

## **SECTION 6.0**

### **SITE AND LANDSCAPE**

**NOTE:**

*The “Site and Landscape Design Guidelines” outline the external landscape and open space features and elements that shall be considered in any proposed landscape project on the University of Houston campus.*

#### **6.1 OVERVIEW**

##### **6.1.1 Preface**

The original UH Campus Plan developed by Hare & Hare in 1937 established a formal framework of buildings, spaces and connections organized along axial lines. In contrast, actual campus landscaping practice duplicated the informality of the natural surroundings, particularly the woods as they extended from Brays Bayou. As the campus itself grew, the park-like nature of the campus increased, as roads were closed, axes were blocked and auto circulation was routed around the perimeter of campus.

Departing from the axial framework, developments after 1966 adopted a more informal and spontaneous pattern of building locations while still adhering to the orthogonal orientation of the original plan. More recent developments have focused on strengthening the axial pathways and transforming the open space between buildings from left over space into a network of green spaces that engage the neighboring buildings.

The intent of these landscape guidelines is to achieve a high level of quality in the design of landscape while maintaining an order and structure to the campus, cultivating visual interest and biodiversity, and providing a conceptual framework for a distinct campus identity.

Landscape objectives include:

- A strong first impression of the campus upon arrival.
- A pedestrian-friendly campus that prioritizes its open spaces and walkways.
- Generous tree areas with a tree canopy equaling 40% or more of total land area
- Well-defined open spaces that create strong addresses for existing and future campus buildings.
- New campus gathering places and “outdoor rooms” of varying character and sizes that are harmonious and in scale with existing surroundings.
- Native and well-adapted plantings that acknowledge the seasons, provide shade and offer visual interest.
- Appropriately and consistently lit streets, walkways and gathering spaces that support nighttime activities and promote security.
- Connections to the larger indigenous landscape and recreational uses of the adjacent bayou park system.

### **6.1.2 Variance from Government Code**

Texas Government Code Section 2166.404, requires xeriscape landscaping design on new construction projects. However, Houston's high heat and humidity, claylike soils, and high water table conditions vary from the dry environmental conditions suitable for typical Texas xeriscape landscaping. The University of Houston practices water-saving landscaping by appropriate plant selection, limiting turf, efficient irrigation, and generous mulching.

### **6.1.3 Tree Campus USA**

The University of Houston Sustainability Committee, in partnership with Facilities/Construction Management and TAMU Urban & Community Forestry, is implementing Tree Campus USA standards of tree care and community engagement. Elements of the "Campus Tree Care Plan" recommended by the Arbor Day Foundation have been incorporated into these landscape guideline.

## **6.2 LANDSCAPING OF CAMPUS EDGES**

### **6.2.1 General**

Establish standards for the landscape treatment of campus edges and for the creation of a distinctive, positive image that fixes the University within a landscape context that represents the University and the environment of the region. Landscape treatments shall consider urban design elements such as sense of place, sense of entry, view corridors, visual buffering, adjacent land uses, natural features and connection to the host community. Consideration shall also include the concept of extending and reinforcing the bayou woods particularly along Martin Luther King Blvd.

During design of major building projects on campus, representatives of Facilities Planning and Grounds Maintenance shall be engaged by the design consultant in landscape design decisions and the overall vision for campus public spaces.

### **6.2.2 Recommendations**

The scale and character of the Campus edges that front highways is greatly influenced by the speed and distance of motorists that pass by the campus or enter the campus. The scale of plantings along the highway shall consist of double rows of live oak trees and clusters of other canopy trees that reflect both the formal and informal character of campus. Consider view corridors, alignment, points of reference, and screening where appropriate.

The scale and character of campus edges adjacent to surrounding districts and neighborhoods shall communicate a strong sense of a campus threshold without creating a physical and visual barrier. Consider crossable boundaries that allow unobstructed pedestrian and vehicular access.

The natural woods that extend through the Campus from Brays Bayou shall be expanded and connected to accentuate the bayou connection and to act as a landscape buffer between the surrounding highways and the Campus.

## **6.3 LANDSCAPING OF GATEWAYS**

### **6.3.1 Existing Condition**

UH has two major entrances possessing landscape features of the type and scale to create a sense of arrival on the campus. The Cullen Blvd. Entrance from I-45 achieves this with a pair of split granite obelisks at the northern end, with flanking rows of live oak trees and ornamental light posts and banners. University Drive off the Spur 5 access road has similar edge conditions and terminates in the campus' most iconic building, Ezekiel Cullen.

### **6.3.2 General**

Substantially enhance and beautify the landscape treatment at appropriate gateways to create significant, appropriately scaled entrances commensurate with a major university. Create a memorable first impression and front door image.

### **6.3.3 Recommendations**

#### **6.3.3.1 Major Gateways**

Major vehicular gateways shall be appropriately reinforced with landscape and architectural features to signify entrance and arrival. Gateway monuments, graphics, and colors shall be in scale with a major institution. Landscape elements shall be bold and simple in arrangement, massing, and alignment.

Consideration shall be given to view corridors, alignment, points of reference, and screening where appropriate. Use vertical gateway elements where possible, similar to the Cullen gateway (without duplicating the style or scale).

#### **6.3.3.2 Portals**

Portals--entry points to the campus less significant than gateways--shall be appropriately reinforced with landscape and architectural features to signify entrance and arrival. Portal walls, graphics, and

colors shall be in scale with a major institution but also in scale with the surrounding community. Landscape elements shall be simple in arrangement, massing, and alignment.

