4.1.11 B. SPANISH MISSION STYLE REGION: ORNAMENTATION

- a. Avoid covering, layering over, or altering in any way with additional material the existing architectural screens, ornamentation, and unique detailing present at the interior and exterior of the historic structure.
- b. Maintain or replicate architectural details of existing buildings. Use ornamentation such as moldings, rafter tails, brackets, grille vents and railing details similar to those found on existing buildings.

4.1.11 C. MODERN ERA REGION: ORNAMENTATION

- a. Maintain or replicate plastered ornamental grillwork below roof eave, (see Figure 4.18).
- b. Avoid covering, layering over, or altering in any way with additional material the existing architectural screens, ornamentation, and unique detailing present at the interior and exterior of the historic structure.



Figure 4.18 Grillwork detail

4.1.12 COLOR SCHEME

ALL NEW BUILDINGS:

- a. Minimize number of exterior colors. Colors for trims and moldings should be coordinated with main body color of the building and match those of existing buildings.
- b. Paints or stains should be low sheen to reduce glare or reflectivity of surface. Use semigloss, eggshell or matte finishes instead of gloss finish where practical.

4.1.12 A. WOOD FRAME BUILDING REGION: COLOR SCHEME

- a. Usage of building materials and colors should be in keeping with those established on the campus.
- b. Original paint color and finish is advised for treatment of all surfaces. Paint testing is recommended for accurate replication of color and finishes.

4.1.12 B. SPANISH MISSION STYLE REGION: COLOR SCHEME

- a. Usage of building materials and colors should be in keeping with those established on the campus. Maintain minimal number of exterior colors. Colors for trims and moldings should be coordinated with main body color of the building and match those of existing buildings.
- b. Paints or stains should be low sheen to reduce glare or reflectivity of surface. Use semigloss, eggshell or matte finishes instead of gloss finish where practical.

4.1.12 C. MODERN ERA REGION: COLOR SCHEME

- a. Usage of building materials and colors should be in keeping with those established on the campus. Maintain minimal number of exterior colors. Colors for trims and moldings should be coordinated with main body color of the building and match those of existing buildings.
- b. Paints or stains should be low sheen to reduce glare or reflectivity of surface. Use semigloss, eggshell or matte finishes instead of gloss finish where practical.

4.1.13 CONTRACT AND POLICY

ALL NEW BUILDINGS:

Implementing contracts and policies for commissioning, maintenance, and cleaning can help ensure that the campus addition retains its original functionality, environmental quality, and appearance post-occupancy. Additional LEED Campus Credits can be attained through the following contract and policy areas:

- a. EA3: Fundamental Refrigerant Management
- b. EA4: Enhanced Refrigerant Management
- c. EA6: Green Power

- d. MRc2: Construction Waste Management
- e. IEQp2: Environmental Tobacco Smoke (ETS) Control
- f. IDc1: Green Cleaning Policy
- g. It is also recommended that projects develop Indoor Air Quality Management plans for both during construction and before occupancy in order to protect the health of construction workers and occupants. These plans may also contribute to projects earning LEED credits IAQc3.1 and IAQc3.2.

4.1.13 A. WOOD FRAME BUILDING REGION: CONTRACT AND POLICY

- a. Implementing contracts and policies for commissioning, maintenance, and cleaning can help ensure that the campus retains its original functionality, environmental quality, and appearance post occupancy. This philosophy is especially encouraged for use in maintaining historic structures. When pursuing LEED certification, refer to the LEED reference guide for LEED for Building Design and Construction, LEED for Interior Design and Construction, or LEED for Building Operations and Maintenance depending on the project type to see which credits can be attained.
- b. Above LEED rating systems can be defined as:
 - i. LEED for Building Design and Construction - Buildings that are new construction or major renovation.
 - ii. LEED for Interior Design and Construction - Interior spaces that are a complete interior fit-out.
 - iii. LEED for Building Operation and Maintenance - Existing buildings that are undergoing improvement work or little to no construction.

4.1.13 B. SPANISH MISSION STYLE REGION: CONTRACT AND POLICY

- a. Refer to Section 4.1.13.

4.1.13 C. MODERN ERA REGION: CONTRACT AND POLICY

- a. Refer to Section 4.1.13.

4.2 SITE DEVELOPMENT GUIDELINES

4.2.1 SETBACKS

- a. AG-2 General Agricultural District Development Standards indicated in the LUO shall be used in determining required setbacks along the campus boundary. Setbacks of 15' and 10' are required for front and side yard conditions, respectively.
- b. The locations of future buildings will be as generally shown in the Master plan and the approved PRU. For future buildings which may be in closer proximity to adjacent properties, minimum setbacks shall be in accordance with the City's LUO provisions.
- c. Setbacks from campus roads for new buildings should be consistent with the adjacent existing buildings. New buildings shall not be closer to campus roadways than adjacent or existing structures are from roadways.
- d. Along Ala Koolau on the makai edge of the main campus, all portions of one-story buildings shall be set back a minimum of forty (40) feet from the edge of roadway.
- e. Along Ala Koolau, on the Kahuku edge of the main campus, all portions of one-story buildings shall be set back a minimum of twenty (20) feet from the edge of roadway.
- f. All portions of two-story buildings shall be set back a minimum of thirty (30) feet from the edge of roadway.
- g. Along the mauka edge of campus, portions of buildings one-story in height shall be setback a minimum of forty (40) feet from the roadway edge. All portions of buildings two-story in height shall be set back fifty (50) feet from the roadway edge.

4.2.2 OFF STREET PARKING AND LOADING

- a. Design standards for parking shall be in compliance with "Off-Street Parking Requirements" described in the LUO.
- b. Adequate number of parking spaces shall be provided in accordance with LUO Table 3.1A during all phases of campus development. See the accompanying document "Windward Community College Parking Implementation Plan" for parking and loading provisions for each phase. Design standards for loading areas shall be in compliance with "Off-Street Loading Requirements" described in the LUO. Adequate number of loading spaces shall be provided during all phases of campus development.
- c. Requirements for accessible parking spaces, routes and passenger loading areas shall be in compliance with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).
- d. Screen views of parking, loading and service areas from adjacent public or residential uses by providing landscape screening, fencing, walls, or berms.
- e. Refer to Section A-4 in the PRU, Volume 1, for a summary of other applicable requirements pertaining to parking and loading.

- f. Encourage alternative forms of transportation by providing preferred parking for carpools, low-emitting and fuel efficient vehicles and/or providing an alternative fueling station on campus, as well as by providing bicycle racks and access to shower facilities where appropriate. These strategies may contribute to LEED Campus Credits SSc4.1, SSc4.2, SSc4.3, SSc4.4.

4.2.3 ROADWAYS AND UTILITIES

- a. All new roadways and utilities construction shall comply with City and County of Honolulu Department of Public Works standards. All existing non-standard roadway construction shall be renovated to comply with City standards.
- b. Non-standard roadways will be improved as infrastructure is constructed for new buildings. Implementation and phasing of roadway improvements shall be coordinated with adjacent building projects and in accordance with site improvements shown in Table 1 Implementation Plan.

4.2.4 PEDESTRIAN CIRCULATION

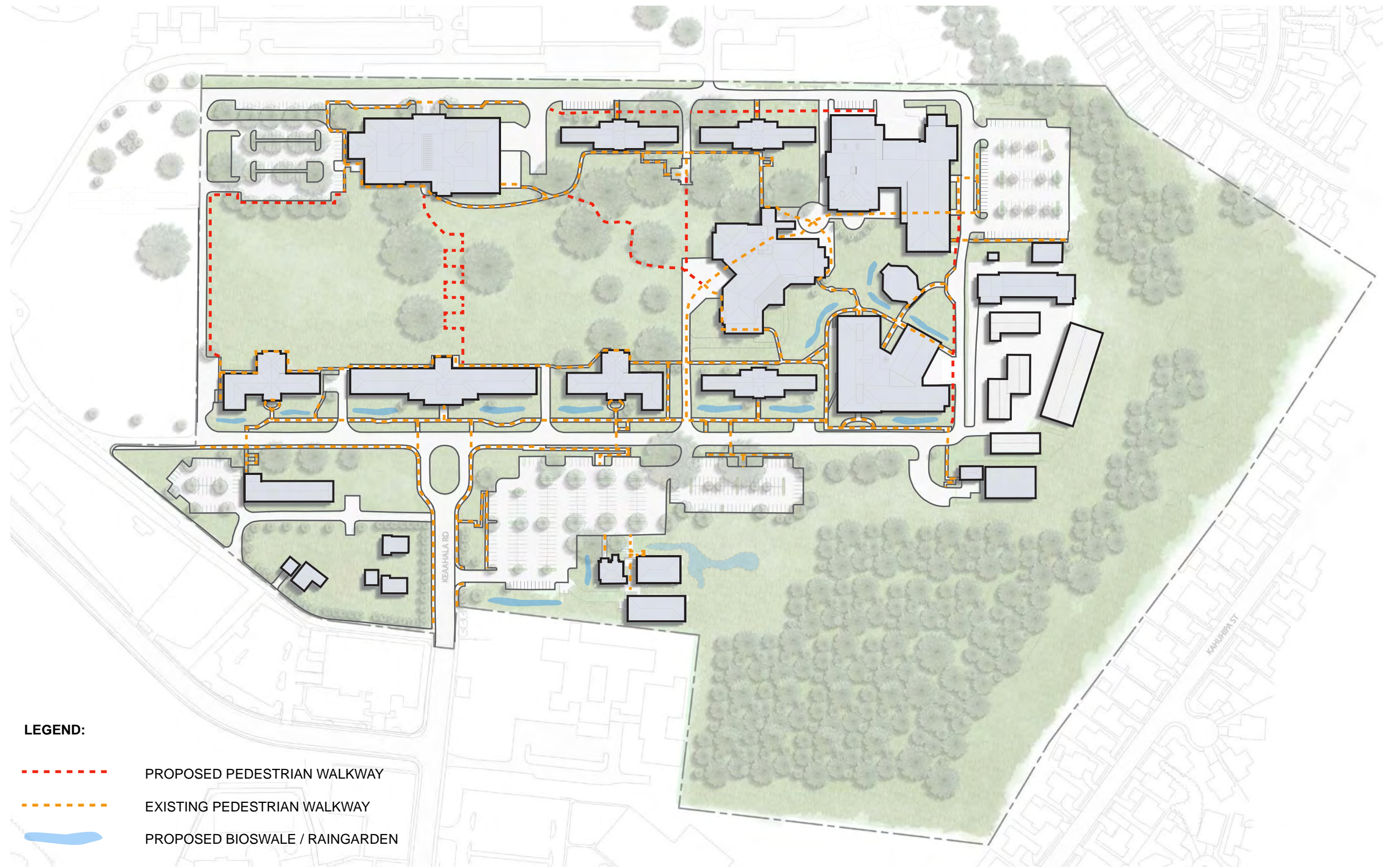
- a. Elements in the campus' pedestrian circulation system shall be constructed in compliance with ADAAG requirements. Accessible routes shall connect all buildings, parking and bus drop-off areas, (see Figure 4.20).
- b. With regard to ADA guidelines, a 10:1 slope is recommended throughout appropriate areas of the campus so as to enhance ease of movement and minimize the need for railings. If railings are deemed necessary by the design team, it is recommended that low handrails are selected to maintain overall visual compatibility throughout the site. The finish shall be olive green in color and low sheen to reduce glare or reflectivity of surface.
- c. Walks connecting buildings shall be a minimum of 6'-0" wide. Sidewalks along campus roadways or adjacent to parking areas shall be a minimum of 4'-0" wide.
- d. A system of covered walkways, where indicated between buildings, shall be provided along accessible routes.
- e. Covered walkways columns shall be CMU or concrete with plaster finish to match buildings. Roofs shall be a flat framed structure and finished with built-up roofing. The spacing of columns shall allow a minimum walkway width of six feet clear.

4.2.5 OPEN STORAGE AND SERVICE AREAS

Open storage and services areas shall be screened from public view by a fence, wall, or landscaping. Waste containers storing solid waste prior to disposal shall be contained within enclosures. It is also recommended that recycling methods be utilized to minimize the quantity of solid waste generated including composting of landscape maintenance debris. Designating space for collection and storage of recyclables may contribute to LEED Campus Prerequisite: MRp1: Storage and Collection of Recyclables.

4.2.6 MISCELLANEOUS CONSTRUCTION / STRUCTURES

- a. Place miscellaneous construction or structures along the periphery of main campus and away from public view, when possible.
- b. Dish antennae, as required for communication and support of curriculum, are to be located away from the main campus at the southwest corner of the site near the Automotive facilities.
- c. A wind generator may be erected near agriculture plots along the northwest boundary of the campus. On site renewable energy may contribute to LEED Campus Credit EAc2.



