Stanford Site Design – Quick Guide

Purpose:
This document is intended for use in project design for exterior environments on Stanford Campus. It is a resource to help navigate Stanford guidelines and to address common design issues and questions in the form of a Quick Guide. It includes:

1. References to important documents that cover policy, process, design and construction.
2. A matrix to aid in finding more detailed information on common exterior elements, and
3. A list of common issues and questions related to the Campus Landscape.

Part 1: References
The Quick Guide refers often to the UACPD Guidelines and Standards and Facilities Design Guidelines (FDG). These two resources are distinct, but work together to guide design and implementation processes at Stanford.

UACPD Guidelines and Standards web pages include design related fact sheets and other documents for typical landscape elements, materials, colors, layouts and conditions. These are to assist design teams in integrating new design successfully into its campus context. UACPD Guidelines primarily serve design Consultants, but also can be a resource for Departments, Project Managers, and Contractors in project planning.

The Facilities Design Guidelines are managed by the LBRE Maps and Records department, and are primarily for use by Consultants and Contractors in developing Contract Documents for successful project execution. The FDG includes standard technical drawings, and documents which include both specifications and other guidelines that are specific to Stanford.

# Part 2: Site Design Standard Elements Matrix

<table>
<thead>
<tr>
<th>Exterior Elements</th>
<th>UACPD Guidelines Web Page</th>
<th>FDG Web Page Documents</th>
<th>FDG Web Page Specifications</th>
<th>Drawings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bike Parking Areas</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bike Racks</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benches</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bollards - Wood and Metal</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bollards - Pneumatic</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benches</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tables, Chairs, Umbrellas</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paving, Edging</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truncated Domes</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DG, Rock Mulch</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bark Mulch</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trash, Recycling, Compost</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dumpster Enclosures</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exterior Lighting</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Motorized Carts</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Phones and Access</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation Equipment</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planting</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tree Protection</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informational Signage</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Fencing/Laydown</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Landscape Design Guidelines</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Part 3: Campus Landscape Common Issues and Questions**

The following are common elements and issues, divided into three categories: General Site Design, Planting, Irrigation.

1. **General Site Design**
   a. **Existing trees**
      i. Existing trees must be thoughtfully integrated into landscape plans and project program;
      ii. Consider all potential impacts of new design to existing trees, including changes in grade, proximity to building construction, utility structures and trenching required, soil compaction, pathway paving, planting, irrigation, etc.
      iii. Work with an Arborist consultant or the Stanford Arborist for tree health and quality assessment, and coordinate proposed design with existing trees. Identify risks and communicate with SU Grounds and UACPD regarding tree disposition and protection.
      iv. A detailed tree protection plan is required on every Stanford project per FDG Specifications Section 01 56 39. Refer also to FDG General Design Documents Temporary Construction Facilities Siting Policy for tree protection requirements.
      v. A tree disposition plan, which is used for tree quality assessment and disposition for permitting purposes, is distinct from a tree protection plan.
   b. **New Trees**
      i. Tree selection should consider functional and aesthetic intent, adaptation to climate, pest and disease resistance, and site context. SU Grounds and UACPD may be consulted to provide specific experience and preferences for tree species on Campus.
      ii. Trees designed within hardscape plazas, other continuously paved areas, narrow parkways, or other situations with compacted soils, will likely require alternative means to achieve adequate growing conditions. Use of supported pavement systems such as structural cells or structural soil may be necessary to achieve a sufficient minimum soil volume for healthy root development.
   c. **Pathway Design**
      i. Typical dimensions
         1. Two way bikeway minimum is 10’ wide
         2. Shared use pathway minimum is 8’ wide
         3. Primary pedestrian pathway is 6’ to 8’ wide
         4. Secondary pedestrian pathway is 5’-6’ wide, minimum 4’ wide.
      ii. Typical pathway materials include asphalt, concrete, pavers, decomposed granite, and even landscape mulch.
      iii. Where paths intersect (especially if two paths of same material), preference is for a radius corner, approx.. 2’-3’ for pedestrian and bicycle movement.
   d. **Bollards**
      i. Bollards are used regularly on campus for vehicle control.
      ii. Technical standards, including spacing, are available on the FDG.
      iii. Bollard type (Black Metal or Wood) is based on location and context.
e. Bike Parking
   i. Bike parking compounds are designed areas with access paths that are perpendicular to adjacent pathways. Only in certain cases are bike areas designed so that bikes are parked directly adjacent to pathways.
   ii. Significant bike parking areas should be accessed via bike paths and bike curb ramps, not by relying on pedestrian sidewalks and corner pedestrian curb ramps.

f. Exterior Lighting
   i. UACPD Fact sheets, FDG Exterior Lighting Guidelines, and FDG details describe standard lights, typical applications, installation, and specification information.
   ii. Light pole footings shall not be visible above mulch layer in planting areas, except on slopes. Footings shall not be visible above paving in paved areas. Base covers are required for every light type. Refer to FDG Detail drawings ES-02-01 to ES-02-09
   iii. Pole lights are typically located 3’ O.C. from pathway edges. 18” is the minimum offset. Pull boxes should be located adjacent to light pole bases, not between base and pathway.