Consideration shall be given to view corridors, alignment, points of reference, and screening where appropriate. Portal size shall strike a balance between vehicular and pedestrian scale.

Materials and color for Portals shall be uniform and consistent throughout campus.

## **6.4 LANDSCAPING OF CAMPUS STREETS**

### **6.4.1 General**

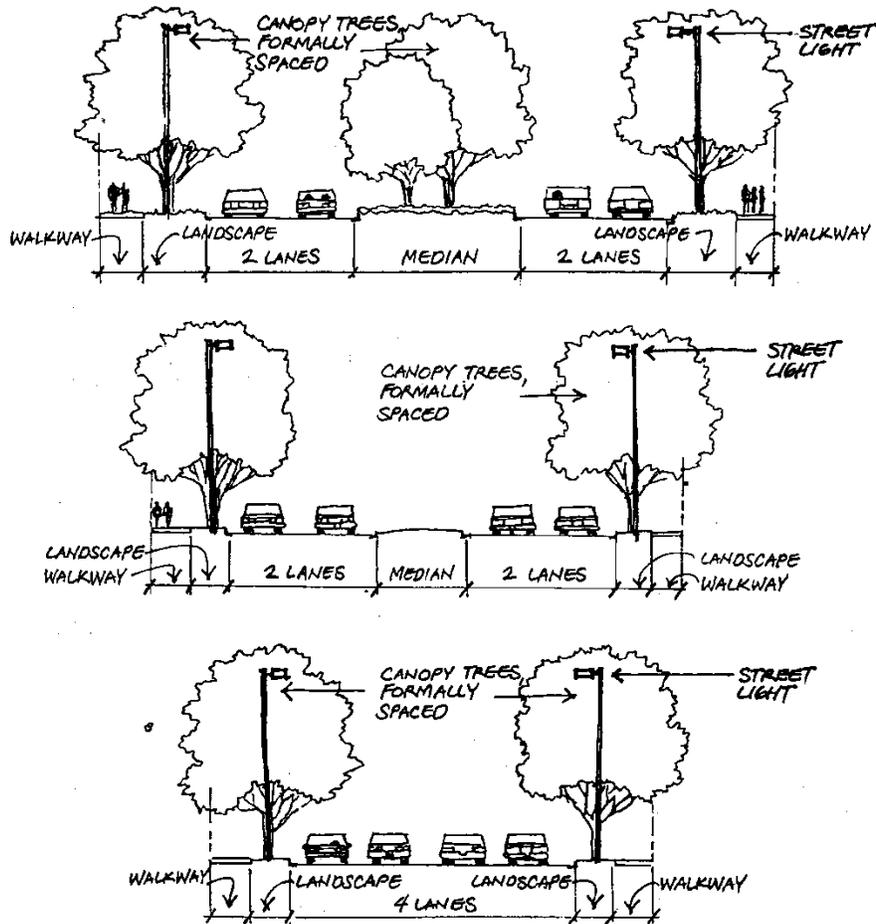
Establish structure and clarity for pedestrian and vehicular circulation by using consistent landscape treatment on internal roads and on approaches to the UH campus, existing and proposed. Landscape treatments shall reinforce circulation paths and project a “campus image” in the streets surrounding the campus.

### **6.4.2 Recommendations**

Internal campus streets shall have regularly spaced canopy trees in planting strips along both sides of the street and shall continue for the entire length of the street. Provide a minimum planting strip width of 8 feet. Use a single species for each street with consistent spacing of 25 to 30 feet on center. Trees may be different species for different streets, but mixing species within any particular street is discouraged.

Use low maintenance groundcovers in the planting strips. Provide concrete walkways on both sides of the street, set away from the curb, behind the planting strips. Walkways shall be parallel to the curb and a minimum 8 feet wide--or larger if required by the campus master plan or by pedestrian traffic.

Locate pedestrian lights, street lights and signage in the planting strips. Space the pedestrian and street lights evenly between the trees. Offset the pedestrian lights a consistent 2 feet 6 inches from the edge of sidewalk.



## 6.5 LANDSCAPING OF PARKING AREAS

Refer to **Section 9.13** of the Campus Design Guidelines and Standards for landscaping requirements of parking areas.

## 6.6 LANDSCAPING OF WALKS

### 6.6.1 Existing Condition

Use standard broom finished concrete, 5 inch depth, for sidewalks. There are, however, a significant amount of existing exposed aggregate concrete walks and care shall be taken in transitioning between existing aggregate-finished walks and new broom-finished sidewalks. Replace existing exposed aggregate concrete with new standard concrete.

### 6.6.2 General

Observe a hierarchy of systems, typology, scale, consistency of materials, and structure of pedestrian walkways to help define and articulate open spaces and enhance campus wayfinding. Create a consistent and orderly walkway environment. Promote and encourage a lively urban pedestrian environment in the streets surrounding the campus.

Differentiate between formal walks such as pedestrian malls and informal walks that follow a natural pattern of circulation.

### **6.6.3 Recommendations**

Existing campus walks are characterized by curving, diagonal, intersecting and parallel walkways that reflect strong natural desire lines. Walkways that interconnect courtyards and academic clusters shall also follow the concept of diagonal walkways respecting desire lines and parallel walkways adjacent to vehicular circulation routes.

