



Landscape Services

Safety Standard Operating Procedure

(Revised 1/2023)

Landscape Design

This SSOP provides guidance on the practices established for ***design development and guidance on following OSU Landscape Design Standards***. As with any equipment or tools, the most basic premise for safe operation is reading and adhering to the manufacturer's instructions and warnings. This SSOP is not a substitute for the owner's manual produced by the manufacturer.

Safety Requirements PPE Required Follow OSU dress guideline. A detailed guideline description can be obtained from your supervisor. Follow Posted PPE when visiting job all jobsites which typically requires safety vest, hard hat, eye protection, closed shoes, and pants.

Safety Hazards Vehicle and pedestrian traffic, Underground and overhead Utilities, lifting, bending, overhead objects, dust, noise, sharp objects, blind spots, equipment malfunction, pinch points, hot or cold temperatures, and inclement weather.

Description

Facilities Management Landscape Services is responsible for the design, installation, and maintenance over 700 acres. We maintain an institutional landscape design approach that promotes an aesthetic, educational, and safe environment for students, faculty, staff and visitors. Landscape campus beautification is an important role in recruiting students and faculty while enhancing the quality of life for everyone that works at or calls OSU home. Landscape design standards must be followed to ensure aesthetic continuity, maintenance affordability, protection of designated greenspaces and tree canopy.

Oklahoma State University has a long tradition of comprehensive campus planning and landscape services has adopted and maintains our Landscape Master Plan. The master plan is an important document to ensure that the principles and values expressed by OSU guide the physical development of the campus, creating framework for future growth and preserves the Universities unique heritage and culture.

The landscape designer must look at function, efficiency, aesthetics, maintenance, and safety when designing the campus grounds. Many aspects go into following these design strategies. Site analysis and campus inventory kick off each design. Maintenance and the art of landscape details ultimately influence and assist with guiding the design to finished project. The list below further elaborates on processes to consider and follow.

Order Of Operations During Design Development

1. Site Analysis Considerations

- a. Pedestrian/vehicle relationships and circulations through campus
 - i. Parking lots
 1. Parking garages

2. Concrete
3. Asphalt
4. Gravel
- ii. Sidewalks
 1. Major 20' with concrete or paver
 2. Primary 10' concrete or pavers
 3. Secondary 5' concrete
 4. Garden pathways 4' decomposed granite
- iii. Traffic flow
 1. Minimize pedestrian/vehicular interaction.
 - a. Crosswalks, signage, and design details that assist with providing attention to high traffic areas
 - b. Post and chain, plantings, or objects to direct traffic and prevent unwanted paths
 - c. Considered the shortest routes
 2. Controlled access routes
 3. Bicycle circulation
 4. Consider wall height to prevent tripping and barriers
 - a. Create visual barrier or accent curbs along sidewalks
 - b. Consider skate stops or paving details to prevent damage to walls
- b. OSU historical overview, greenspace, and campus architecture
 - i. Neo-Georgian architecture
 1. Cohesive architecture
 2. Brick
 3. Cast stone accents
 4. Central entryways
 5. Decorative cornices
 6. Tiled hip roofs
 7. Prominent chimneys
 - ii. Designated greenspaces
 1. Grand open spaces and street scaping create strong campus visual character, create sense of identity, and an image of excellence
 - a. Identify and development landscape areas with this vision in mind creating institutional designs impacts
 - b. Landscaping and trees are a major investment and asset to the campus and should be protected and preserved to the greatest extent possible.
 2. Gateways
 - a. Obelisk
 3. Focal point/ landmarks
 - a. Study and exemplify campus architecture.
 - b. Design key areas for future art placeholders, sculptures, and topiaries
 - c. Cohesive institutional landscape beds
 - iii. Promote and educate design intents
- c. Utilities
 - i. Attempt to place direct utilities under hardscapes
 1. Attempt to space large planting away from utilities as much as possible

- ii. Transformers/switches
 - 1. Plantings (grasses and perennials approved for screening)
 - a. Keep 10' from front
 - b. 5' foot around sides
- iii. Fire hydrants –pressure color code on the caps
 - 1. Do not block from view
- iv. Valves/manholes
 - 1. Keep open view
- v. Steam tunnels
 - 1. Place under concrete or mulch