g. Skate Deterrents
   i. Skate deterrence may be required on a project-specific basis.
   ii. Deterrent measures vary depending on site conditions, program, materials, etc.
   iii. Deterrent measures must integrate with design and be approved for use by UACPD.
   iv. Deterrents that attach mechanically are not acceptable.

h. Decomposed Granite Paving
   i. Only stabilized decomposed granite shall be used, except as approved for use near trees.
   ii. Decomposed granite is the standard paving material used at bike parking areas, but there may be exceptions.
   iii. Consider proximity to building entries, slopes, drainage, and adjacent surfaces when designing areas with DG paving. DG should not be used as a walking surface within 25’ of building entries.

i. Utility Structures
   i. All structures at or above grade should be shown to scale in site design drawings
   ii. All above grade metal structures are to be black in color (except as required by Code).
   iii. Standard black paint specification for metals is Kelly Moore Acrylic Metal Primer/Finish DTM 5425-569 Wrought Iron Black

j. Landscape Mulch
   i. Small Fir Bark mulch is used primarily within the central campus at formal landscape areas around buildings.
   ii. Arbor Mulch (also called “walk-on” mulch from PSSI) is used primarily at less formal landscape areas and some pathway applications.
   iii. Refer to UACPD Fact Sheet for mulch standards

k. Stormwater
   i. Stormwater infrastructure design should be coordinated with Stanford WRci and UACPD offices. The prevailing intent is to use regional measures to meet stormwater requirements.
   ii. Use of stone or cobble in the landscape for drainage infrastructure or aesthetic purposes is to be reviewed and approved by UACPD. This includes small areas such as roof drain outfalls.
2. Planting
   a. Planting Design
      i. All hedges are to be a double row. Minimum width of a hedge area is 5’, triangulated
         spacing is typical.
      ii. Plants shall be spaced away from paving edges, never closer than ½ of the given spacing
         for the plant type as noted in the legend.
      iii. Provide generous space around existing and proposed trees in planting areas. When
            feasible, planting and irrigation should be limited to areas outside the dripline of
            established trees.
      iv. Coordinate planting plans and tree locations with utility plans. Avoid planting on top of or
            in close proximity to utilities, and work to coordinate utilities routing to avoid conflict.
      v. Trees (existing and new) should be coordinated with the Lighting Plan to keep from
         impacting design light levels.
      vi. Design planting to maintain visibility at pathway corners, intersections, crosswalks, etc.
          Planting at these areas should be kept lower (2-3’ max.)
      vii. Plants should be 5 gallon size or larger where foot traffic is present. 1 Gallon plants are
           only approved in specific situations or particular planting situations.
      viii. Turf shall not cover slopes that exceed 3:1. Turf areas must be usable, not purely
            ornamental.
      ix. Artificial turf is not a standard material and is not encouraged.
   b. Plant Selection
      i. Plant selection should consider climate adaptation and efficient use of water resources.
         Native, naturalized, and Mediterranean climate zone species are encouraged. Plants
         known to be or defined as invasive shall not be used.
      ii. Groundcover planting must be >12” high unless otherwise approved.
      iii. Grasses and decorative grass-like plants are to be used sparingly in central campus areas
           per Stanford Landscape Design Guidelines. They may be used more freely at more
           naturalized areas at the campus perimeter of campus.
      iv. Use of annuals in planting areas is not allowed.

3. Irrigation
   a. Irrigation Design
      i. The Stanford lake water system is the preferred irrigation source for all landscapes.
      ii. Landscape irrigation shall be designed for maximum efficiency and will comply with all
          applicable regulations and FDG standards.
      iii. Drip irrigation is typical for most planting areas. Slopes and turf areas are exceptions.
          Valve boxes shall be black except at turf areas, where they are green.
      iv. Trees should be irrigated on dedicated stations with bubblers for irrigation.
      v. Vines should typically be irrigated by bubblers.
      vi. For Stanford transplanted trees, irrigation bubblers should be provided for in the plan
          notes and acknowledged by the Contractor.
          1. Whenever possible, transplant trees should be fed from a separate irrigation
             valve.
          2. Final locations and sizes of transplant trees may not be known during project
             design. Transplant tree locations, sizes, types will be coordinated by UACPD.
b. Irrigation Equipment
   i. Valve boxes shall be placed in groups of no more than 3 in a row, unless otherwise approved.
   ii. Valve boxes should be thoughtfully located in the irrigation plan. They should not be placed on visual axes or in locations where they detract from other site elements or are visually distracting.
   iii. Location of Lake Water filters, Irrigation controllers, Backflow preventers, Fire Department connections, etc. should be carefully considered and reviewed with UACPD.