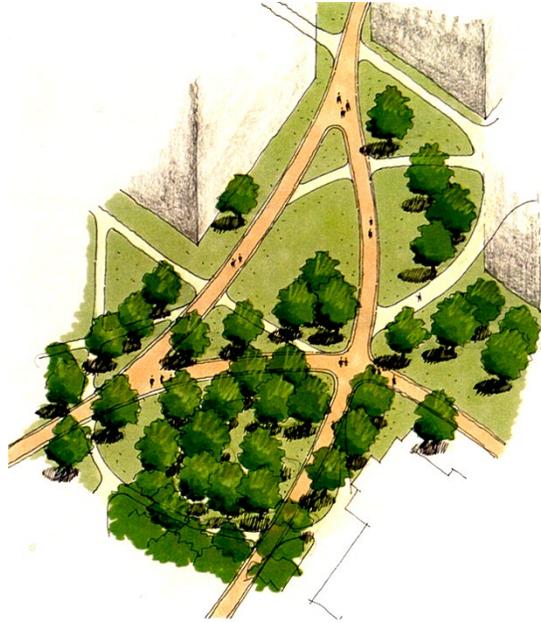
A primary walk system shall be developed that establishes a hierarchy of walks, with a select few given dominance over the existing walks. See the campus master plan. Priority should be given to major pedestrian routes by creating wide, shaded, continuous pedestrian walks. **(See Figure 6.6.1)**

All other pedestrian circulation systems should be subservient but complementary to the primary pedestrian walk system.

For all pedestrian circulation typologies, there shall be established a hierarchy of materials and dimensions. As a rule of thumb, all walkways shall be designed to carry light vehicle traffic. Refer to Design Guideline Section 9.4 for additional paving criteria.

Walkways and special pavements shall not become subservient to individual buildings and their materials. The width of pedestrian circulation routes shall vary and be established by hierarchy, usage and urban design considerations.

A common palette of materials shall unify the entire campus. As a base material, concrete shall be the dominant walkway material. The finish, scoring and connection details shall be consistent and uniform. Special materials, patterns, banding, etc., may be used to articulate Pedestrian Malls, Plazas, or special features. Paved pedestrian entrance areas shall be simple and relate to overall pavement of open space circulation. Heavily articulated and patterned pavement is discouraged unless consistent with Pedestrian Malls or major campus circulation treatment. Unit pavers and stamped concrete are not allowed.