LEGEND:

- PROPOSED PEDESTRIAN WALKWAY
- EXISTING PEDESTRIAN WALKWAY
- PROPOSED BIOSWALE / RAINGARDEN

Figure 4.20 Pedestrian circulation path



Figure 4.30 Overall campus tree map

4.3 LANDSCAPE GUIDELINES

The campus is located on the windward side lower slopes of the Ko’olau mountain range. The majority of the campus is located on the slopes except for some flat areas near the entry and lower campus. Existing landscape is characterized by large open grass areas with many large mature trees, palms, miscellaneous tropical shrubs and medium to large size trees sparsely planted near the existing buildings and in the parking areas.

Large mature Banyan trees line along the outer perimeter of Ala Koolau Road. Many of those Banyan trees are overgrown and severely pruned. A detailed tree report should be prepared by a qualified certified arborist to provide a comprehensive tree assessment. Based on the tree assessment, tree disposition plans should be developed to plan for replacement of the trees before it shows the sign of decline or becomes hazards. There are some clusters of the several palm trees along inside perimeter of Ala Koolau. Overall large open grass areas, mature trees and palms are found commonly throughout the campus. There are very little groundcover, shrub, or accent trees.

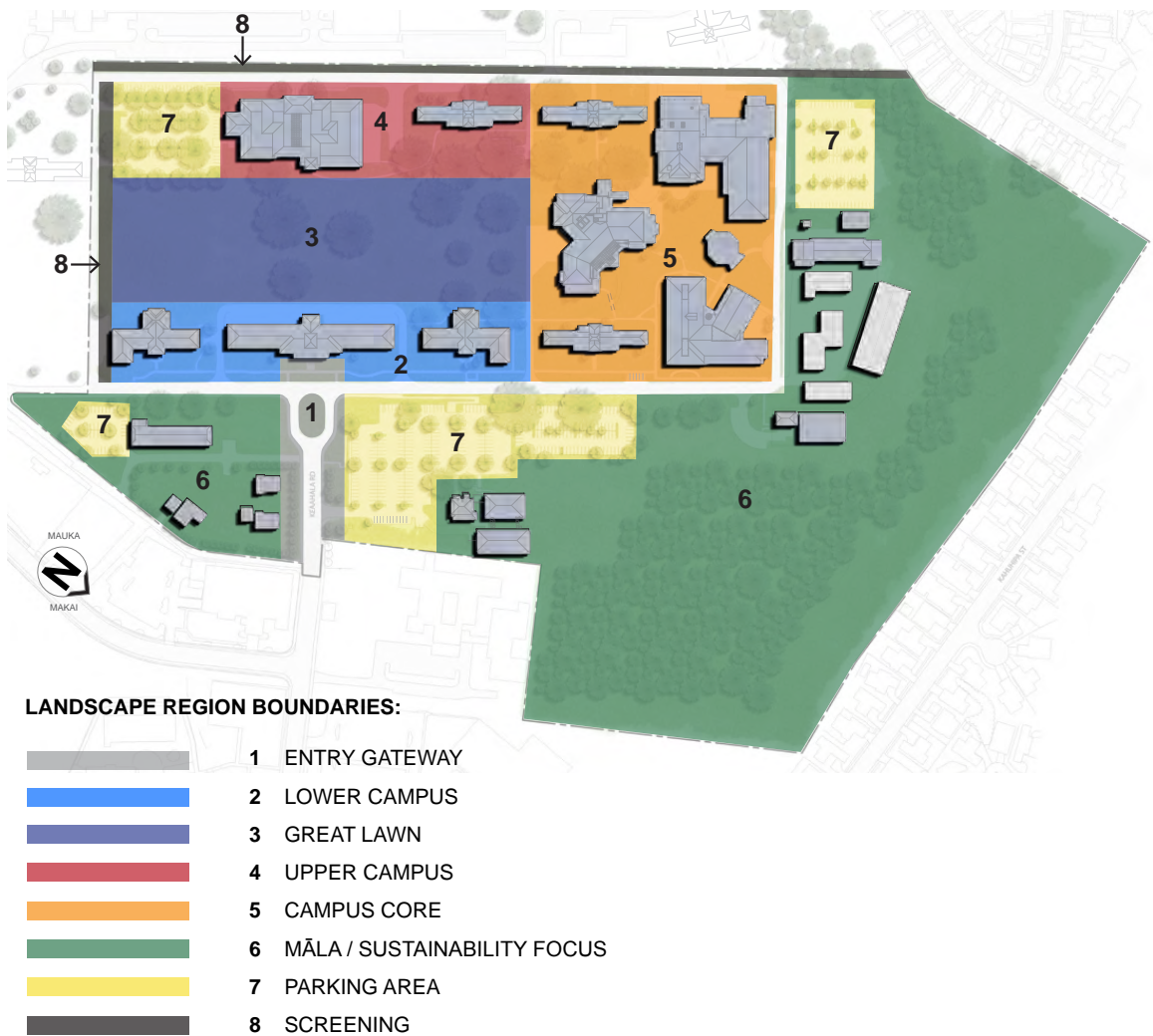


Figure 4.31 Landscape region boundaries

Currently the existing campus can be divided into six (6) major landscape zones: Entry Gateway; Lower Campus; Great Lawn; Upper Campus; Campus Core; and Mala/Sustainability areas (see Figure 4.31). Buildings and parking areas are spread out along Ala Koolau Road. In general terms, the proposed ultimate landscape plan calls for retaining the character of the existing campus. The majority of the campus is to remain primarily grassed open spaces between buildings. Large existing canopy trees are to be protected as much as practicable to maintain the existing landscape context. It is recommended that the areas adjacent to and surrounding each building and parking be landscaped utilizing ground covers, shrubs, and ornamental trees to provide an attractive setting for each building, provide a visual definition between campus structures and the central campus area, and incorporate green infrastructure such as bioswale and rain garden to help manage drainage stormwater runoff. Refer to section 2.0, Design Principles and Controls for further guidance on open space requirements.

It is important that the new landscape blend in with the unique environment of the windward coast of Oahu and thrive in the microclimatic conditions. This can be done by restoring native flora, removing unwanted trees, and preserving existing trees where practicable. Also, to conserve water by taking advantage of the area's climate and abundant rainfall, the Design Guidelines recommend hardy species for the majority of landscaping requiring only temporary irrigation and drip irrigation for a few selected areas. The recommended plant materials are not intended to be limited to the species indicated below. See the Ultimate Landscape Plan Plant List, Appendix A5, for additional species that will be acceptable.

In order to realize the landscape concept for the campus, the following landscape design principles, criteria and recommended materials shall be applied in the development of the landscape design for specific projects. Refer to the Landscape Plan (Figure 4.30), for the location of corresponding planting treatments described in items 4.3.1 through 4.3.8 below.

4.3.1 ENTRY GATEWAY (KEAAHALA ROAD)

- a. Trees and Palms: The existing trees and palms along Keaahala Road and Royal Palms in front of Hale Alaka'i provide the major landscape elements. No major plantings of trees or palms are required.
- b. Shrubs and Groundcovers: Areas around the entry sign should be planted with flowering native shrubs and groundcover that are naturally found in the windward coast of Oahu such as Beach Naupaka, Native Hibiscus, Pohinahina, Aki Aki, and Uki Uki.

4.3.2 LOWER CAMPUS LANDSCAPING (HALE KUHINA, HALE ALAKA'I HALE NA'AUAO)

Use planting, where possible, around buildings and parking areas to soften their effect and to provide a buffer and transition from one building to another.

- a. Trees and Palms: Native and flowering trees are recommended as accents or focal points. Included are Kou, Milo, Kukui, Manele, Lonomea, Plumeria, and Loulu. As a transition to the central campus area, single-trunked palms such as Alexander Palm, Foxtail Palm, Manila Palm in an informal arrangement are recommended.

- b. Shrubs and Groundcovers: At the building foundation, a planting of shrubs and ground covers act as a transition from the structure to the rest of the campus as well as filtration for rainwater runoff. Plant materials such as Monstera, Hibiscus, Nanu, Ti, Red Ginger, Heliconia, Pili, and Lauae fern should be in masses or rows, (not individually spaced).

4.3.3 GREAT LAWN (CENTRAL CAMPUS)

Landscape enhancement in this area is limited to lawn area restoration, introduction of shade tolerant native and adoptive plants near seating areas under the existing trees, and additional canopy trees and shrub to frame the lawn area and provide screening from the adjacent State Hospital development. Manicured and well-maintained open grass areas bordered by accent planting will enhance historic character of areas as well as adding to the aesthetics and pedestrian interests.

- a. Trees and Palms: The existing trees in the central campus area provide the major landscape elements. No major plantings of trees or palms are required.
- b. Shrubs and Groundcovers: Areas beneath existing tree canopies should be covered with mulch or shade tolerant grass such St. Augustine. Adjacent to special locations like sitting areas, groundcovers such as Pothos, Maile, Mondo Grass, and variety of ferns are recommended.
- c. To retain clear visual access throughout the central campus area, no major shrub massing is proposed.

4.3.4 UPPER CAMPUS LANDSCAPING (HALE AKOAKOA)

Use planting to highlight entry points and access and improve aesthetics around the building to soften their effect and to provide a buffer and transition from Great Lawn and parking. Provide green infrastructure to capture the runoff from the building and parking.

- a. Trees and Palms: Native trees are recommended as accents or focal points. Included are Ohia, Loulu, Kukui Sandalwood, Ohe, Hapuu.
- b. Shrubs and Groundcovers: At the entry and access route, provide a planting of shrubs and ground covers which act as a transition to the building from the rest of the campus. Shrubs such as Kului, Ulei, Mountain Naupaka, Philodendron, and Hibiscus (Hibiscus sp.) should be planted in masses or rows, (not individually spaced). Groundcover should include Maile, varieties of ferns, Iliee, and Mondo Grass.

4.3.5 CAMPUS CORE LANDSCAPING

The area is densely built and heavily used compared to the rest of the campus. Providing screening, transition, and stormwater management are key for the area. Use planting to guide foot traffic, create foundation planting for the buildings, provide buffer and transition zones between the buildings, and incorporate green infrastructure to manage the runoff from the buildings.

Landscape improvements should be designed to reduce maintenance costs while still providing for functional planting requirements such as soil stabilization, energy conservation, aesthetics, etc. Open grass areas in the area function as pedestrian circulation for students to move from one building to another. Planting beds should be incorporated with green infrastructure to manage runoff from the buildings and carry to the drainage basin located makai side.

- a. **Trees and Palms:** Small trees and/or palms provide a vertical accent. Native trees that provide shade are to be used to create outdoor seating and gathering opportunities for students. Trees that are recommended in the area include Kou, Milo, Koaia, Hala, Ohia, Loulu, Kukui Sandalwood, Ohe, and Hala.
- b. **Shrubs and Groundcovers:** Shrub and groundcover planting should be incorporated as part of Bioswale or rain garden. At the entry and access route, provide a planting of shrubs and ground covers which act as a transition to the building from the rest of the campus and function as storm water filtration. Shrubs such as Kului, Nanu, Native Hibiscus, Heliconia, Red Ginger, and Pohinahina should be planted in masses or rows (not individually spaced). Groundcover should include Carex, Pili, Liriope, and Mondo Grass
- c. **Water efficient and sustainable landscaping** is to be provided at all unpaved areas.

4.3.6 MALA/SUSTAINABILITY AREAS

The existing open spaces to the north side of the campus bordering the residential areas are to be kept generally open to allow for screening for adjacent homes, preserve the existing surface drainage system, and utilized for sustainable practices such as farming, outdoor classroom, green infrastructure, and cultural practices.

Removal of overgrown non-native plant materials, and replanting with native trees and grass such as Pili and Aki Aki should be considered to enhance the sense of place and aesthetics of the area by creating accent and border. Native canopy trees will provide shelter for farming, outdoor classroom, and passive recreation use in grass areas. Native grass can be used to create a border and park-like environment. Native grass and vegetative swale can be provided to direct runoff from upper campuses to the existing drainage basin. Native grass does not have to be mowed. Taller native grass with some rock boulders and concrete benches will not only increase the usability, foot traffic and activities in the area but also improve aesthetics.

- a. **Trees and Palms:** Native and canoe trees that are recommended to be used in this area include Ulu, Hala, Hau, Mamaki, Naio, Noni, Kukui, and Hapuu.
- b. **Shrubs and Groundcovers:** Shrub & groundcover in this area should reflect culture and/or function as green infrastructure. Plants such as Ti, Taro, Ape, Bacopa, Akulikuli, Carex, Ahuawa, Pili, and Aki Aki should be used.

4.3.7 PARKING AREAS

Parking areas shall have shade trees to provide visual and aesthetic relief. It is recommended that species of trees be limited to provide consistency and unity while maintaining some varieties of species per different landscape zones.

- a. Trees and Palms: For parking areas, canopy trees such as Kamani, Monkeypod, Rainbow Shower, Kou, Pink Tecoma or Hong Kong Orchid are recommended. Size and location should conform to current LUO requirements. This strategy may contribute to LEED Campus Credit SSc7.1 when used as part of a strategy to shade campus hardscapes.
- b. Shrubs and Groundcovers: To screen parking areas, shrub hedges should be installed. Plants should be planted to meet LUO requirements. Shade tolerant ground covers should also be used. This strategy may contribute to LEED Campus Credit SSc6.1 when used as part of a strategy to reduce impervious ground cover and increase on-site infiltration.
- c. Provide canopy trees in all parking areas per LUO requirements.