2. Design Safety Considerations

- a. Lighting ([Engineering Guidelines | Oklahoma State University \(okstate.edu\)](https://fm.okstate.edu/osu-engineering-guidelines.html))
 - i. Pathways: 1 fc average with an average to minimum ratio of 4:1, which calculates to a minimum illumination of 0.25 fc
 - ii. Parking lots: average of 6 fc with a 6:1 ratio for a minimum of 0.5 fc
- b. Security
 - i. Prevent dark locations that create hiding points
 - ii. Keep clear line of site near entrances and intersections
- c. Universal campus accessibility principles.
 - i. Unprotected edges (less than a 36" drop off)
 - 1. Tripping hazards
 - ii. Present wayfinding reference points.
 - iii. Perception of space and flexibility of use
 - iv. Equitable access.
- d. Meet Code and Compliancy
 - i. ADA
 - 1. Maintain proper slope >5% and >2% cross slopes
 - 2. Parking lots
 - a. Correct number and location of ADA access
 - b. Handicap ramp tactile strip
 - 3. Handrails
 - a. Match styles in surrounding areas
 - b. Required for more than 3 step
 - c. Required every 5' off center
 - d. Follow updated building codes given for handrails
 - ii. Fire marshal
 - 1. permits
- e. Engineering guidelines <https://fm.okstate.edu/osu-engineering-guidelines.html>
 - i. Perform utility locates
 - ii. Pothole to verify location and depths

3. Site Specific Considerations

- a. Sustainability maintenance initiatives
 - i. Selective hardy proven Oklahoma plantings
 - ii. Encourage use of native plantings, perennials, and ground covers
 - iii. Design with mass planting, repetition, for cohesive campus design
 - iv. No mow areas

- v. Stormwater management
 - 1. No rip rap (concrete or pecan valley gravel)
 - 2. Prevent water flow over sidewalks or excessive drainage to beds
- vi. Design for shade
- vii. Utilize successful green initiatives
 - 1. Comprehensive recycling program
 - a. Composting mix
 - b. Mulches (woodchip)
 - c. Landscape fabric for rock mulches
 - 2. Integrated Pest Management
 - a. Plant insect and disease resistant varieties
- b. Grounds maintenance
 - i. Minimum slope grades 5:1
 - ii. Turf varieties and landscape impact
 - 1. Eliminate poor mowing angles
 - 2. Dead zones
 - 3. Grading
 - 4. Aeration
 - 5. Edging
 - a. Bed control method
 - iii. Limit narrow beds
 - iv. Screening/directing traffic
 - 1. Use of plantings and barriers (post and chain)
 - v. Design with efficiency of materials towards maintenance
 - vi. Consider and account for long term maintenance of materials
 - 1. Establish maintenance plan and bcl
- c. Health/ wellness
 - i. Pleasurable learning plazas and walkways
 - ii. Educate purpose of design intent

4. Tree Protection considerations (Please Refer to the Full Tree Protection Standard)

- a. Trees must be shown with canopy width on site surveys
 - i. Consider decomposition efforts before and after a project
 - ii. Consider root competition
- b. Tree protection fencing will be installed prior to construction by OSU Landscape Services
- c. Tree protection guidelines must be in construction bid documents.
- d. Pre-construction contractor meeting will include mandatory tree protection training
- e. No equipment, materials, or construction activities allowed under the tree canopies without guidance from university arborist.
- f. Maintenance in the tree protection areas will be done by OSU Landscape Services

5. Irrigation Considerations (Please Refer to the Full Irrigation Standards)

- a. Review existing irrigation system as-builts (if applicable)
 - i. Test/calibrate system
 - ii. Irrigation isolation design if modify existing system
- b. Controller
 - i. Placement – outside preferred, key if in a locked room
 - 1. Outside location to be approved by OSU Landscape Services

- 2. Inside requires a 1" sleeve to be installed for 2 wire from the controller to the field.
 - a. Sleeve must exit below top of soil grade and extend one foot past any concrete
 - ii. Wiring – 120v direct wire dedicated circuit
 - iii. Hunter ACC-99D
 - iv. Data drop
 - v. Ethernet module – Hunter Com Lan module 2wire
 - vi. Sprinklers (location, size, type of valve)
 - c. Back flow
 - i. Size depends on location and source
 - ii. Water meter
 - iii. Backflow is preferred indoors
 - 1. Wiring – 120v dedicated circuit GFI outlet
 - 2. If outside required hotbox design considerations
 - d. Irrigation sleeves
 - i. 4- and 2-inch sleeves schedule 40 (unless otherwise designed)
 - ii. Tracer wire required with any sleeve installation
 - 1. #12 solid copper
 - 2. Purple insulation
 - iii. Sleeves to be no less than 24" deep and no more than 36"
 - e. Drip
 - i. Valve box size and location
 - ii. Hunter .9 GPH
 - iii. 18-24" spacing or depending on design
 - f. Quick connects