**FIGURE 6.6.1  
WALKS**

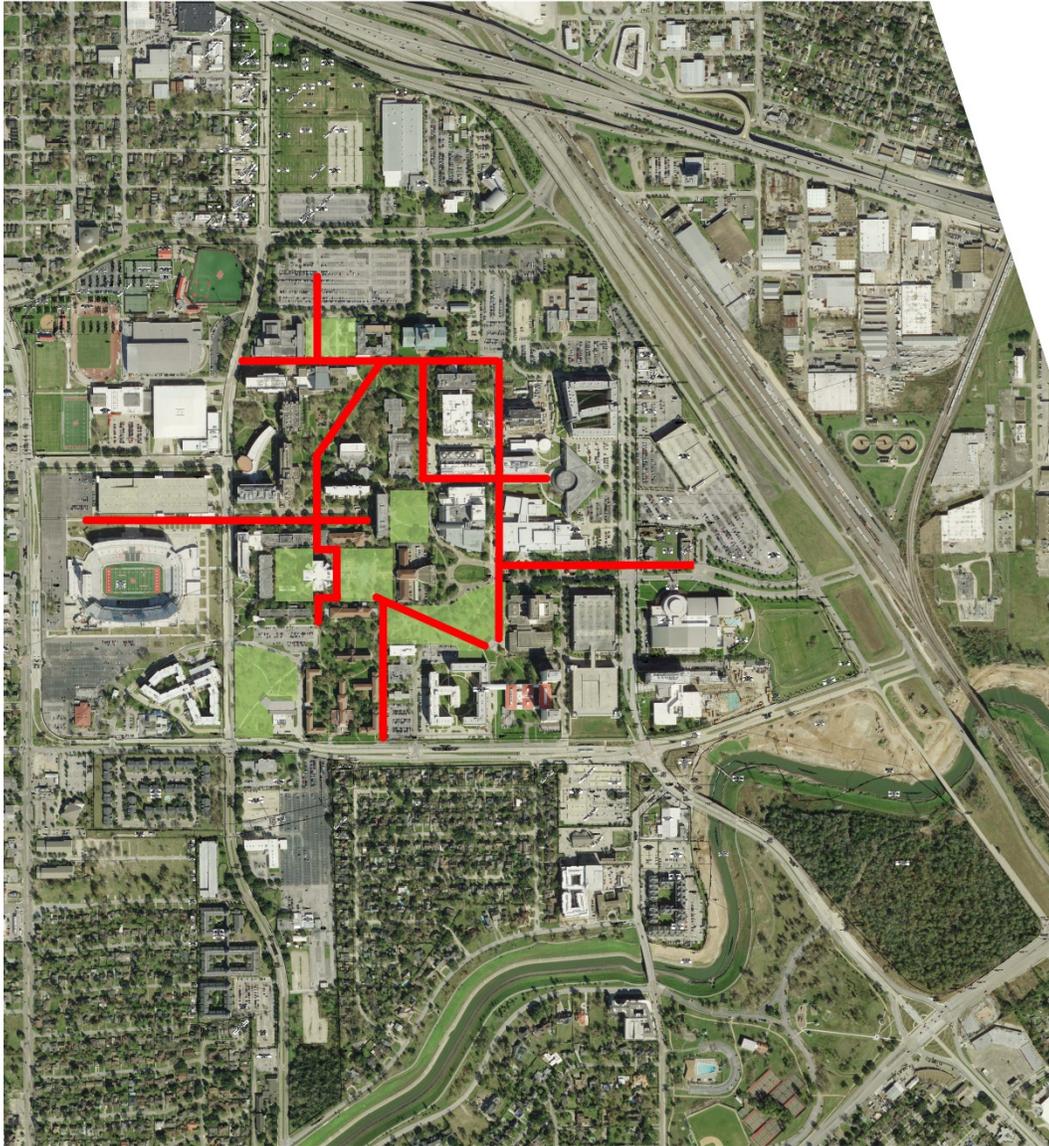
## **6.7 LANDSCAPING OF OPEN SPACES**

### **6.7.1 General Guidelines**

The campus includes a large number of spaces that vary considerably in size, condition, formality, and significance. Some have been formally recognized as named spaces, others are known by association with surrounding buildings or streets, and others are proposed for future development.

This section establishes landscape treatments for various open space typologies, based upon the following categories of campus structure:

- Quadrangles, Courtyards, Plazas
- Pedestrian Malls
- Pedestrian Nodes
- Campus Woodlands
- Outdoor Gathering Areas
- Athletic Fields
- Planting Areas Around Buildings



**FIGURE 6.7.1 New Map**  
**MAJOR LANDSCAPE AREAS AND PEDESTRIAN PATHS**

## **6.7.2 Recommendations**

### **6.7.2.1 Courtyards**

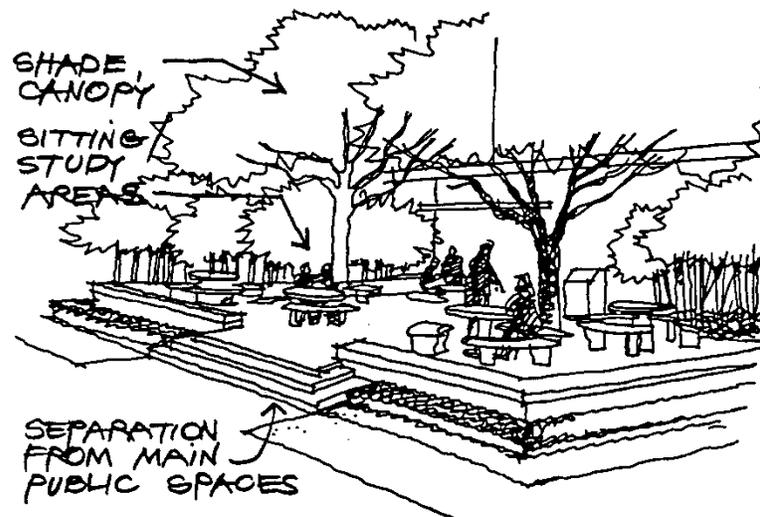
As noted in prior land use development plans, an open space system allows the existing linear walks and paths to extend the campus. Over time, new courtyards are anticipated that will be similar in size and nature to the many that exist today and that will serve as front door addresses for new buildings within each district.

Landscape treatment shall use walkways that parallel and define the boundaries of the courtyard. Simple, open, grass areas and tree massing shall reinforce the open space. Plant groupings can be

formally or informally spaced, but the overall treatment shall re-enforce qualities of space and place within the courtyard. Individual landscape treatment of buildings, as they adjoin the courtyard, shall reinforce the totality of the courtyard and its special sense of place. Features such as fountains, monuments, sculpture, and special site furniture can occur at selected intersections of walkways and expanded pavement areas. (See Figure 6.7.2)

In addition to spatial reinforcement, the placement of landscaping shall reinforce significant vistas, points of connection, axial relationships and building entrances. Pedestrian lighting, street furniture and signage shall also complement and reinforce the sense of a unified open space. Courtyard landscape treatments shall set them apart from Pedestrian Malls.

Courtyards shall include seating areas for informal study, provide robust wi-fi connectivity, and incorporate areas of sun and shade.



### 6.7.2.2 Pedestrian Malls

A Pedestrian Mall is a significant linear pedestrian promenade. (See Figure 6.7.3) It accommodates a significant volume of pedestrian traffic and functions as a major linear open space. At significant intersections and connecting points, the Pedestrian Mall shall be highlighted with expanded plazas, which will serve as focal points and meeting places. Significant features include regularly spaced, large canopy trees of a single species forming a shaded esplanade flanked by expansive lawns or other planting. Architectural landmarks shall be considered as visual anchors to the Mall.

The mall shall be detailed with special pavement and/or accent banding to provide interest and pedestrian scale. Where the pedestrian mall doubles as a fire lane, provide a minimum 20 foot wide path. Materials selected shall be elegant, simple and timeless. The pavement material shall also be capable of being repaired and replaced with ease and consistency. The placement of benches,

pedestrian lights and landscape shall reinforce the linear aspects of the mall. The mall design should facilitate strong directional movement.



**FIGURE 6.7.3  
PEDESTRIAN MALL (FUTURE ARTS WALK)**

#### **6.7.2.3 Pedestrian Node**

Where there is a major confluence of pedestrian traffic, a pedestrian node shall celebrate the intersection as a special meeting place and point of reference. The pedestrian node shall function as an oasis characterized by paving and tree canopy. Consideration shall be given to landscape treatments that are more urban in character, such as tree pockets, seating and special features, e.g. specimen plant material, fountain, kiosk, etc. Coordinate with Campus walks, lights, and signage.