4.3.8 SCREENING

A visual and/or physical buffer is proposed along the mauka, eastern and western boundaries of the campus. Combination of canopy trees and hedge or use of dense palms is recommended.

- a. Trees and Palms: Pink Tecoma, Koaia, Bamboo, Areca Palms should be used in combination with the following shrubs or groundcover.
- b. Shrubs and Groundcovers: Shrubs should be one-gallon minimum and planted in a continuous mass with about 18" spacing. Recommended plants are Naupaka, Monstera, Natal Plum, Hawthorn, Hibiscus, Heliconia, or Red Ginger. Groundcovers such as Laua'e Fern, Liriope, Uki Uki, Carex, or Akia are suggested.

4.3.9 IRRIGATION

The area received abundant rain water. To conserve the island's limited resources, the Master Plan recommends the use of a quick coupler system connected to the potable water source throughout the campus which provides water source for irrigation only when needed. On-site water catchment system such as rainwater tank or rainwater pillow may be installed per building to capture runoff from the roof, which can be connected to a series of drip irrigation system that distribute the water throughout the enhanced landscape areas around the building or to be used for farmed land.

If a permanent irrigation system with potable water source is desired, the system should be connected to a smart controller system with flow sensor which monitors water leak and ET-sensor which regulates the amount of water used based on the moisture readings from on-site weather stations. Sprinkler system should be high efficiency rotor or rotator in grass area and drip system in groundcover.

4.3.10 SUSTAINABILITY

Plants selected for the college should be hardy species which thrives in the unique microclimate of the campus. Plants should sustain itself without excessive use of potable water or chemical. Use of landscape chemicals such as fertilizers and pesticides should be limited. The recommended plant materials can be found in the Ultimate Landscape Plan Plant List, Appendix A5.

The Master Plan recommends bioswales and rain gardens to be incorporated throughout the campus. Bioswale and rain gardens will not only filter the water and help recharge the groundwater but also provide enhanced aesthetics and educational opportunities. Bioswale and rain gardens can be associated with the existing building or pathway to capture runoff directly before going into the area drain system, (see Figures 4.32 and 4.33).

To take advantage of the area's abundant rain water, installing an on-site rain catchment system which maximizes rainwater capture on campus and reduces potable water use is strongly encouraged. Water from rain catchment system can be used for farming and cultural practices, for example, Taro Loi. These strategies may contribute to LEED Campus Credit WEC1: Water Efficient Landscaping.

Protecting and/or restoring the site's natural features, as well as implementing BMP's to capture and treat storm water on-site helps preserve the campus' rural character, conserves valuable resources, and may contribute to LEED Campus Credits for SSc1, SSc5.1, SSc5.2, SSc6.1 and SSc6.2.



Current condition A



Proposed condition - Bioswale

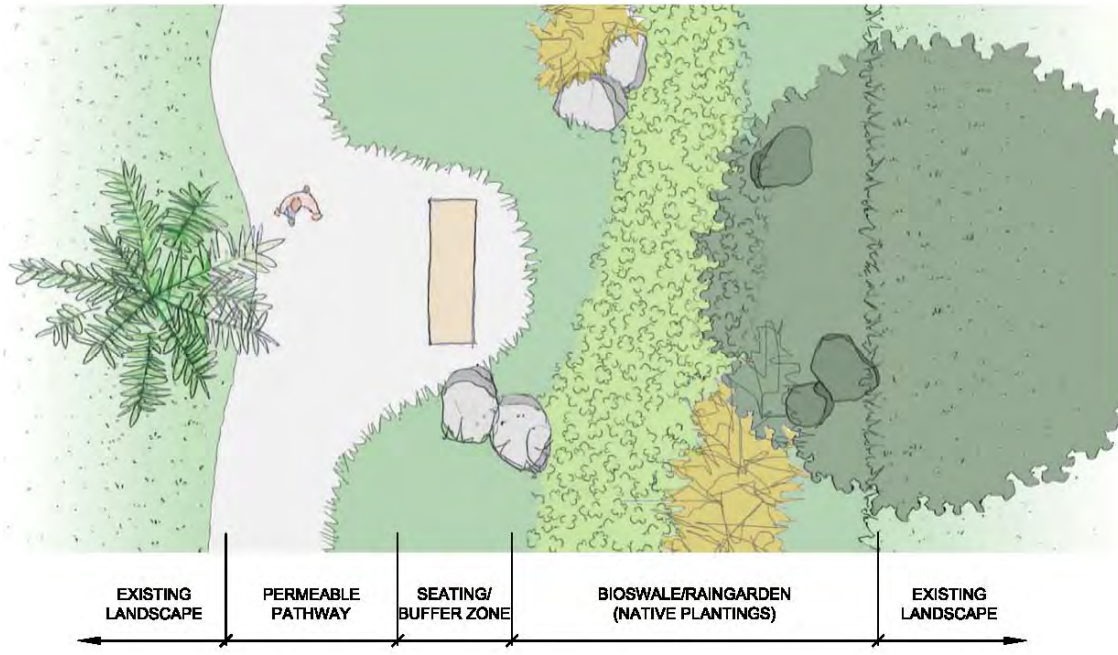


Current condition B

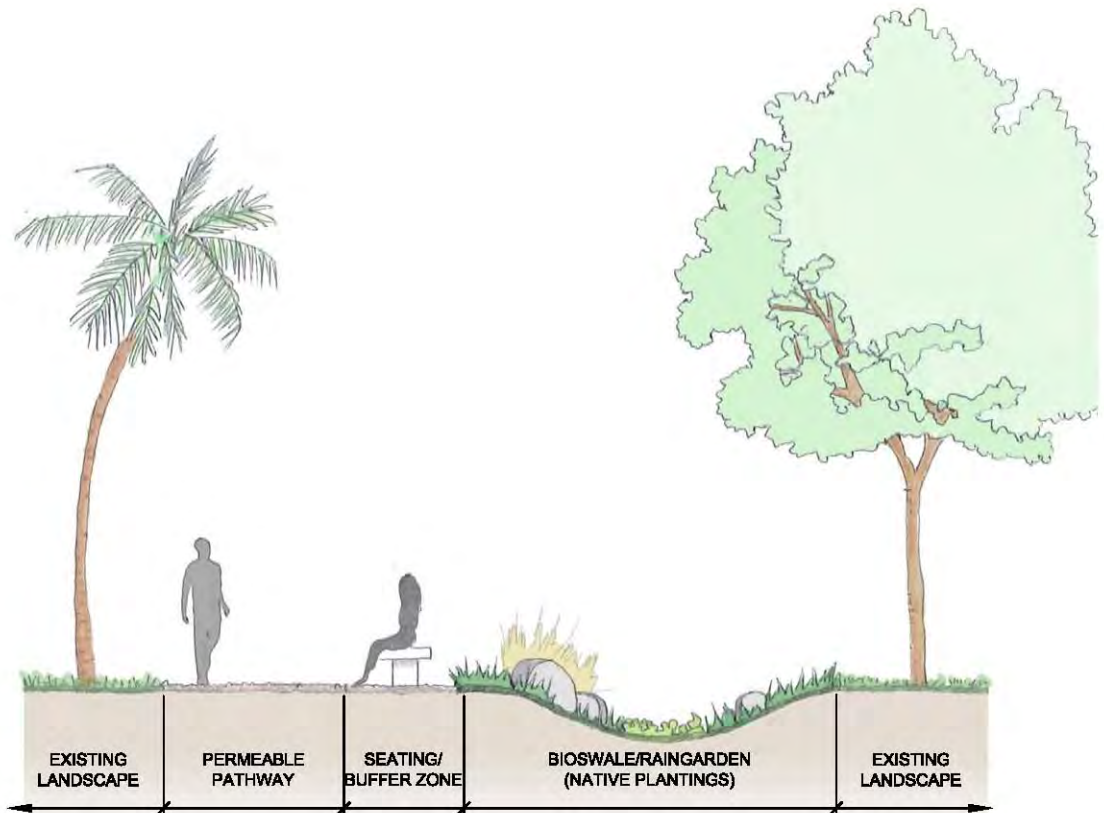


Proposed condition - Rain bioswale

Figure 4.32 Bioswale example renderings.



Pathway, Seating Area, and Bioswale plan



Pathway, Seating Area, and Bioswale typical section

Figure 4.33 Pathway, seating area, and bioswale typical plan and section

4.4 SIGNAGE GUIDELINES

The signage system will be the primary means of communicating information, direction, and identification of facilities to those unfamiliar with the campus area. The intent of the signage plan is to provide guidelines toward the development of a uniform signage system that will effectively convey information and contribute to the visual enhancement of the campus.

4.4.1 SIGNAGE GUIDELINES INTENT

These guidelines are intended to describe the general parameters that will meet the objectives of the signage system. The aim is not to dictate or specify a rigid design for signage that must address a number of unknown variables at the present time. The guidelines are intended to be flexible to allow for design refinements when detailed requirements, such as exact sign locations and messages, are determined during the implementation of the campus signage program.

OBJECTIVES

- Clarity, conciseness and consistency of messages to minimize the total number of signs and visual clutter.
- Proper design and placement of the signs to address vehicular and pedestrian traffic.
- Aesthetic and physical compatibility with the existing environment by complementing the character and design of the architecture and landscaping.
- Economy of construction, durability and ease of maintenance.
- Continuity of design standards for all subsequent signage needs.

4.4.2 SIGN TYPES

The following sign types represent a significant portion of the signage system, (see Figures 4.41 and 4.42). Additional special signs need not be restricted to these types.

Future signs with special requirements or restrictions shall be developed as needed, but shall be compatible with the overall signage program by complying with these guidelines.

The generic designs indicate the basic character and intent of the signage types. Detailed design work will be required when the overall campus signage program is implemented.

TYPE 1: ENTRY SIGN

The entry sign is for overall identification of the campus. This sign shall be located at the major vehicular entrance to the campus. The design shall be compatible with the overall architectural design of the buildings.

Basic Characteristics:

- Support structure of concrete or plastered CMU
- Lettering, graphics and/or symbols out of cast bronze
- Lighting shall be from an external source

TYPE 2: FREE-STANDING BUILDING IDENTIFICATION SIGN

Type 2 signs are used to identify the campus' main building facilities. The design character shall be similar to Sign

These signs shall be freestanding and located near the main entrances to all buildings.

Basic Characteristics:

- Support structure of concrete or plastered CMU.
- Lettering, graphics and/or symbols out of cast bronze.
- Larger signs near entrances along roadways; smaller ones near entrances on the campus' main open space.
- Lighting shall be from an external source.

TYPE 3: BUILDING-MOUNTED SIGNAGE

Type 5 signs are smaller versions of Type 4, and shall be used primarily for pedestrian orientation. A minimum number of sizes for the sign plaque shall be used.

Basic Characteristics:

- Support structure of concrete or plastered CMU.
- Sign plaque or head made of aluminum or "corian".
- Information to be silkscreened.
- Lighting shall be from an external source.

TYPE 4 CAMPUS DIRECTORY

These freestanding signs will feature graphics such as campus maps for directory and orientation purposes. Type 4 signs will be located primarily along pedestrian routes.

Basic Characteristics:

- Support shall be aluminum or galvanized steel post
- Sign structure of aluminum.
- Information and graphics shall be subsurface silkscreened on clear plexiglass with ultraviolet ray blocking capabilities.
- Where provided, simple and easy-to-read, diagrammatic maps shall be oriented to the site.
- Directories shall be internally illuminated.

TYPE 5: DIRECTIONAL SIGNS

Type 5 signs shall be primarily for providing directional information along vehicular and pedestrian ways. These signs should be compatible with Sign Type 4. There may be variations in the sizes of the sign plaque, due to the messages, but 2-3 standard sizes should be the maximum.

Basic Characteristics:

- Support shall be aluminum or galvanized steel post
- Sign structure of aluminum.
- Information and graphics shall be subsurface silkscreened on clear plexiglass with ultraviolet ray blocking capabilities.
- Information shall be silkscreened. Reflective graphics shall be used for vehicular type signs.

TYPE 6: POST SIGNS

These signs may be very prevalent on campus. These are traffic control, regulatory and warning signs (such as “Stop”, “Speed Limit”, etc.) and shall be used primarily along vehicular ways (See Figure 4.40). Type 6 signs will mainly incorporate standard traffic messages in standard symbols and shapes. Sign placement shall be coordinated with the civil engineer for each project.

Basic Characteristics:

- Support shall be aluminum or galvanized steel post.
- Sign plaques shall be aluminum or galvanized metal.
- Information shall be silkscreened.

TYPE 7: SMALL POST SIGNS

Type 7 signs shall be similar to Sign Type 6, except smaller and shorter. These signs shall be used as required for information, warnings, restriction or miscellaneous purposes.

Basic Characteristics:

- Support shall be aluminum or galvanized steel post.
- Sign plaques shall be aluminum or galvanized sheet metal.
- Information shall be silkscreened.

