Campus Tree Care Plan

Purpose

The purpose of the plan is to establish a committee to oversee the planting of new and inventory of old tree species on ASU Main campus. A secondary purpose of the plan is to raise awareness of the arboretum and to increase the visibility of its trees and plants for student and teacher education.

Department Enforcing Plan

Facilities Management and Grounds Services will be responsible for the upkeep of all trees and plants and will set criteria to follow the guidelines suggested by this care plan.

Establishment of Advisory Committee

1. Terms of representatives – The representatives will be part of the committee for the term of one year. After their year of service they can continue on at the approval of the arboretum program coordinator. There will be a discussion moderator from the grounds facility office to keep the committee on agenda during meetings.

2. The representatives will be part of a roundtable discussion that will meet quarterly to discuss the committee’s agenda, pending projects, and to monitor the progress on current activities.

3. Roles and responsibilities of the committee

1. The committee members are to attend the quarterly committee meetings and provide feedback and suggestions on issues pertinent to the arboretum and care of the donated trees.

Tree Care Policies

1. Planting- When planting and fertilizing new trees, recycled compost from Ken Singh’s farm is to be used.

   • At ASU at the Tempe campus, trees in pedestrian walkways and/or adjacent to sidewalks shall be single trunk (i.e., tree should have a single-trunk for at least 5 feet before branching out); no multi-trunk trees are allowed in these areas. Trees in lawn areas shall have tree guards acceptable to ASU Grounds Services (Design G & S, 289).

   • Trees planted in lawn areas shall be provided with 24 inches of bare sod free soil beyond and around the full circle of the tree. The cambium layer shall never be buried. Root crown shall be 1 inch above grade. Temporary berms for initial water are acceptable (Design Guidelines & Standards, 289).

   • The use of 15 gallon trees shall be discouraged in mature landscape areas (Design G & S, 289).

   • Deciduous trees shall be planted no closer than 8 feet from any walk or drive; evergreens no closer than 2 feet greater than the mature radius of branching.
Trees with low, horizontal growth habit or trees with thorns shall not be planted next to streets, bike paths or lanes, or next to sidewalks. (Design G & S, 290)

- All trees shall be planted in holes dug to specifications recommended by the American Nurseryman’s Association and shall be tilled a depth of 12 inches deep at a diameter of 5 times the root ball size. Trees shall be started according to ISA guidelines. (Design G & S, 290).

- All 24-inch (and above) box trees or palms shall have perforated, capped and vented schedule 40 air sleeves at each corner of the root ball (Design G & S, 290).

- Soil shall not contain herbicides and manure use is not acceptable. Trees should have a planting media mixed of 22 c.f. sphagnum peat, 4 lbs. soil sulfur, and 3 lbs. fertilizer. Chemical additives should be of agricultural grade and used as necessary to maintain a pH of 6.5 to 8. Commercial bagged fertilizer for trees, shrubs and ground cover shall be Ammonium Phosphate (16-20-0), pelleted form and contain a minimum of 16% nitrogen and 20% phosphoric acid (Design G & S, 291).

2. Landscaping – “All campus plant materials are part of the overall cohesiveness of the Campus Arboretum. The Arboretum at ASU encourages a responsible and balanced approach that promotes the use of diverse, drought tolerant, low maintenance, non-native and native Arizona planting materials” (Design Guidelines and Standards, 288). All landscaping shall be done by ground services in accordance to guideline standards.

3. Maintenance – Maintenance shall begin immediately after each portion of lawn and each plant is planted, and shall continue in accordance with the following requirements:

1. New plantings and groundcovers shall be protected and maintained until the end of the lawn maintenance period or until final acceptance. Maintenance shall include water, fertilizing, weeding, cultivating, mulching, tightening and repairing guys, removal of dead materials and resetting plants to proper grades (Design G & S, 291). Weeding can be done with a variety of tools including the devil’s edge.

2. Pruning shall be limited to the removal of dead plant material or growth that would harm the overall structure and form of the plant (Design G & S, 291-292).

3. Irrigation shall be provided to each plant dependent upon each plant's specific water requirements (Design G & S, 288).

4. Removal

1. Procedure – Before beginning any tree removal operation, the chain saw operator and/or crew leader shall carefully consider the following conditions in
the planning process to address tree and site factors and shall take appropriate actions to ensure a safe removal operation:

1. Surrounding areas including other trees and the tree to be removed;
2. Species and shape of tree;
3. Lean of the tree;
4. Loose limbs, chunks or other overhead material;
5. Wind force and direction;
6. Decayed or weak spots throughout the tree (be aware of additional hazards if these conditions exist in the hinge area);
7. Location and means to protect other persons, property and electrical conductors;
8. Size and terrain characteristics or limitations of the work area.
9. When it is necessary to shorten or remove branches before dropping the tree, the arborist shall attempt to determine if the tree can withstand the strain of the lowering procedures. If not, other means of removing the tree should be considered (ANSI, 15).

2. All big, historic and specimen trees shall be reviewed by The Arboretum at ASU before demolition to determine value and/or salvagability (Design G & S, 277).