#### **6.7.2.4 Campus Woodlands**

Campus woodlands shall have a different character from the structured organization of quadrangles and malls. The woodlands are informal open spaces that meander through Campus. Large clusters and drifts of tree shall define and reinforce the woodland edges, screen out adjacent uses and generally create a naturalistic open space and park area that is in contrast to the rest of the campus. Native canopy trees, native flowering understory trees and a variety of plantings shall emphasize an arboretum-like display. Occasional sun-filled lawns shall offset and complement large areas of shade and canopy. Concrete walks, minimum 8 feet wide, shall be naturalistic in form and meander through the woodlands. Woodlands can be remnants of the existing bayou woods or they can be man-made areas that emulate the natural character of the woods. Coordinate with Campus walks, lights, and signage.

#### **6.7.2.5 Outdoor Gathering Areas**

The Campus Master Plan for 2015-2020 identified the following landscape goals:

Achieve a destination campus with signature pedestrian corridors linking housing, classrooms, research assets, and student life amenities.

Construct outdoor gathering spaces between research clusters and academic units to promote collaborative engagement.



Collaborative outdoor spaces are envisioned for each campus district, the first example of which is Wilhelmina’s Grove in the Arts district. (See Figure 6.7.4)

#### **6.7.2.6 Athletic Fields**

If feasible, athletic fields shall be located and organized to reinforce vistas into campus and views of landmark buildings. The fields shall consist of large grassed areas defined by ample massing of trees. The planting of trees between and around fields shall create large, outdoor rooms that scale down expansive open space. Landscaping shall also buffer and transition the fields from parking lots and building zones. Fields shall be integral with the Campus open space framework of shaded pedestrian walks. Coordinate with Campus walks, lights, and signage.

#### **6.7.2.7 Landscaping Adjacent to Buildings**

Landscape treatment adjacent to buildings shall be simple with a limited plant palette. Massing and size of planted areas shall be in scale with buildings and complement or reinforce the landscape of

the open space areas and the campus landscape character. Avoid the use of high maintenance foundation plantings such as hedges and shrubs.

Concrete maintenance strips at the bases of building are mandatory and shall be two (2) feet in width.

Landscape treatment shall consider reinforcement of main entrances, side and back yards. Placement of trees shall reinforce the architectural elevations. Priority shall be given to safety and, therefore, heights of plantings and small trees shall be limited to ensure adequate sight availability. Consideration shall be given for year-round color. (See Figure 6.7.5)



**FIGURE 6.7.5  
LANDSCAPING ADJACENT TO BUILDINGS**

#### **6.7.2.7 Service Yards**

Dumpster yards, emergency generators and other service areas shall be located away from primary pedestrian circulation and shall be fully screened from general view using masonry, metal panels or other architectural materials that are complementary to the adjacent building. Plantings surrounding the walls are encouraged to soften the yard enclosure. Do not rely on vegetation for screening, however. Coordinate service yard locations with campus walks, pedestrian light poles, and signage. (See Figure 6.7.6)



**FIGURE 6.7.6  
SERVICE AREA SCREENING**

## **6.8 PLANTING**

### **6.8.1. General Guideline**

In conjunction with buildings and facilities, planted areas shall serve to strengthen campus identity, reinforce open spaces, and create a comfortable environment. Campus planting, especially oak trees, canopy street trees, and park-like settings, shall establish a structure of continuity for the campus, helping to tie old and new sections, and the many architectural styles, together into a cohesive statement.

Over the last several years, earlier landscape guideline recommendations related to formal tree planting, native plants, and specialty gardens, and have been realized. A palette of plant materials for use on campus has been developed to support an attractive, harmonious and easily maintained landscape. An energy-efficient, environmentally responsible irrigation system is also being implemented.

Landscaping treatments vary across the campus. The core campus (the area bordered by Elgin, Calhoun, Wheeler, and Cullen) is treated consistently with turf acting as the primary surface to allow for student recreation. Where turf will not grow, such as in planting strips beneath street trees, ground covers are desirable. Decomposed granite may be used sparingly in challenging growing conditions and in special accent areas. Live oaks are the dominant tree in this area. Asian Jasmine or Sandy Leaf Fig planting beds should be installed at their base.

Visual coherence and consistency shall be achieved with the use of a limited plant palette. However, biodiversity should be a priority because over time this allows for less maintenance and more resilient trees. The overall campus landscape not only shall be unified, but also shall also display a regional and indigenous character.

Functional and aesthetic design shall consider scale, hierarchy, context, adjacencies, spatial definition, screening, buffering, shade, view corridors, and seasonal color. Landscape and plant material shall complement the building and articulate main entry points and provide transitional zones between buildings area and larger, common open spaces and circulation areas. Plants shall also buffer or screen unsightly areas and reinforce larger landscape systems such as pedestrian malls and streetscapes.

Long-term maintenance requirements are a consideration for plant selection. Longevity and permanence are also a significant factor. Plants that grow quickly, thereby requiring more maintenance, pruning, etc., are discouraged. Additionally, plantings shall be designed and located in a manner that is conducive to easier maintenance. For instance, a landscape zone that has a multitude of species will require greater maintenance than a simpler mass planting of a single material with occasional accent plants.

Personal security and safety are significant factors in selecting plant materials and specifying their location. Generally, there should be a clear visual zone between approximate knee height and sight line (or underside of the tree canopy) for all plantings to allow unobstructed views.