4.4.3 GENERAL SIGNAGE CHARACTERISTICS

TYPESTYLE

The typestyle shall be of weight and character that will ensure readability and be legible for its intended use. Lettering shall be a serif typestyle for readability and compatibility with campus architecture. The standard typestyle shall be “Optima” in regular or bold type.

SYMBOLS

All symbols used in this sign system shall conform to the international standards and be in compliance with all codes and regulatory agencies. Customized symbols may be used, if they assist in conveying the required message. Numerical or other graphic elements may also be used.

COLORS

A color coordinated system should be standardized to provide clarity to both vehicular and pedestrian traffic. Sign colors should be compatible with the overall color scheme for campus buildings. A high level of contrast between the background and information should be a standard, to ensure readability and legibility.

LETTER SIZE

Letter size shall be determined by the optimum viewing distance for a sign. For every 35 ft. of distance, a minimum of 1” upper case height of the letter shall be used. However, other factors affect the overall legibility of a sign, such as environmental conditions (light, color, etc.) and sign location. All conditions should be addressed in making a final determination for letter size.

SIGN FACE LAYOUT

A proper selection of information and graphic elements, in regards to their sizes and arrangement, is very important to the effectiveness of the sign. All messages should be clear and concise and all layouts for each sign type should maintain consistency throughout.

SIGN SIZE

Sign sizes shall be determined by the information required and also the typeface size to ensure readability. Variations in plaque sizes within a sign type should be kept to a minimum for economy and consistency of design. Plaque sizes shall be standardized to modular dimensions.

MATERIALS

Signs shall be constructed with the materials indicated for the various sign types. Other materials, where appropriate, shall be best suited for the signs' intended use and complement the architectural quality of the campus. Consideration shall be given to weathering conditions, maintenance, economics, practicality and aesthetics. All materials used shall have a finished appearance; no unfinished surfaces shall be visible. Wood or wood by-products shall not be used as a final material in the construction of a sign.

SIGN PLACEMENT

The locations for the major sign types (Types 1 thru 5) shall generally follow the Signage Plan, shown on Figure 4.40. Where required, supplementary signs of the types indicated shall be provided in addition to those shown on the Signage Plan. Post Signs, (Types 6 and 7), will be provided as needed in accordance with traffic safety standards or functional requirements.

All signs should be placed or installed for maximum visibility and legibility for the intended use. No sign shall be placed as to obstruct or create a hazardous condition due to its size, shape or color. Roadway signs should be set back from the curb edge a minimum of 24", which may vary due to site conditions. Uniform mounting heights established for each sign type shall be maintained.

4.4.4 SIGNAGE/DISPLAY FOR LEED INNOVATION IN DESIGN

Incorporate a comprehensive educational signage that explains the sustainable features of the building/campus to help earn LEED campus credit for IDc1. Per the LEED Reference Guide for Green Building Design and Construction v2009, it should educate occupants and visitors on the benefits of green buildings. Examples include windows to view energy-saving mechanical equipment, signs that call attention to water-conserving landscape features, and digital screens showing real-time energy consumption or building performance data.



- TYPE 1:** ENTRY SIGN
- TYPE 2:** BUILDING SIGN
- TYPE 3:** DIRECTORY
- TYPE 4:** DIRECTIONAL SIGN

Figure 4.40 Signage Plan

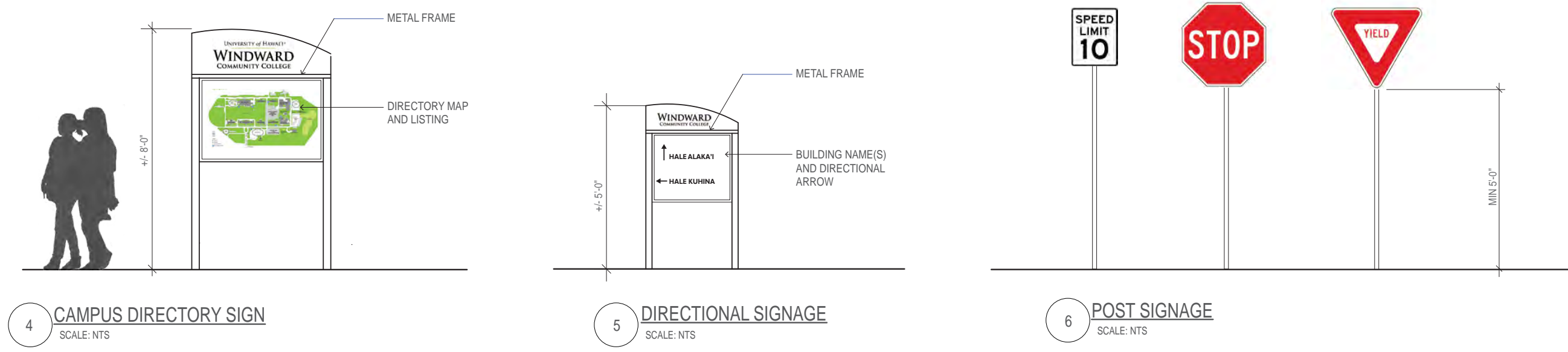
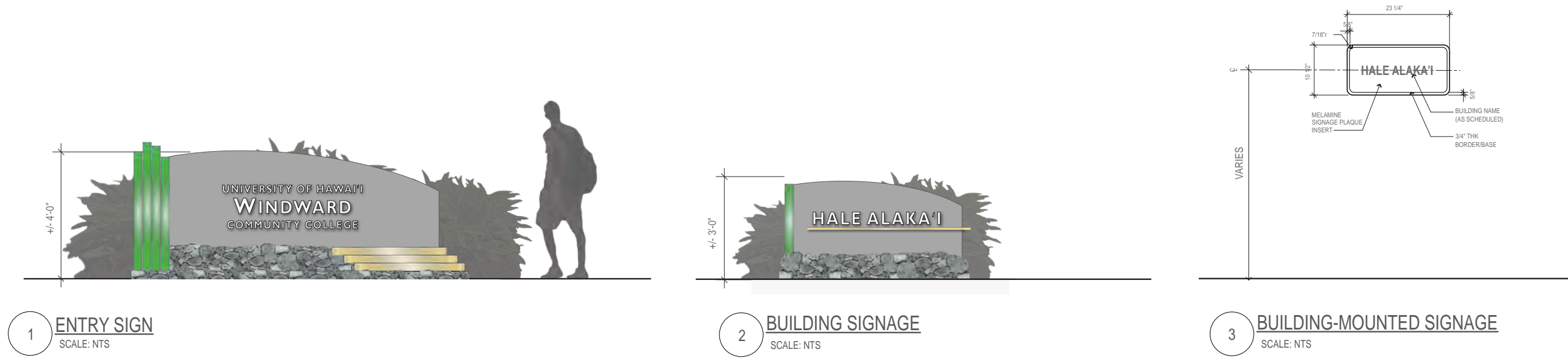
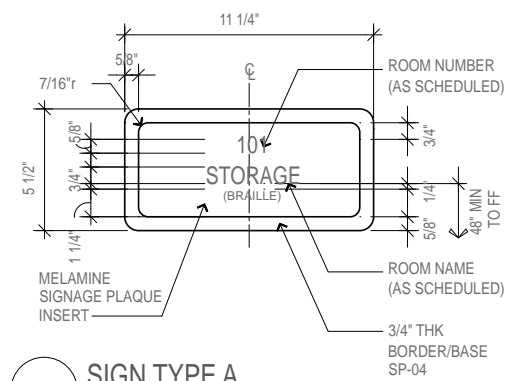
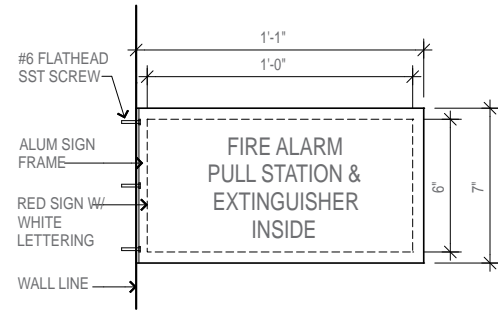