3. The Arboretum at ASU reserves the right to relocate, remove, or demolish any heritage tree, memorial tree, or special collection (Design G & S, 277).

5. Prohibited species – Salt cedar tree (tamarisk tree) and the Tree of Heaven (ailanthus altissima). These species are prohibited due to their spreading nature. Root bound trees are not acceptable (see page 289 of the Design Guidelines & Standards manual)

6. Management for catastrophic events- After a catastrophic event teams are sent out into the field to assess damage and document areas of concern. Primary safety issues are dealt with first, followed by general clean up and removal of non salvageable trees. Insurance claims are then filed and replacement trees are ordered and planted either in the same or similar areas if the areas are deemed appropriate. Sometimes, areas are not deemed appropriate and an alternative site will be chosen. Often, volunteer help is enlisted to plant trees at these times, particularly if there are a large number of them to be planted at once. It is thought of as an opportunity to get the campus community involved and to take some ownership in a small part of the campus. Arboretum maps are then updated with any changes.
Protection and Preservation Policies and Procedures

Policies:

A. Trenching

1. Main lines shall be a minimum of 18 inches deep; auxiliary lines shall be 4 inches deeper than the bottom of the head being used.
2. Lines bordering curbs, sidewalks or other hard surfaces shall be held 12 inches away to allow for maintenance and access to the lines.
3. Sand shall be used in all trenches as bedding material for all PVC piping and also used as a covering for all piping. There shall be a minimum depth of 2 inches over the top of all piping.
4. Pipe, drip tubing and control wire being routed under walks, roads or other hard surfaces shall be installed in schedule 40 sleeves. (Design G & S, 284).

B. Preservation procedures - Historic trees are appraised using a national standard developed by the Council of Tree & Landscape Appraisers. The cost approach method is generally used to determine value in these cases.

The steps of preservation are as follows:

1. Complete a tree stand delineation- which is a summary of the tree population at standing level. The factors to take into account are species compositions, age of the trees, density, diameter distribution, and condition of the trees.
2. Survey the trees within the planned development area- collect detailed information about the trees in the immediate area where construction is to take place.
3. Identify trees suitable for preservation- those to be saved should be healthy and sturdy. They “should be evaluated based on species tolerance, size, age, and condition” (Clark, Harris, & Matheny, 258).
4. Take into account the potential impact caused by construction. Review construction plans and all stages of development to assess effects.
5. Suggest modifications to construction and development plans: if there are areas that may be impacted too severely suggest changes that may be made to reduce the severity.
6. Identify work that may be needed prior to construction- treatments such as pruning, irrigation, fertilization, mulching, and pest control may be needed prior to beginning development of the area.
7. Make specifications on tree preservation- this is how and what work will be performed on the trees.
8. Monitor trees during construction- there should be an arborist on hand who can evaluate and treat any damage or council on the health of the trees or if damage should occur.
9. Make a post construction maintenance plan- there should be routine monitoring
of health and stability of the trees in the construction area (Clark, Harris, & Matheny, 258).

**Goals and Targets**

1. To raise awareness and visibility of the arboretum at ASU and educate the public about the flora on campus.
2. The completion of a campus wide inventory with GPS coordinate mapping.
3. To collect an oral history of the trees at ASU Main to connect the students to the plant life through campus history.

**Tree Damage Assessment**

1. A representative from the grounds services department should assess the damage and if at all possible must try to save the damaged specimen.
2. The damaged specimen should be boxed and moved to a suitable environment within the requirements for that species (i.e. shade and water requirements must be met).
3. In the case of vandalism in which an identifiable person is responsible, appropriate legal action must be taken for destruction of property.
4. In the case of damage or vandalism without an identifiable person, a report must be turned into the proper insurance contact to replace the damaged specimen.

**Prohibited Practices**

1. When setting signage (i.e. genus and species placards) screws and nails may not be driven into the specimen. Any signage must be placed on a post driven into the ground without contacting the root system.
2. Organic practices for treating diseases and pests must be used. However, in extreme cases minimal amounts of pesticides may be warranted.
3. All pruning and trunk painting must be done at set annual times to prevent stunted growth of trees.

**Terminology**

**Berm** – This is an earthen or sod wall used as a barrier.

**Caliper**- Calipers are a measurement tool comprised of a fixed arm, scale and moveable arm. They are placed around the bole of the tree to measure diameter.

**Cambium**- is a layer or layers of tissue, also known as lateral meristems, which are the source of cells for secondary growth.

**Devil’s edge**- is a weed extracting tool made of recycled materials that was designed at ASU.
Communication Strategy

To communicate the needs of the tree advisory committee and arboretum we will begin a website (http://sites.google.com/a/asu.edu/tree-advisory-committee/) to inform the college community and contractors. It will contain our meeting minutes, goals, and current projects. It will also have contact information for questions and suggestions. There will also be a space dedicated to our Arbor Day tree planting event.

References


ASU Design Guidelines and Standards (internal document). Revised February 2007, SASC Southwest LLC.