All landscaped areas shall be permanently and adequately irrigated as described in section 6.9 below. Existing and/or relocated trees and plants shall be protected and moved according to UH grounds maintenance requirements. (See Master Specification Section 01 50 00: Temporary Facilities and Controls.)

The final selection of plants should be based on the following characteristics: low maintenance, low water use, long life, native or indigenous to the region; and non-native plants that are well-adapted in this locale. The University generally requires all new street and walkway trees to have a minimum caliper of 4 inches at installation, but will also consider smaller 2.5-3 inch caliper trees when appropriate, such as in woodland settings. Final plant selection shall be coordinated with and approved by the University Architect.

**6.8.2. Other Landscaping Recommendations**

- Employ the standards for the selection of plant material for use on campus.
- Encourage use of landscape buffer at the building perimeter
- Work within the current campus master plan.
- Preserve existing trees, particularly the remnants of the existing woods (post oaks).
- Replace any trees removed due to new construction or renovation projects. Replacement trees shall match or exceed the total caliper inches and number of trees removed during construction. If space to plant a matching quantity of caliper inches and similar number of trees does not exist on the project site, then larger caliper trees may be used or replacement trees may be planted on alternate sites on campus as determined by the University Architect.

**6.8.3. Prepared Soil Mix:**

Soil mix for exterior planting beds shall be a weed free mix of 20% sharp sand, 40% composted pine bark or rice hulls, and 40% topsoil.

**6.8.4. Mulch:**

Mulch material for exterior planting beds shall be double shredded hardwood mulch.

**6.8.5. Gravel:** Gravel shall not be used in planting beds.

**6.8.6.** Decomposed Granite may be used sparingly in challenging growth areas and in special accent areas with permission of the University Architect.

**6.8.7. Turf:**

Turf shall be 100% Raleigh St. Augustine sod (*Stenotaphrum secundatum* “Raleigh”) for partial shade locations or Bermuda (*Cynodon dactylon*) for primarily sunny locations.

**6.8.8. Staking and Guying Materials:**

Stakes for bi-staking trees shall be 8-foot T-posts stakes.

Wire guys for tree support shall be pliable No. 10 gauge galvanized wire.

Hose for chafing guards shall be new or used two-ply fiber reinforced garden hose of not less than 3/4 inch diameter. One color shall be used throughout the job. *Alternate:* Metal T-Post may be used.

### **6.8.9. Root Stimulator**

Green Light Root Stimulator and Starter Solution (5-20-10) or equal.

### **6.8.10. Planting Beds**

Planting beds shall receive a minimum of four inches of prepared soil mixture, tilled thoroughly with existing soil until a homogenous mixture is achieved to a depth of six to eight inches. EPTAM pre-emergent herbicide shall be incorporated thoroughly at the rate of 20 lbs. per 1000 sq. ft.; and 13-13-13 fertilizer at the rate of 8 lbs. per 1000 sq. ft. into the top three inches of the prepared planting bed.

Prepared beds shall be mulched with two-inches of composted mulch.

## **6.9 IRRIGATION**

### **6.9.1. PVC Pipe & Fittings**

Pressure main line piping 6” and larger shall be Class 200 rubber gasket pipe and 4” and smaller shall be PVC Schedule 40 with solvent welded joints.

Pipe shall be made from an NSF approved Type I, Grade I, PVC compound conforming to ASTM resin specification D1785. All pipe must meet requirements as set forth in Federal Specification PS-22-70, with an appropriate standard dimension (S.D.R.) and be solvent-weld pipe.

#### **6.9.1. Non-Pressure Lateral Line Piping:**

Non-pressure buried lateral line piping shall be PVC class 200 with solvent-weld joints.

Pipe shall be made from NSF approved, Type I, Grade II PVC compound conforming to ASTM resin specification D1784.

PVC solvent-weld fittings shall be Schedule, 40, 1-2, II-I NSF approved conforming to ASTM test procedure D2466 for all PVC 4” and smaller.

Solvent cement and primer for PVC solvent-weld pipe and fittings shall be Christie’s Red Hot Blue Glue.

Rubber Gasket Type AWWA C153 Ductile Iron Fitting shall be used for all PVC pipe 6” and larger under constant pressure

**6.9.2. Brass Pipe and Fittings:** not used

**6.9.3. Galvanized Pipe Fittings:** not used

**6.9.4. Hose Bibs:** If hose bibs are specified, they shall be assumed to occasionally serve as potable water sources and shall be of “lead-free” construction.

**6.9.5. Valves:**

**6.9.5.1** Gate valves 4” and smaller shall be 200 lb. WOG (water, oil, gas), bronze gate valve featuring screw-in bonnet, non-rising stem and solid wedge disc, threaded ends, and bronze hand wheel. Manufacture by Nibco or approved equal.

**6.9.5.2** Gate valves 6 inch and larger shall be cast or ductile iron.

**6.9.5.3** Quick Coupling Valves shall have a bronze one-piece body designed for working pressure of 150 P.S.I. operable with quick coupler. Valves shall have swing joint and o-ring seals and be installed in valve boxes.

**6.9.5.4** Backflow prevention units shall be of size and type indicated on the irrigation drawings. Install backflow prevention units in accordance with irrigation construction details. Above grade back flow preventers shall be enclosed with protective screens.

**6.9.5.5** Swing check valves 2” and smaller shall be 200 pound W.O.G. bronze construction with replaceable composition, neoprene or rubber disc and shall meet or exceed Federal Specification WW-V-51D, Class A, Type IV.