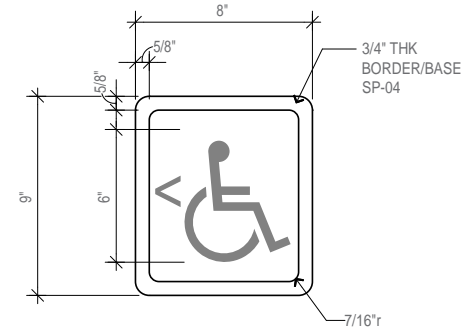
Figure 4.41 Signage Types - Exterior



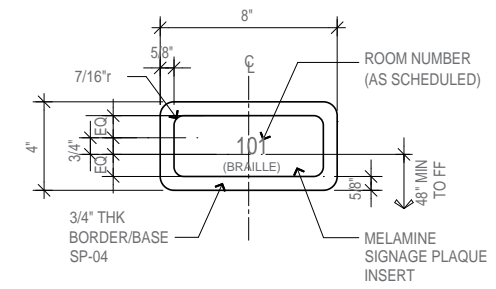
1 SIGN TYPE A
SCALE: NTS



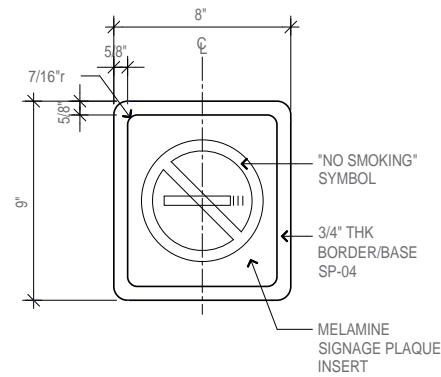
2 SIGN TYPE B
SCALE: NTS



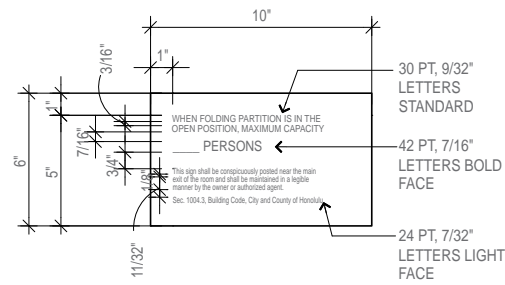
3 SIGN TYPE C
SCALE: NTS



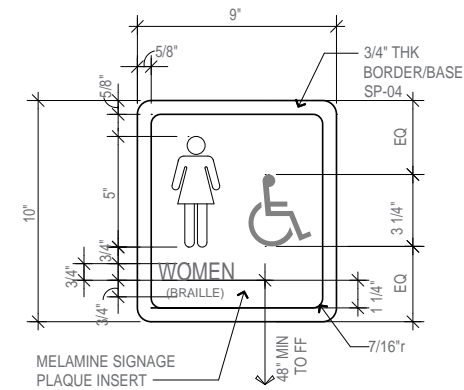
4 SIGN TYPE D
SCALE: NTS



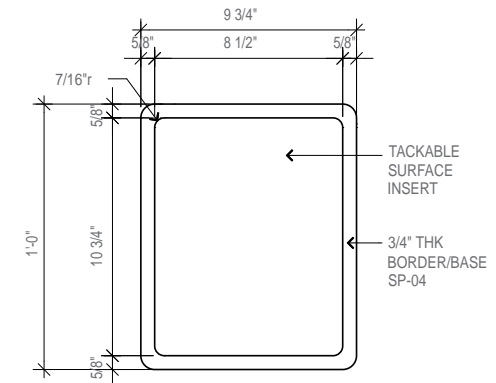
5 SIGN TYPE E
SCALE: NTS



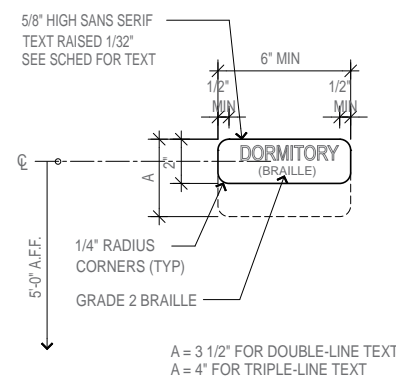
6 SIGN TYPE F
SCALE: NTS



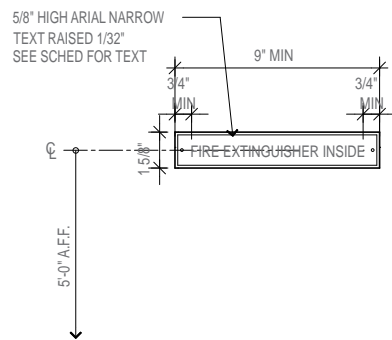
7 SIGN TYPE G (MEN SIM.)
SCALE: NTS



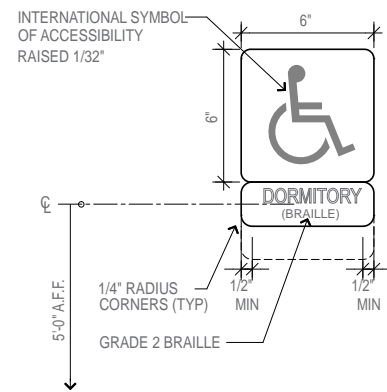
8 SIGN TYPE H
SCALE: NTS



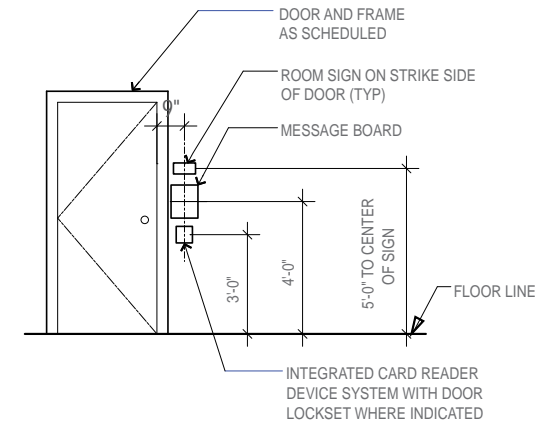
9 SIGN TYPE I
SCALE: NTS



10 SIGN TYPE J
SCALE: NTS



11 SIGN TYPE K
SCALE: NTS



12 SIGN MOUNTING HEIGHTS
SCALE: NTS

Figure 4.42 Signage Types - Interior

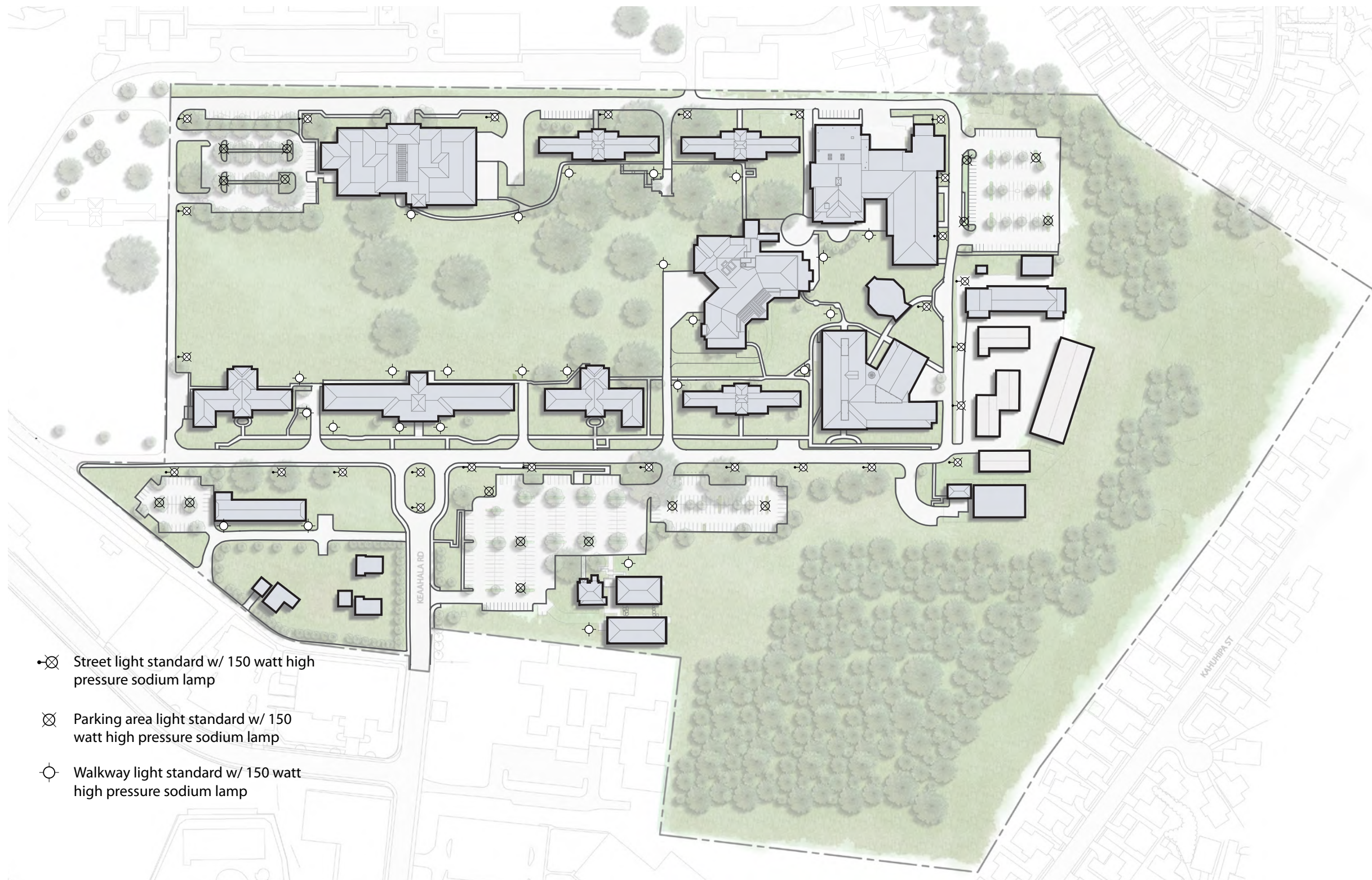


Figure 4.50 Lighting Plan

4.5 MECHANICAL, ELECTRICAL, AND PLUMBING GUIDELINES

4.5.1 MECHANICAL

The goals and objectives are to develop a mechanical design that is efficient, economical, easily maintainable, reliable, and compatible with the WCC campus systems.

4.5.2 ELECTRICAL

GENERAL LIGHTING

Lighting fixtures are to be low maintenance, efficient, and of a reasonable number and types of luminaries. The desired effect should be a subdued level of lighting throughout the campus that will also satisfy the requirements for public safety and security. In support of LEED standards, LED and other high efficiency lighting fixtures and controls are preferred.

OBJECTIVES

- Provide lighting that complements the campus' rural character yet is energy efficient.
- Provide consistent light fixtures styles throughout the campus to accentuate appropriate architectural features.
- Promote public safety and campus security.
- Provide energy efficient design that promotes energy conservation during long term use.
- Avoid glare and light spillage from exposed luminaries.
- Where appropriate and required, lighting levels will be increased to illuminate areas such as roadways, parking areas and athletic facilities. Uniform coverage is not desired.
- Shielded luminaries shall be used to eliminate glare into adjacent properties, and are required for State-funded projects.

SITE LIGHTING

The intent of the site lighting plan is to provide a consistent night time ambiance that is compatible with the rural feel and character of the campus. Site lighting types and locations shall generally follow the Site Lighting Plan, (see Figure 4.50).

The basic types of freestanding exterior light fixtures include

- (1) Pole-mounted fixtures about 14 feet high to illuminate the campus walkway system;
 - (2) Pole-mounted fixtures 25 feet high to illuminate parking areas and campus roadways;
 - (3) Pole-mounted fixtures 25 feet high to illuminate play courts; and
 - (4) Shielded fixtures for accenting architectural features.
- a. Areas used extensively at night for access, walks, interior courtyard, and parking areas shall be illuminated sufficiently for safety, especially near Hale La'akea and adult education classroom building locations that are occupied at night.

- b. Light fixtures that are visible, whether mounted on a building, pole, or used in the landscape as pathway lights, shall complement the architectural character of the campus.
- c. Consistent fixture types or styles shall be used throughout the campus for design continuity and maintenance consideration.
- d. All exterior lighting shall be shielded in a manner which eliminates glare into surrounding properties. Cut-off type fixtures shall be used to achieve the proper shielding when lighting areas near adjacent properties.
- e. Energy-efficient light sources with good color rendition such as high pressure sodium, low-wattage florescent, or LED-type lamps shall be used for exterior fixtures. Wattage, spread of illumination and spacing of fixtures shall be designed to achieve a subdued level of lighting consistent with the rural setting of the campus. Reducing light trespass to levels permitted for Lighting Zone 2 (per ANSI/ASHRAE/IESNA Standard 90.1-2007), may contribute to LEED Campus Credit SSc8.

BUILDING LIGHTING

- a. Where appropriate, fixtures integrated with the design of buildings, such as wall lights and soffit lights, may be used for functional or aesthetic reasons.
- b. Lamps shall be high pressure sodium, low-wattage florescent, or LED-type lamps for exterior fixtures.
- c. For building accent lighting, use a shielded light fixture to conceal light source from public view. Illumination shall be directed only at the desired feature; no uplighting permitted.
- d. Shield exterior light sources to prevent direct glare to adjacent properties; use fixtures that direct illumination downward to the ground, walkway and driveway surfaces.
- e. Consider use of commercial grade LED luminaries, 3500 K color, 80 lumens/watt minimum.
- f. Prohibit use of incandescent or halogen lamps.
- g. Use occupancy sensors where feasible.
- h. Consider daylight harvesting where daylight shelves are provided.

4.5.3 PLUMBING

Provide interior plumbing and drainage for campus improvement projects requiring such systems that are efficient, economical, maintainable and reliable. Select low-flow and high-efficiency fixtures, fittings, and appliances when appropriate.

5.0 IMPLEMENTATION

The following subsections describe the provisions for implementing and reviewing proposed improvements for the campus, as well as provisions for revising and updating the PRU for a Master Plan.

5.1 PHASING

Implementation of the Five-Year Master Plan is anticipated to be completed in five phases in accordance with the revised Implementation Plan, (Table x). The plan and phases are based on the studies and information in the PRU for a Five-Year Master Plan, Volumes 1 and 2. However, the phasing of the Implementation Plan included herein has been adjusted to insure that adequate parking is provided during all phases of campus development.

5.1.1 BUILDING FACILITIES

The renovation of existing buildings and construction of new facilities will be phased to meet projected enrollment, program, and curricula needs. Although the scheduled implementation dates may vary from the actual dates, the construction of improvements intends to generally follow the sequence indicated pending available funding of improvements.

5.1.2 PARKING AND LOADING

The revised phases of the Implementation Plan provides parking and loading to support new building facilities. Parking spaces that will be removed for new buildings and improvements shall be replaced with an equal or greater number of spaces at another location prior to demolition of existing spaces.

Detailed provisions for the phasing of parking and loading facilities are found in the accompanying document entitled, "Windward Community College Parking Implementation Plan".

5.1.3 ROADWAYS AND INFRASTRUCTURE

For budgetary and practical reasons, the improvements of existing roadways and infrastructure systems will be phased with the construction of adjacent or related buildings projects. Campus roads and utilities may also be improved separately from building projects when funding for maintenance and infrastructure improvements becomes available to the College.

Project Phasing Implementation Plan

Phase	Project Description	Dates
1	Site Improvements, Phase 1 (access, repair campus sewer system)	2015
1	New Campus Signage (Community College sign, for Manaopono, Naauao and Manaleo)	2015
1	Campus lighting improvements	2015
1	Removal of parking area behind Hale Alaka'i	2015
1	Permanent stair stems from Laakea to LLC coffee shop Hale Alakai reroof	2015
2	Site Improvements, Phase 2 (parking, construct sidewalk along campus road)	2016
2	Repaint/repair Naauao exterior	2016
2	Repaint Manaopono, Kuhina, Akoakoa exterior	2016
2	Construct concrete entry paths for overflow parking	2016
2	Repaint Manaopono, Kuhina, Akoakoa exterior	2016
2	Repave Noeau parking lot and short driveway	2016
3	Site Improvements, Phase 3 (ADA compliant walkways connecting all campus)	2017
3	Renovate Hale Alakai building	2017
3	Original Hale A'o Kitchen and walkway removal, Renovate interior/exterior and re-roof	2017
3	Convert Imiloa basement (existing mechanical/electrical) to storage room	2017
3	Replace/reconstruct ADA ramps, railings, and awnings	2017
4	Site Improvements, Phase 4 (convert Sherwood forest into Mala area, lo'i)	2018
4	Renovate or provide portable modular classroom with a/c for Hale Uluwehi	2018
4	Reroof Manaopono, Naauao, Manaleo with clay tiles	2018
4	Repair floor tiles in Akoakoa, Imiloa	2018
4	Resurface Paliku Theater front entry and entry/lobby	2018
4	Replace FCU assembly and re-insulate duct and equipment at Imiloa and Kuhina	2018
4	Access and repair ceramics damp room wall and equipment at Palanakila, clean exterior	2018
5	Site Improvements, Phase 5 (bioswale/storm water retention pond construction)	2019
5	Removal of forest area & foliage along residential property line	2019
5	Renovate Maintenance Shop	2019
5	Renovate Maintenance Yard Buildings	2019

Table 5.1 Project Phasing Implementation Plan

5.2 COMPLIANCE

The provisions and requirements of the following documents shall govern the development of campus improvements:

- a. Plan Review Use for a Five-Year Master Plan for the University of Hawai'i at Windward Community College Volumes 1 and 2.
- b. Windward Community College Design Plan and Design Guidelines.
- c. Windward Community College Parking Implementation Plan.
- d. City Council Resolution 94-87.