6. Hardscape Materials (Please Refer to the Update Landscape Services Design Standards)

- a. Consider maintenance/efficiency of maintaining the design as well as life/maintenance expectancy of materials over time
- b. Pavers
 - i. Plazas, pathways, bench pads, trashcan pads, light post bases, bike rack pads, sign bases
 - 1. Holland 98, 6cm, autumn blend 4x8 pavers, chamfered edge
 - 2. Enduracolor facemix technology
 - a. Enduracolor products are manufactured in a two-step process which combines a base of coarser aggregates for a stronger foundation, with concentrated color and wear-resistant finer aggregates on top. Enduracolor products are highly resistant to fading because the top layer prevents large, lighter color aggregates from showing through.
 - 3. Keystone product
 - ii. Legacy walk
 - 1. Holland 98, 8cm, Autumn Blend 4x8 permeable pavers, chamfered edge
 - 2. Keystone product
 - iii. Monroe/vehicular traffic areas
 - 1. Parkway Pavers OSU orange, 8cm
 - 2. Parkway pavers charcoal, 8cm
 - 3. Keystone product
 - iv. Some designated walkways/red carpet entry

1. Steel city redburn clay pavers , 2-1/4 x4x8, Solid Clay pavers, square edge (glen gary red was discontinued)
2. Trinity brick sales, Iowa plant
- v. Gallagher Iba – OSU Letters
 1. Endicott-clay, dark ironspot black, square edge clay pavers, 2-1/4 x 3-5/8 x 7-5/8
 2. Chandler materials
- vi. All pavers must be sealed
 1. SureBond 1300 sealer
 2. Joint stabilizing sealer
 3. Supplied by Keystone
- c. Natural stone
 - i. Chopped brown hackett stone
 1. Hackett arkansas
 2. Grey mortar
 - a. deeply raked joints (minimal mortar show 1/2" max)
 3. Custom sizes depending on site
 - ii. Field limestone (Theta Pond)
 1. Web wall stone
 2. Mortar spec mix 400
 - a. Raked joints 2" max
 3. Silverdale Kansas
 - iii. Oklahoma Chop stone (edging)
 - iv. Pecan Valley Gravel (rock mulch)
 1. 4-6"
 2. Fabric
 - v. Decomposed Granite
 1. gold or 3/8 minus clean
 2. Fabric
 - vi. Wildhorse cut stone
- d. Concrete
 - i. No concrete modular wall blocks to be used
 - ii. 4" minimum for secondary sidewalks or paverpads
 1. #4 rebar and doweled
 - iii. 6" primary sidewalks
 - iv. Broom finish
 - v. Sawcut control joint
 - vi. Ivory expansion caulking

7. Site Furnishing (Please Refer to the Update Landscape Services Design Standards)

- a. Trash/Recycle Receptacles (Victor Stanley Black)
 - i. Each location should include a set (trash and recycling can)
 - ii. Signage (complete with sign shop)
 - iii. Plastic liner with interior latch
 - iv. Place at intersections but not in direct line of site
 - v. Prevent placement at main entry locations
- b. Benches