**6.9.5.6** Anti-drain check valves shall be of heavy duty virgin PVC construction with R.I.P. thread inlet and outlet. Internal parts shall be stainless steel and neoprene. Anti-drain valves shall be field adjustable against drawout from 5 to 40 feet of head. Anti-drain valves shall be similar to the Valcon “ADV” or approved equal.

**6.9.6 Electrical Control Valves:**

Provide and install one Rainbird control valve box for each electric control valve.

All electric control valves shall be of the same manufacturer and shall feature a manual flow adjustment.

**6.9.7 Valve Boxes:**

Use 10” x 10-1/4” round box for all gate valves 2 1/2” and smaller, quick couplers and for all wire field splices. Carson Industries #910-12B with black bolt down cover or approved equal. Extension sleeve shall be PVC-6” minimum size. Provide minimum 4” deep clean pea gravel in bottom of all valve boxes (valves to have minimum 2” clearance).

Use 9-1/2” x 16” x 11” rectangular box for all electrical control valves, and 3” and 4” gate valves, Carson Industries 1419-12B with black bolt down cover or approved equal. Provide minimum 4” deep clean pea gravel in bottom of all valve boxes (valves to have minimum 2” clearance).

**6.9.8 Sprinkler Heads:**

Refer to Master Specification Section 328400, Planting Irrigation.

All sprinkler heads shall be of the same size, manufacturer, model, and deliver the same rate of precipitation. Riser nipples for all sprinkler heads shall be the same size as the riser opening in the sprinkler body.

### **6.9.9 Automatic Controllers:**

Refer to Master Specification Section 328400, Planting Irrigation.

Irrigation controllers shall have inline flow monitors compatible with controllers in use on campus.

Final location of automatic controllers shall be approved by the UH Landscape Project Manager.

### **6.9.10 Control Wiring:**

Connections between the automatic controllers and the electric control valves shall be made with direct burial, insulated copper wire AWG-U.F. 600 volt. Wiring will be a two wire system compatible with Baseline integrated system. Common wires shall be a different color wire for each automatic controller. In no case shall wire size be less than #14.

## **6.10 FURNISHINGS**

### **6.10.1 General**

Existing campus site furnishings vary in age, condition, style and material. Existing furnishings that are outdated, vandalized or deteriorated shall be replaced as needed with models indicated in these guidelines until all site furnishings conform to the required standards.

Campus standard site furnishings shall be employed to ensure that all items are of the same family with regard to styles, colors, and materials and to create a uniform expression and image for the public spaces of the campus. Ensure that all items placed on the grounds and in public areas of the campus have a purpose for their placement and serve in a convenient but unobtrusive manner.

### **6.10.2. Furnishing Selections**

See separate section 6.10 Site Furnishings for approved site furnishings for the central campus, UH at Katy and UH at Sugar Land.

Site furnishings include furniture and other amenities such as bike racks, trash bins, bollards, power stations and tree grates. Substitutions are not permitted.

Benches and Big Belly trash bins shall be anchored to a concrete pad and placed adjacent to, but not on walkways.

### 6.10.2.3. Sculpture

The Board of Regents of the University of Houston (BOR) approved the acquisition of public art in 1966 in connection with new construction. The acquisitions are to be financed in whole or part by the state's public art revenue program and shall not exceed 1% of a project's construction budget.

The System-wide Art Acquisition Committee (SWAAC) shall provide art acquisition services for the administration. Refer to <http://www.uh.edu/af/docs/SWAAC/policy.pdf> for current policies related to public art acquisition.

Sculpture and memorial placement and choice shall consider the size, quality, and color of the piece for proper integration with the overall campus environment. Consideration shall be given for groupings of sculptural elements, to suggest a sculpture garden that is set within a well-landscaped context. Individual sculptures chosen for a group setting should not conflict with each other or create a non-cohesive grouping. (See Figure 6.10.5 for examples.)