Necessary amendments, modifications, and clarifications to the first three documents shall be made in accordance with subsection 5.4 Amendments of this document.

Additionally, if LEED certification is pursued, campus improvement designs are to support certification through the applicable LEED rating system, (see section A2 Sustainability Resources).

5.3 DESIGN REVIEW

5.3.1 PURPOSE

The purpose of this design review is to ensure that all future projects conform to the objectives, criteria, concepts and design guidelines so that the overall environmental quality of the campus will be developed as envisioned.

This section establishes provisions for the design review process of individual projects. These provisions include the establishment of review procedures and a committee to oversee compliance with the PRU/Master Plan.

5.3.2 DESIGN REVIEW COMMITTEE

A Design Review Committee (DRC) will be formed to assure that the proposed design for an improvement satisfies the programmed needs of the College and design guidelines specified in the documents indicated above. The DRC will assist in the review of individual project designs as well as amendment requests.

5.3.3 DESIGN REVIEW PROCEDURES

Design reviews will include the DRC and the design consultants retained by the State for specific projects. Reviews will occur during the schematic, preliminary, and prefinal design phases to evaluate the appropriateness of a proposed design.

At each review, the DRC will certify its approval if the design satisfies the objectives and criteria set in previous reviews and those identified in these guidelines. DRC-approved plans and documentation will be submitted to the City and County Department of Planning and Permitting (DPP) for review and approval in the design phases shown below.

5.3.4 PRE-DESIGN MEETING

This meeting will include the DRC and the design consultant(s). The design goals of the Windward Community College Master Plan and Design Plan will be reviewed with the design consultant. Infrastructure and design elements that require interfacing will be discussed during Schematic Design: This “on-board” review meeting will involve the appropriate members and consultants of the DRC and the design consultant.

The meeting will discuss comments to previously submitted schematic design documents. The documents should be submitted by the design consultant to the DRC two weeks before the review meeting. The documents should include sufficient information to show how the proposed design satisfies the parameters of the Design Plan and design guidelines. Minimum submittal requirements for the Schematic Design package shall be in accordance with the scope outlined in DAGS Division of Public Works’ publication, “Policies and Procedures Governing Design Consultant Contracts”.

The design consultant will be provided with written comments, marked-up plans and/or approval from the DAGS representative of the DRC following the meeting. Upon approval and acceptance of the schematic design package by the DRC, the design consultant shall transmit plans and documentation of the DRC approval (with DRC comments) to DPP for review and approval.

5.3.5 PRELIMINARY DESIGN (DESIGN DEVELOPMENT):

This “on-board” review meeting will include the appropriate members and consultants of the DRC and the design consultant.

Preliminary Design documents (along with annotated review comments and marked-up plans from the Schematic Design phase) shall be submitted two weeks prior to the review meeting. DPP comments and responses shall also be included with this submittal. Minimum submittal requirements for the Preliminary Design package shall be in accordance with the scope outlined in the DAGS Division of Public Works’ publication, “Policies and Procedures Governing Design Consultant Contracts”.

Written approval, marked-up plans and/or comments shall be compiled by the DAGS representative of the DRC and returned to the design consultant in a timely manner following the meeting.

5.3.6 FINAL DESIGN (CONSTRUCTION DOCUMENTS)

The appropriate members and consultants of the DRC will check the Final Design documents for compliance with the design review comments.

Final Design documents (along with annotated review comments and marked-up plans from the Preliminary Design phase) shall be submitted to the DAGS representative of the DRC. Minimum submittal requirements for the Final Design package shall be in accordance with the scope outlined in the DAGS Division of Public Works’ publication “Policies and Procedures Governing Design Consultant Contracts”.

Written approval, marked-up plans and/or comments shall be compiled by the DAGS representative of the DRC and returned to the design consultant within four weeks following the submittal. The DRC may extend this review period when necessary.

When all final review comments have been addressed to the satisfaction of the DRC, a letter certifying final approval shall be provided to the design consultant. Final plans, specifications and the letter of final approval shall be submitted to DPP upon application for a building permit by the design consultant.

5.4 AMENDMENTS

5.4.1 PURPOSE

The purpose of these amendment provisions is to provide a process to consider modifications to the PRU for a Five-Year Master Plan, Design Plan and Parking Implementation Plan. As the campus develops, it is expected that the College's academic programs, curriculum, objectives and physical needs may change or may need to be refined. Additional knowledge about the relevance of certain objectives, criteria or guidelines of the documents that govern campus development will be gained. With changed conditions and a better understanding of the plan, modifications, clarifications and updates to these documents may be appropriate.

5.4.2 APPROPRIATENESS

Applications for amendments to specific design guidelines, design elements and details of the Design Plan will be considered. The overall design concept and themes shall be maintained during development of the campus.

Amendments will be approved if the applicant can show that compliance with specific provisions will cause undue hardship for the College's academic agenda or cause an otherwise sound design to be impractical or unfeasible. It must also be demonstrated that the amendment will be consistent with the overall intent and goals of the PRU/ Master Plan, Design Plan, and Parking Implementation Plan.

5.4.3 PARTICIPANTS

Amendment requests must be ultimately approved by DPP. The DRC shall provide initial review and recommend preapproval or disapproval of the proposed amendments requested by individual project consultants or other affected parties. Preapproved amendment requests shall be submitted by the DRC to DPP for review and approval.

5.4.4 AMENDMENT PROCEDURES

In order to properly evaluate requests, the party proposing the amendments shall provide the following written and/or graphic information for review by the DRC:

- a. Existing provisions of the PRU/Master Plan, Design Plan or Parking Implementation Plan for which amendments are requested.

- b. General description of the proposed project design or proposed changes in the College's academic programs, curricula, objectives or physical needs which make an amendment necessary. The aspects of the proposed design or changes that are inconsistent with the applicable provisions should be detailed
- c. Proposed amendments (such as deletions, revisions or new provisions) to the applicable documents.
- d. The basis for the proposed amendments. Consistency of the amendments with the intent of the Design Plan must be demonstrated.
- e. The effects, if any, of the proposed amendments on other existing provisions.

The amendment request shall be reviewed by the appropriate representatives of the DRC. Review of the request should be completed by the DRC within two weeks of the submittal. The DRC may extend the review period when necessary.

When requests are determined to be justified and preapproved by the DRC, the requests shall then be forwarded to DPP for their review. DPP will review the requests in a timely fashion and render a decision.

It shall be understood that preapproval by the DRC does not guarantee approval by DPP, which may require and additional justifications or modifications to the proposed amendments as conditions for approval. The City Council of the City and County of Honolulu shall have the ultimate authority in approving amendments to the PRU/ Master Plan and the Design Plan.

5.4.5 MINOR MODIFICATIONS AND INTERPRETATIONS

When amendment requests are made, the DRC may, in consultation with DPP, determine that such requests represent minor modifications or adjustments to the PRU/Master Plan, Design Plan and the Parking Implementation Plan. Minor modifications preapproved by the DRC will be subject to administrative review and approval by DPP.

Where provisions or requirements of one document are inconsistent with those of another document, the DRC will render an interpretation or clarification with concurrence from DPP. Final determinations shall be submitted to DPP in writing for their information and records. An approved interpretation shall become part of the appropriate documents.

Decisions regarding minor modifications and interpretations will be made within two weeks of the request for an amendment or clarification. The DRC or DPP may extend this period when necessary.

APPENDIX

A1 CAMPUS WASTE AND RECYCLING MANAGEMENT GUIDELINES

In support of the campus' overall sustainability goals, a comprehensive and effective waste and recycling program is instituted to facilitate the reduction of landfill-bound waste generated by building occupants. Individual buildings may comply by providing an easily-accessible dedicated area for the collection and storage materials for recycling for the entire building.

Recycling Programs may include:

Glass, plastic, aluminum, containers, mixed paper, white office paper, cardboard, phonebooks, pallet staging, light-bulbs, e-waste, HI-5 reverse vending machines for student/faculty/employee use, food waste and compostable service-ware.

A2 SUSTAINABILITY RESOURCES

Act 96, SLH 2006 directs the DOR's pursuance of sustainable design standards for design and construction of campus buildings to meet and achieve, to the extent possible, the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) Silver certification, rating system version 2.2. WCC recognizes the significance and importance of sustainability as it embarks on future development programs at the campus, therefore all projects at WCC are encouraged to pursue certification through the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) for New Construction (see figure A2.1 for LEED Scorecard).

 LEED 2009 for New Construction and Major Renovations		Project Name	
Project Checklist		Date	
Sustainable Sites Possible Points: 26		Materials and Resources, Continued	
<input type="checkbox"/> Y <input type="checkbox"/> ? <input type="checkbox"/> N	Prereq 1 Construction Activity Pollution Prevention 1	<input type="checkbox"/> Y <input type="checkbox"/> ? <input type="checkbox"/> N	Credit 4 Recycled Content 1 to 2
<input type="checkbox"/>	Credit 1 Site Selection 1	<input type="checkbox"/>	Credit 5 Regional Materials 1 to 2
<input type="checkbox"/>	Credit 2 Development Density and Community Connectivity 5	<input type="checkbox"/>	Credit 6 Rapidly Renewable Materials 1
<input type="checkbox"/>	Credit 3 Brownfield Redevelopment 1	<input type="checkbox"/>	Credit 7 Certified Wood 1
<input type="checkbox"/>	Credit 4.1 Alternative Transportation—Public Transportation Access 6	Indoor Environmental Quality Possible Points: 15	
<input type="checkbox"/>	Credit 4.2 Alternative Transportation—Bicycle Storage and Changing Rooms 1	<input type="checkbox"/> Y <input type="checkbox"/> ? <input type="checkbox"/> N	Prereq 1 Minimum Indoor Air Quality Performance
<input type="checkbox"/>	Credit 4.3 Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles 3	<input type="checkbox"/>	Prereq 2 Environmental Tobacco Smoke (ETS) Control
<input type="checkbox"/>	Credit 4.4 Alternative Transportation—Parking Capacity 2	<input type="checkbox"/>	Credit 1 Outdoor Air Delivery Monitoring 1
<input type="checkbox"/>	Credit 5.1 Site Development—Protect or Restore Habitat 1	<input type="checkbox"/>	Credit 2 Increased Ventilation 1
<input type="checkbox"/>	Credit 5.2 Site Development—Maximize Open Space 1	<input type="checkbox"/>	Credit 3.1 Construction IAQ Management Plan—During Construction 1
<input type="checkbox"/>	Credit 6.1 Stormwater Design—Quantity Control 1	<input type="checkbox"/>	Credit 3.2 Construction IAQ Management Plan—Before Occupancy 1
<input type="checkbox"/>	Credit 6.2 Stormwater Design—Quality Control 1	<input type="checkbox"/>	Credit 4.1 Low-Emitting Materials—Adhesives and Sealants 1
<input type="checkbox"/>	Credit 7.1 Heat Island Effect—Non-roof 1	<input type="checkbox"/>	Credit 4.2 Low-Emitting Materials—Paints and Coatings 1
<input type="checkbox"/>	Credit 7.2 Heat Island Effect—Roof 1	<input type="checkbox"/>	Credit 4.3 Low-Emitting Materials—Flooring Systems 1
<input type="checkbox"/>	Credit 8 Light Pollution Reduction 1	<input type="checkbox"/>	Credit 4.4 Low-Emitting Materials—Composite Wood and Agrifiber Products 1
<input type="checkbox"/>		<input type="checkbox"/>	Credit 5 Indoor Chemical and Pollutant Source Control 1
Water Efficiency Possible Points: 10		<input type="checkbox"/>	Credit 6.1 Controllability of Systems—Lighting 1
<input type="checkbox"/> Y <input type="checkbox"/>	Prereq 1 Water Use Reduction—20% Reduction	<input type="checkbox"/>	Credit 6.2 Controllability of Systems—Thermal Comfort 1
<input type="checkbox"/>	Credit 1 Water Efficient Landscaping 2 to 4	<input type="checkbox"/>	Credit 7.1 Thermal Comfort—Design 1
<input type="checkbox"/>	Credit 2 Innovative Wastewater Technologies 2	<input type="checkbox"/>	Credit 7.2 Thermal Comfort—Verification 1
<input type="checkbox"/>	Credit 3 Water Use Reduction 2 to 4	<input type="checkbox"/>	Credit 8.1 Daylight and Views—Daylight 1
Energy and Atmosphere Possible Points: 35		<input type="checkbox"/>	Credit 8.2 Daylight and Views—Views 1
<input type="checkbox"/> Y <input type="checkbox"/>	Prereq 1 Fundamental Commissioning of Building Energy Systems	Innovation and Design Process Possible Points: 6	
<input type="checkbox"/>	Prereq 2 Minimum Energy Performance	<input type="checkbox"/>	Credit 1.1 Innovation in Design: Specific Title 1
<input type="checkbox"/>	Prereq 3 Fundamental Refrigerant Management	<input type="checkbox"/>	Credit 1.2 Innovation in Design: Specific Title 1
<input type="checkbox"/>	Credit 1 Optimize Energy Performance 1 to 19	<input type="checkbox"/>	Credit 1.3 Innovation in Design: Specific Title 1
<input type="checkbox"/>	Credit 2 On-Site Renewable Energy 1 to 7	<input type="checkbox"/>	Credit 1.4 Innovation in Design: Specific Title 1
<input type="checkbox"/>	Credit 3 Enhanced Commissioning 2	<input type="checkbox"/>	Credit 1.5 Innovation in Design: Specific Title 1
<input type="checkbox"/>	Credit 4 Enhanced Refrigerant Management 2	<input type="checkbox"/>	Credit 2 LEED Accredited Professional 1
<input type="checkbox"/>	Credit 5 Measurement and Verification 3	Regional Priority Credits Possible Points: 4	
<input type="checkbox"/>	Credit 6 Green Power 2	<input type="checkbox"/>	Credit 1.1 Regional Priority: Specific Credit 1
Materials and Resources Possible Points: 14		<input type="checkbox"/>	Credit 1.2 Regional Priority: Specific Credit 1
<input type="checkbox"/> Y <input type="checkbox"/>	Prereq 1 Storage and Collection of Recyclables	<input type="checkbox"/>	Credit 1.3 Regional Priority: Specific Credit 1
<input type="checkbox"/>	Credit 1.1 Building Reuse—Maintain Existing Walls, Floors, and Roof 1 to 3	<input type="checkbox"/>	Credit 1.4 Regional Priority: Specific Credit 1
<input type="checkbox"/>	Credit 1.2 Building Reuse—Maintain 50% of Interior Non-Structural Elements 1	Total Possible Points: 110	
<input type="checkbox"/>	Credit 2 Construction Waste Management 1 to 2	Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110	
<input type="checkbox"/>	Credit 3 Materials Reuse 1 to 2		