- i. DuMor series 58 bench or backless 92 series (black) 6' or 8'
 - 1. Donor bench (foundation assisted)
 - 2. Hardscape base and bolt down should be consider
 - ii. Hackett stone benches
 - 1. Cut top stained rounded edges
 - 2. Can be place in turf, garden beds, and hardscapes
 - c. Bike loops
 - i. DuMor black imbedded option preferred
 - ii. Install on concrete or paver pad (require 9' width)
 - iii. Spaced 3' apart
 - iv. Consider location and cycling flow of traffic
 - v. Easy access but not along main entrance
 - d. Street light assembly – Holophane single fixture
 - i. SiteLink pole
 - 1. 24" North yorkshire base
 - 2. 21' Height
 - 3. Dark bronze color
 - ii. Cross arm
 - 1. ATC single arm
 - e. Street light assembly – holophane double Fixture
 - i. SiteLink pole
 - 1. 24" North yorkshire base
 - 2. 21' Height
 - 3. Dark bronze color
 - ii. Cross arm
 - 1. West liberty twin cross arm
 - f. Parking lot light assembly – halophane double fixture
 - i. SiteLink pole
 - 1. 24" North yorkshire base
 - 2. 21' Height
 - 3. Dark bronze color
 - g. Pedestrian light assembly -holophane
 - i. SiteLink pole
 - 1. 17" North yorkshire Base
 - 2. 12' Height
 - 3. Dark bronze color
 - h. Bollard light assembly -holophane columbia
 - i. Bollards
 - i. Reliance Foundry Model R-7539
 - ii. Black
 - iii. Different bases depending on if it is removable or not, and what the location is
 - j. Tables
 - i. Landscape forms (center of campus)
 - 1. Steelhead Table with perforated top and Catena Base
 - 2. Free standing of Carousel design
 - 3. 42" or 36"

- 4. Round
 - 5. Black
 - ii. Uline metal table (less expensive for outer portions of campus)
 - 1. Black
 - 2. Round rectangle and square layouts
- k. Chairs
 - i. Tropitone veercast dining chair (discontinued but can custom order)
 - 1. Black
 - 2. 30lb
 - ii. Landscape forms traverse
 - 1. Black
 - 2. Perforated with or without arms
 - 3. 18-20lbs
 - iii. Sitiescapes cityview free standing chair
 - 1. Post mount or free standing
 - 2. Black
 - 3. With or without armrest
 - 4. 55lbs
 - iv. Victor Stanley prscc-8
 - 1. Black
 - 2. With or without armrests
 - 3. 70lbs
- l. A Frames
 - i. Hardscape locations (LS Design manager approved)
 - ii. Clampitt Paper
 - iii. Swing Pro Sign Frame with Water/Sand base
- m. Skate Stops
 - i. G012ss,brushed 316 stainless g012(for 1/8 radius)
 - ii. Supplier: Skate Stoppers
 - iii. Space 36 off center
 - iv. Do not install at grout joints
- n. Landscapeforms power pedestal
 - i. Black
 - ii. 46.5"x8"x6"
 - iii. Charging station sticker
- o. Planters
 - i. Irrigation or Mono plant self-irrigation system
 - ii. Drainage system to capture water existing planter
 - iii. Dura art stone
 - 1. Campanile
 - 2. Precast concrete, GFRC or Glasscrete
 - 3. Nordic Cream with light sand blast finish
 - 4. Round or Square
 - iv. Chandler
 - 1. Barcelona
 - 2. Color buff light sand texture

- p. Flag poles – silver
- q. Post and chain
 - i. Hoover fence company
 - ii. Boston garden post
 - iii. Cast aluminum cap, extruded aluminum post, galvanize steel chain
 - iv. 5/16” chain, black powder coated
 - v. 48” post length
 - vi. 8-10’ spacing per post
- r. Signage
 - i. Wayfinding signage
 - 1. OSU building signs
 - 2. Campus architect approved lettering
 - 3. Paver sign base
 - ii. Donor signage (follow OSU board naming policy)
 - 1. Review donor recognition with Campus Architect
 - a. The generosity of family made this garden possible
 - b. Garden made possible through the generosity of family
 - iii. Donor benches (follow sop on donor benches)
 - iv. Bronze plaques
 - 1. Review plaque guidelines
 - 2. Object/art plaques
 - a. Helvetica bold
 - 3. Building plaques
 - a. Times new roman bold
 - v. Caststone
 - vi. Engraved pavers (<https://www.fundraisingbrick.com/>)
 - vii. Granite markers (greekwalk)
 - viii. Parking signs – color beige
 - ix. Building signs -brick red
 - x. Garden/tree plaque signage with QR code
 - xi. Hackett stone garden map signage
 - xii. OSU lettering branding
 - 1. Brand management approved landscape font (sentinel)
- s. Screening
 - i. Dumpster Enclosure
 - ii. Brick black gate
 - iii. Gates close
 - iv. Black metal louvers
 - v. Breathable screen
 - 1. Brand management approved campus prints
 - vi. Plantings
 - 1. Hedgerows
 - 2. Trees
 - 3. Garden beds
 - vii. Walls
 - 1. Brick and caststone

- 2. Natural stone wall
- viii. Built landscape features