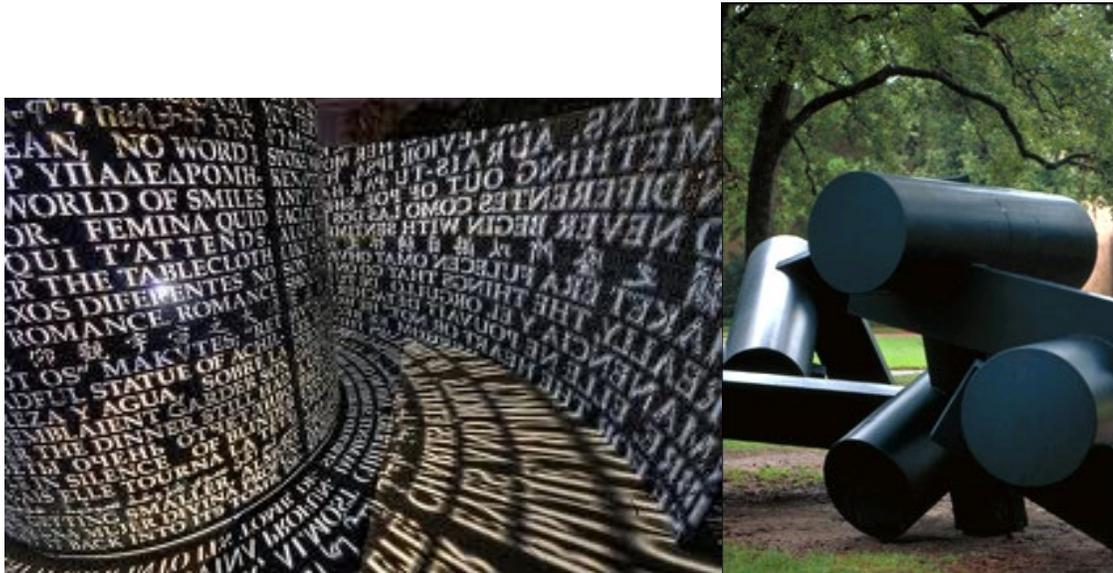


FIGURE 6.10.5  
CAMPUS SCULPTURES

## 6.11 LIGHTING

### 6.11.1 General Guideline

Refer to Guidelines Section 11, Exterior Lighting, for complete information. Use campus standard pedestrian lights, street lights and parking lot lights. Substitutions are not permitted.

Exterior lighting elements shall be LED with consistent 4000K temperatures and color rendering indices (CRI) of 90 or more.

Walkway, parking lot, and roadway lighting shall be from overhead, pole-mounted sources. High wattage, low or wall-mounted spotlights and wall-packs that produce glare and create dark shadows shall not be used.

Step lights are not permitted. Use overhead lighting or integral handrail lighting at stairs and ramps to achieve required foot candle levels.

### **6.11.2. Campus Street Lights**

Light fixtures for new or replacement installations on campus streets shall be the Altitude 2.0 LED single head fixture by Kim Lighting. (See **Figure 6.11.1**) Refer to Guidelines Section 11, Exterior Lighting, for complete information. Substitutions are not permitted.



**FIGURE 6.11.1  
CAMPUS STREET LIGHTS**

Mount the fixture on a 25 foot tall, round aluminum pole with a one piece base cover. The color of the fixture, pole and base cover shall be black.

Footing details for street poles shall be consistent along all University-owned roads. Footings shall be 24 inch diameter, formed, reinforced concrete. When located in lawn or planting areas, the top of footing shall be four (4) inches above finish grade, with a slight convex top to shed water. When located in pavement, the top of footing shall be level with finish grade, with no foundation exposed and the base cap resting flush with the paving.

### **6.11.3 Pedestrian Lights and Light Poles**

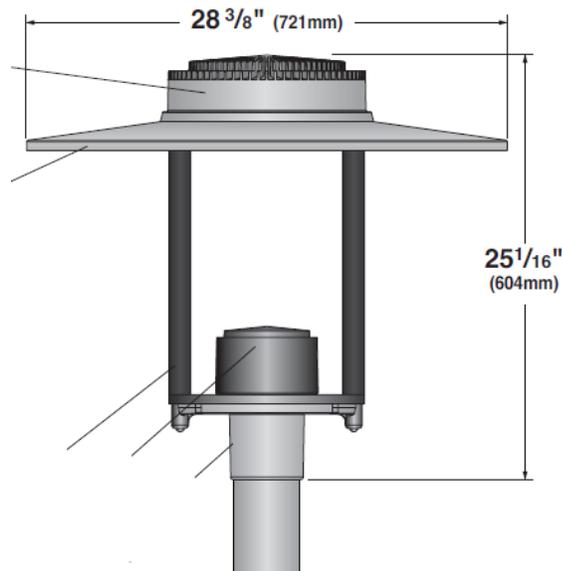
Pedestrian light fixtures for new or replacement installations shall be the Saturn Cutoff LED by Selux. (See **Figure 6.11.2**) Refer to Guidelines Section 11, Exterior Lighting, for complete information. Substitutions are not permitted.

Mount the fixture on a 13 foot tall, round tapered aluminum pole, with a hinged base and a round tapered, one piece base cover. The color of the fixture, pole and base cover shall be black.

Footing details for pedestrian poles shall be consistent throughout campus. Footings shall be 16 inch diameter, formed, reinforced concrete. When located in lawn or planting areas, the top of footing shall be four (4) inches above finish grade, with a slight convex top to shed water. When located in pavement, the

top of footing shall be level with finish grade, with no foundation exposed and the base cap resting flush with the paving.

Contractor shall install leveling nuts between concrete base and pole mounting plate. Hinge location shall not impede pedestrian or vehicular traffic when in the lowered position.



**FIGURE 6.11.2  
PEDESTRIAN LIGHTS**

#### **6.11.4. Parking Lot Lights**

Refer to Guidelines Section 11, Exterior Lighting, for complete information.

### **6.12 LANDSCAPE PLANS**

#### **6.12.1. Requirements**

Landscape plans are required for all new major campus building or landscape projects that require site development or modification. Plans must be drawn to scale and show the locations of existing and proposed property lines, easements, roadways, sidewalks, lights, site furnishings, trees, shrubs, groundcovers and other plant materials, natural features, all other landscape elements and planting and construction details. A plant schedule shall be provided that includes the type, installation size, number and placement of materials. Plants are to be identified by both their botanical and common names.

Trees that the University designated to be preserved or relocated shall be identified along with the method of irrigation and protection and the proposed new location. Use chain link fencing for all tree protection.

Provide a tree mitigation analysis itemizing the species and calipers of trees to be removed or relocated; the species and calipers of trees to be planted or relocated; and the resulting net balance (surplus or deficit) of tree caliper inches on the project site.

Landscape plans shall be submitted to FPC at each milestone submittal for review by the University Architect and by Facilities Services (including the UH Landscape Manager).