Figure A2.1 LEED Scorecard for New Construction and Major Renovations

Table 1. AGMBC Applicability for Credits and Prerequisites in LEED 2009 Design & Construction Rating Systems										
APPLICABLE RATING SYSTEM							ELIGIBILITY			
LEED FOR NEW CONSTRUCTION	LEED FOR SCHOOLS	LEED FOR CORE AND SHELL	LEED FOR COMMERCIAL INTERIORS	LEED FOR HEALTHCARE	LEED FOR RETAIL: NEW CONSTRUCTION	LEED FOR RETAIL: COMMERCIAL INTERIORS	CREDIT	CREDIT NAME	CAMPUS CREDIT	GROUP CREDIT
SUSTAINABLE SITES										
							SSp1	Construction Activity Pollution Prevention		G
							SSp2	Environmental Site Assessment		G
							SSc1 [†]	Site selection	C	G
							SSc2 [†]	Development Density and Community Connectivity	C	G
							SSc3 [†]	Brownfield Redevelopment	C	G
			SSc3.1		SSc4	SSc3	SSc4.1 [†]	Alternative Transportation- Public Transportation Access	C	
			SSc3.2		SSc4	SSc3	SSc4.2	Alternative Transportation- Bicycle Storage and Changing Rooms	C	G
					SSc4	SSc3	SSc4.3	Alternative Transportation- LEV & FE vehicles	C	G
			SSc3.3		SSc4	SSc3	SSc4.4	Alternative Transportation- Parking Capacity	C	G
							SSc5.1 [†]	Site Development- Protect or Restore Habitat	C	G
							SSc5.2	Site Development- Maximize Open Space	C	G
							SSc6.1	Storm water Design- Quantity Control	C	G
							SSc6.2	Stormwater Design- Quality Control	C	G
							SSc7.1	Heat Island Effect- Nonroof	C	G
							SSc7.2	Heat Island Effect- Roof		G
							SSc8 [†]	Light Pollution Reduction	C	G
							SSc9	Tenant Design and Construction Guidelines		G
							SSc9	Site Master Plan	C	G
							SSc9.1	Connection to the Natural World- Places of Respite		G
							SSc9.2	Connection to the Natural World- Direct Exterior Access for Patients		G
							SSc10	Joint Use of Facilities		G
WATER EFFICIENCY										
							WEp1	Water Use Reduction		
							WEp2	Minimize Potable Water Use for Medical Equipment Cooling		
							WEc1	Water-Efficient Landscaping	C	G
							WEc2	Innovative Wastewater Technologies		G
							WEc2	Water Use Reduction - Measurement and Verification		
			WEc1			WEc1	WEc3	Water Use Reduction		G
							WEc4	Process Water Use Reduction		G
							WEc4.1	Water Use Reduction- Building Equipment		G
							WEc4.2 [†]	Water Use Reduction - Cooling Towers	C	G
							WEc4.3 [†]	Water Use Reduction - Food Waste Systems		G
ENERGY AND ATMOSPHERE										
							EAp1 [†]	Fundamental Commissioning of Building Energy Systems		G
							EAp2	Minimum Energy Performance		G
							EAp3	Fundamental Refrigerant Management	C	
							EAc1 [†]	Optimize Energy Performance		G
							EAc1.1	Optimize Energy Performance- Lighting Power		
							EAc1.2	Optimize Energy Performance- Lighting Controls		
							EAc1.3 [†]	Optimize Energy Performance- HVAC		G
							EAc1.4	Optimize Energy Performance- Equipment and Appliances		
							EAc1.5	Optimize Energy Performance- Building Envelope		
						EAc5	EAc2	On Site Renewable Energy	C	G
			EAc2			EAc2	EAc3	Enhanced Commissioning		
							EAc4	Enhanced Refrigerant Management	C	G
			EAc3			EAc3	EAc5	Measurement and Verification		G
							EAc5.1	Measurement and Verification- Base Building		G
							EAc5.2	Measurement and Verification- Tenant Submetering		G
			EAc4			EAc4	EAc6	Green Power	C	G
							EAc7 [†]	Community Contaminant Prevention - Airborne Releases	C	

Figure A2.2 From AGMBC Applicability for Credits and Prerequisites in LEED 2009 Design & Construction Rating Systems Table

Appendix

Table 1. AGMBC Applicability for Credits and Prerequisites in LEED 2009 Design & Construction Rating Systems (CONTINUED)										
APPLICABLE RATING SYSTEM										
LEED FOR NEW CONSTRUCTION	LEED FOR SCHOOLS	LEED FOR CORE AND SHELL	LEED FOR COMMERCIAL INTERIORS	LEED FOR HEALTHCARE	LEED FOR RETAIL: NEW CONSTRUCTION	LEED FOR RETAIL: COMMERCIAL INTERIORS	CREDIT	CREDIT NAME	CAMPUS CREDIT	GROUP CREDIT
							MRp1	Storage and Collection of Recyclables	C	G
							MRp2	PBT Source Reduction- Mercury		G
							MRc1.1	Tenant Space - Long-Term Commitment		
		MRc1					MRc1.1	Building Reuse- Maintain Existing Walls, Floors, and Roof		G
							MRc1.2	Building Reuse- Maintain Interior Nonstructural Elements		G
							MRc2*	Construction Waste Management	C	G
							MRc3	Sustainably Sourced Materials and Products		G
			MRc3.1			MRc3.1	MRc3	Materials Reuse		G
							MRc3.2	Materials Reuse: Furniture and Furnishings		G
							MRc4	Recycled Content		G
							MRc4.1*	PBT Source Reduction- Mercury in Lamps	C	G
							MRc4.2	PBT Source Reduction- Lead, Cadmium and Copper		
							MRc5	Regional Materials		G
							MRc5	Furniture and Medical Furnishings		G
							MRc6	Rapidly Renewable Materials		G
							MRc6	Resource Use- Design for Flexibility		
		MRc6					MRc7	Certified Wood		G
INDOOR ENVIRONMENTAL QUALITY										
							IEQp1	Minimum Indoor Air Quality Performance		
							IEQp2	Environmental Tobacco Smoke (ETS Control)	C	G
							IEQp3	Minimum Acoustical Performance		
							IEQp3	Hazardous Material Removal or Encapsulation (Renovations only)		
							IEQc1	Outdoor Air Delivery Monitoring		
							IEQc2	Increased Ventilation		
							IEQc2	Acoustic Environment		
						IEQc3	IEQc3.1	Construction Indoor Air Quality Management Plan - During Construction		G
							IEQc3.2	Construction Indoor Air Quality Management Plan- Before Occupancy		
							IEQc4*	Low-Emitting Materials	C	G
							IEQc4.1*	Low-Emitting Materials- Adhesives and Sealants	C	G
							IEQc4.2*	Low-Emitting Materials- Paints and Coatings	C	G
							IEQc4.3*	Low-Emitting Materials- Flooring Systems	C	G
							IEQc4.4*	Low-Emitting Materials- Composite Wood and Agrifiber Products	C	G
							IEQc4.5*	Low-Emitting Materials- Furniture and Furnishings	C	G
							IEQc4.5*	Low-Emitting Materials- System Furniture and Seating	C	G
							IEQc4.6	Low-Emitting Materials- Ceiling and Wall Systems		G
							IEQc5	Indoor Chemical and Pollutant Source Control		G
						IEQc6	IEQc6.1	Controllability of Systems- Lighting		
		IEQc6			IEQc6	IEQc6	IEQc6.2	Controllability of Systems- Thermal Comfort		
		IEQc7					IEQc7.1	Thermal Comfort- Design		G
			IEQc7				IEQc7.2	Thermal Comfort- Verification		
							IEQc7.2	Thermal Comfort- Employee Verification		
							IEQc8.1	Daylight and Views- Daylight		
							IEQc8.2	Daylight and Views- Views		
							IEQc9	Enhanced Acoustical Performance		
							IEQc10	Mold Prevention		
INNOVATION AND DESIGN										
							IDp1	Integrated Project Planning and Design		G
							IDc1†	Innovation in Design	C	G
							IDc2	LEED Accredited Professional		G
							IDc3	The School as a Teaching Tool		G
							IDc3	Integrated Project Planning and Design		G
REGIONAL PRIORITY										
							RPc1†	Regional Priority	C	G

† Not eligible as campus or group credit for all compliance options. Please refer to application guidance for details.
* Only available as a campus credit for projects built/renovated simultaneously under the same construction contract.

Figure A2.2

(Continued), from AGMBC Applicability for Credits and Prerequisites in LEED 2009 Design & Construction Rating Systems Table 1.

Visit www.usgbc.org/LEED for more information on LEED standards and documentation.

Adapted from Table 1. AGMBC Applicability for Credits and Prerequisites in LEED 2009 Design & Construction Rating Systems for Windward Community College Design Plan and Guidelines

Credits applicable for Campus Credits

CREDIT	CREDIT NAME	NOTES:
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SUSTAINABLE SITES

SSc1	Site selection	Do not develop bldgs, hardscapes, roads or parking on sites that meet LEED requirements, (i.e.: prime ag land, within FEMA-defined 100 year flood plain, etc.)
SSc2	Development Density and Community Connectivity	Does not apply
SSc3	Brownfield Redevelopment	Does not apply
SSc4.1	Alternative Transportation- Public Transportation Access	Located with 1/4 mi of bus stop serving at least 2 lines
SSc4.2	Alternative Transportation- Bicycle Storage and Changing Rooms	Bike racks and shower facilities to be allocated across the master site
SSc4.3	Alternative Transportation- LEV & FE vehicles	Preferred parking spaces for low-emitting and fuel-efficient vehicles to be properly distributed within master site or install alternative fueling station.
SSc4.4	Alternative Transportation- Parking Capacity	Meet but not exceed min local zoning reqs for parking or provide spaces for less than 5% FTE and provide preferred parking spaces for car and vanpools for 5% of total parking spaces (NC)
SSc5.1	Site Development- Protect or Restore Habitat	Protect or restore site per LEED requirements
SSc5.2	Site Development- Maximize Open Space	Provide high ratio of open space to development footprint while meeting LEED requirements
SSc6.1	Storm water Design- Quantity Control	Reduce impervious ground cover and increase on-site infiltration.
SSc6.2	Stormwater Design- Quality Control	Implement stormwater mgmt plan that uses BMP's to capture and treat stormwater runoff from 90% of avg annual rainfall
SSc7.1	Heat Island Effect- Nonroof	Use strategies to reduce heat island effect on min 50% of site hardscapes
SSc8	Light Pollution Reduction	Interior: reduce light trespass from interior lighting between 11pm-5am; exterior: follow LEED guidelines per Lighting Zone 2.

WATER EFFICIENCY

WEc1	Water-Efficient Landscaping	Reduce potable water consumption (irrigation) by 50% from baseline or use no potable water for irrigation
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ENERGY AND ATMOSPHERE

EAp3	Fundamental Refrigerant Management	Zero use of CFC-refrigerant is allowed in new bldgs; implement phase-out plan if present in existing bldg
EAc2	On Site Renewable Energy	Use on-site renewable energy to offset building energy costs (i.e.: solar, wind)
EAc4	Enhanced Refrigerant Management	Do not use refrigerants; or select refrigerants that minimize or eliminate their contribution to ozone depletion or global climate change
EAc6	Green Power	Agree to min 2-year renewable energy contract to provide at least 35% of the building's electricity from renewable sources

MATERIALS AND RESOURCES

MRp1	Storage and Collection of Recyclables	Provide dedicated area for collection and storage materials for recycling for the entire building
MRc2	Construction Waste Management	Recycle/salvage min 50% non-hazardous construction and demolition debris

INDOOR ENVIRONMENTAL QUALITY

IEQp2	Environmental Tobacco Smoke (ETS Control)	Prohibit smoking in the building except in designated areas
IEQc4.1	Low-Emitting Materials- Adhesives and Sealants	All interior adhesives and sealants to comply with standards required by LEED rating system
IEQc4.2	Low-Emitting Materials- Paints and Coatings	All interior paints and coatings to comply with standards required by LEED rating system
IEQc4.3	Low-Emitting Materials- Flooring Systems	All flooring to comply with standards required by LEED rating system

INNOVATION AND DESIGN

IDc1	Innovation in Design	Example: provide educational program on environmental and human health benefits of green building practices through a comprehensive signage/display program
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REGIONAL PRIORITY

RPc1	Regional Priority	Earn up to 4 of the following points: EAc1: Optimize energy performance EAc2: On-site renewable energy SSc6.1: Stormwater design - quantity control SSc6.2: Stormwater design - quality control WEc1: Water efficient landscaping WEc3: Water use reduction
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* Only available as campus credit for projects built/renovated simultaneously under the same construction contract.

Figure A2.3 LEED AGMBC Applicability for Credits and Prerequisites adapted for WCC Master Plan

Appendix

A3 Hawai'i Sense of Place for Windward Community College (WCC)

It is strongly encouraged that all projects support WCC's guiding mission by ensuring that all future campus development embodies a unique Hawai'ian "sense of place" that is appropriate for the WCC campus. The objective is to enhance creativity and inspire project teams to uncover unique design concepts and contextual solutions that are environmentally responsible and culturally appropriate, yet over the long-term redevelopment of the WCC campus, cohesive and well executed.

Utilizing the "Guiding Principles for Culturally Appropriate Design" as well as the "Cultural Appropriateness Checklist" that were originally developed for HNL Sustainable DOT-A, can help designers deliver projects that embody a Sense of Place that is distinct to Hawai'i, (see Figures A3.1 and A3.2).

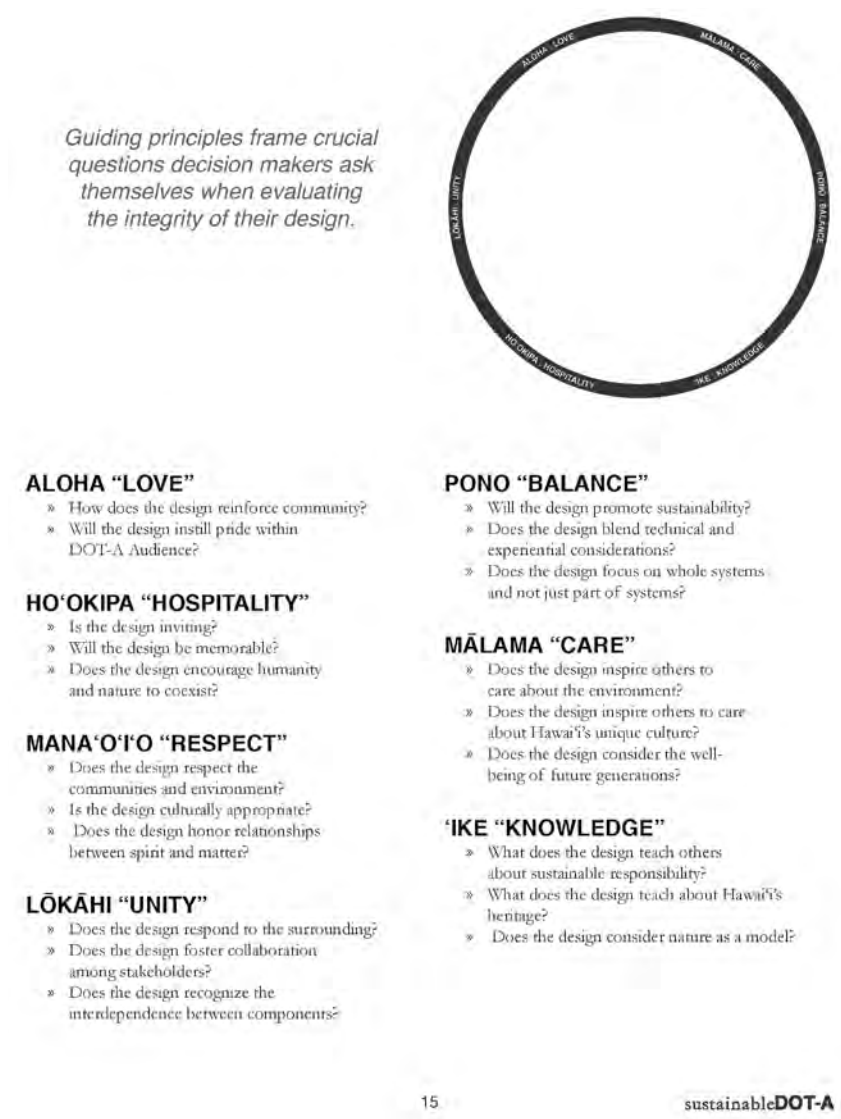


Figure A3.1 Guiding principles for culturally appropriate design from Sustainable DOT-A's, "Cultural Appropriateness Guidelines."



CULTURAL APPROPRIATENESS CHECKLIST

PROJECT NAME	
INITIATION DATE (MM-DD-YYYY)	PROJECT NUMBER
BEST PRACTICE	NOTES
01 LANGUAGE: 'OLELO	
1.01 Hawaiian Language	
1.02 Language of Other (Local) Cultures	
1.03 Pidgin (Hawaiian Creole English)	
1.04 Grammar and Meaning	
1.05 Punctuation, Symbols, and Markings	
02 IMAGERY	
2.01 Physical Landforms	
2.02 Landmarks	
2.03 Native and Cultural Flora	
2.04 Native and Cultural Fauna	
2.05 Significant Color	
03 PLACEMENT & LOCATION	
3.01 Signage, Plaques, and Wayfinding	
3.02 Culturally Significant Elements	
3.03 Context within Project Site	
3.04 Context within Airport Site	
04 HISTORY, RITUAL, & TRADITIONS	
4.01 Historical Artifacts and Events	
4.02 Stories, Songs, Chants, and Dance	
4.03 Historical Costume, Dress, and Attire	
4.04 Historical Peoples and Sites in Hawaiian Culture	
4.05 Historical Peoples and Events from other (Local) Cultures	
05 CONTEMPORARY HAWAI'I	
5.01 Contemporary Music and Art	
5.02 Contemporary Costume, Dress, and Attire	
5.03 Contemporary People and Lifestyles	
06 INNOVATION IN LEADERSHIP	
6.01 Cultural Advisor	
6.02 Innovation in Cultural Appropriateness	
6.02 Innovation in Cultural Appropriateness	
6.02 Innovation in Cultural Appropriateness	

DESIGN TEAM REPRESENTATIVE	DATE	CONTRACTOR	DATE
PROJECT CHAMPION	DATE	DOT-A REPRESENTATIVE	DATE

Cultural Appropriateness Guidelines

6

Figure A3.2 Cultural appropriateness checklist from Sustainable DOT-A's, "Cultural Appropriateness Guidelines."

Appendix

A4 Paint Color Swatches

HISTORIC REGION - WOOD FRAME BUILDINGS:

PANTONE #: COLOR LOCATION:

	wall, soffit
	roof fascia, window trim, gutter, downspout
	roof #1
	roof #2
	railing



Hale Alaka'i

HISTORIC REGION - MODERN ERA BUILDINGS:

PANTONE #: COLOR LOCATION:

	wall, soffit
	roof fascia, window trim, gutter, downspout
	roof #1
	railing





Hale Awa

HISTORIC REGION - SPANISH MISSION STYLE, THE TERRITORIAL PERIOD:

PANTONE

COLOR LOCATION:

#:		wall, soffit
		roof fascia, window trim, gutter, downspout
		roof #1
		roof #2
		railing







Doctors Residence, Hale A'o

NEW BUILDING, NOT IN HISTORIC REGION:

PANTONE

COLOR LOCATION:

















#:		wall, soffit
		roof fascia, window trim, gutter, downspout
		roof #1
14-0936		roof #2
		roof #3







Existing conditions at campus location not in historic region.











**Windward Community College
Plant List**









41438





















Windward/Ko'olau, O'ahu Plants			Native Hawaiian/Canoe Plants		
Trees/Palms	Common Name	Scientific Name	Trees	Common Name	Scientific Name
	Hala	Pandanus tectorius		Kamani	Calophyllum inophyllum
	O'ahu Loulu	Pritchardia martii		Kou	Cordia subcordata
	Pritchardia kahukuensis	Pritchardia kahukuensis		Ulu	Artocarpus altilis
Shrubs	Common Name	Scientific Name		Milo	Thespesia populnea
	Pukiawe 'A'ali'i Mahu	Styphelia tameiameia		Hau	Hibiscus tiliaceus
	Koki'o Ke'oke'o Hau Hele	Hibiscus arnottianus Hibiscus punaluensis		Kukui	Aleurites moluccana
	Kamapua'a Pilo	Kadua fluviatilis		'Iliahi Sandalwood	Santalum freycinetianum
Groundcover	Common Name	Scientific Name		Manele Hawaiian Soapberry	Sapindus saponaria
	Puakauhi 'Awikiwiki	Canavalia galeata		Lonomea	Sapindus oahuensis
				Mamane	Sophora chrysophylla

Trees (Con't)	Common Name	Scientific Name	Shrubs (Con't)	Common Name	Scientific Name
	Ohia Lehua	Metrosideros polymorpha		'Ulei	Osteomeles anthyllidifolia
	'Ohe	Tetraplasandra hawaiiensis		Nānū	Gardenia brighamii
	Lama	Diospyros sandwicensis		Naio	Myoporum sandwicense
	Mamaki Mamake Waimea	Pipturus albidus		Red Hibiscus Koki'o 'Ula'ula	Hibiscus kokio
	Naio	Myoporum sandwicense		Kulu'i	Nototrichium humile
	Noni	Morinda citrifolia		Mountain Naupaka	Scaevola gaudichaudiana
	Koai'a	Acacia koaia		Beach Naupaka	Scaevola sericea
	Hapu'u Pulu	Cibotium glaucum			
			Groundcover	Common Name	Scientific Name
				Pohinahina	Vitex rotundifolia
Shrubs	Common Name	Scientific Name		'Ilie'e	Plumbago zeylanica
	Alahe'e	Psydrax odorata		'Ākia	Wikstroemia oahuensis
	Maile (Vine)	Alyxia stellata		Bacopa 'Ae'Ae	Bacopa monnieri
	'Akaha Bird's Nest Fern	Asplenium nidus			

Appendix

Groundcover (Con't)	Common Name	Scientific Name
	'Ākulikuli	Sesuvium portulacastrum
	Nehe	Wollastonia integrifolia
	'Uki'Uki	Dianella sandwicensis
	Carex	Carex wahuensis
	'Ahu'awa	Cyperus javanicus
	Pala'a Palapala'a	Sphenomeris chinensis
	Palai Palapai	Microlepia strigosa
	Kupukupu	Nephrolepis cordifolia
	Pili	Heteropogon contortus
	'Aki'aki	Sporobolus virginicus

Ornamental/Tropical Plants		
Trees	Common Name	Scientific Name
	Chinese Banyan	Ficus microcarpa
	Monkeypod	Samanea saman
	Rainbow Shower Tree	Cassia x nealiae
	Pink Tecoma	Tabebuia heterophylla
	White Tecoma	Tabebuia heterophylla
	Pua Kenikeni	Fagraea berteriana
	Golden Bamboo	Bambusa vulgaris
	Singapore Plumeria	Plumeria obtusa

Palms	Common Name	Scientific Name	Shrubs (Con't)	Common Name	Scientific Name
	Royal Palm	Roystonea regia		Pink Ginger	Alpinia purpurata
	Coco Palm	Cocos nucifera		Heliconia	Heliconia sp.
	Joannis Palm	Veitchia joannis		Monstera	Monstera deliciosa
	MacArthur Palm	Ptychosperma macarthurii		Philodendron	Philodendron bipinnatifidum Philodendron sp.
	Foxtail Palm	Wodeytia bifurcata		Natal Plum	Carissa macrocarpa
	Manila Palm	Veitchia merrillii		Hawthorn	Rhaphiolepis umbellata
	Areca Palm	Dypsis lutescens	Groundcover	Common Name	Scientific Name
	Raphis Palm	Rhapis excelsa		Lauae	Phymatosorus grossus
Shrubs	Common Name	Scientific Name		Mondo Grass	Ophiopogon japonicus
	Taro	Colocasia esculenta		Liriope	Liriope spicata
	Ti	Cordyline Fruticosa			
	Red Ginger	Alpinia purpurata			

Appendix

