

End of Semester Wrap Up! HORT 308 Spring 2012



All Text And Images Are Copyrighted As Otherwise Indicated Or By:
Dr. Michael A. Arnold, Texas A&M University, Dept. Horticultural
Sciences, College Station, TX 77843-2133



Construction Damage



AOK → Improper Precautions → DOA

Saving In Situ Trees

- No cure for massive root damage exists, only preventative measures truly effective
- Determine which trees are to be saved prior to beginning grading/construction
- Consider likelihood of successful preservation versus preservation costs

Which Trees To Save?

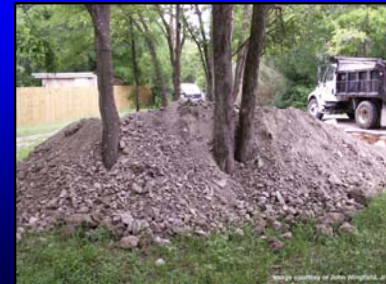
- In consultation with owner(s) and architect
- Consider for each tree;
 - Species, age, health, life expectancy
 - Importance to the landscape design
 - Extent of preservation measures required
 - Cost versus success probability
 - Likelihood of successful preservation
 - Sentimental / historical considerations
 - Potential adaptability to the new environment

Establish a Root Protection Zone

- No compaction of fill in RPZ
- No material storage in RPZ
- No pedestrian or vehicular traffic in RPZ
- Fence enclosing 1.5 to 2 X drip-line
 - More is better
- Mulch & fertilize, irrigate if needed
- Make clean pruning cuts if necessary
- If must trench do it by hand to preserve large roots



Real Life Example, What A Place For Sewer Line Fill?



Easier To Preserve Groups Of Trees Rather Than Individuals



Plant Selection & Handling

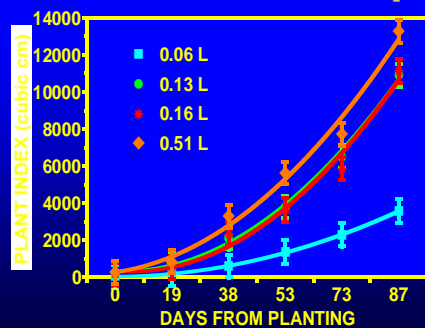
- Do not plant or purchase diseased, damaged or infested plants
- Avoid plants with poor growth form
- Purchase from a reputable dealer
- Transport in covered vehicle or with wind barrier
- Store in filtered shade until planted
- Keep roots cool & moist until planted
- Carry plants by rootball/container, not by the stems

Herbaceous Plants

- Frequently sold in flats or as 1 gallons
 - Larger sizes for instant effect
 - Larger plants tend to remain larger plants throughout growing season
- Avoid leggy or overgrown plants
 - NO deep planting, place the crown at or slightly above original grade
- Best if not yet in bloom
- Buy acclimated plants, not directly from the greenhouse, & no excess growth regulators, know your supplier's practices!!!!



Small size annuals never catch up



Bare-Root Nursery Stock

Used only in dormant / quiescent state

- Possible exception are plants from Missouri Gravel Bed System

Cheapest, but often least desirable type of stock

Harvest & storage conditions are critical

- Be leery of "common storage", desiccation often occurs
- Should be root pruned in previous years before lifting

Upon receipt, remove shipping materials, soak roots for several hours, store in cooler with roots wrapped in moist sphagnum moss or similar materials or heel in immediately



Balled-&-Burlapped (B&B)

- Typically field grown, dug, rootball wrapped in burlap or plastic
- Planting season unlimited, but expensive and heavy with high shipping and handling costs
- Avoid plants with cracked or loose rootballs
- Lift by rootball not stem
- Avoid excessively large or small rootball to shoot ratio
 - Large root:shoot ratio may indicate poor vigor
 - Small root:shoot ratio may indicate inadequate ball
 - Palms are an exception to sizes



Plant Specification Aides

- Plant Specifications:

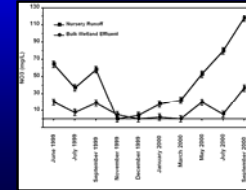
- American Nursery & Landscape Association specification manual
 - <http://www.anla.org/%5Cdocs%5CAbout%20ANLA%5CIndustry%20Resources%5CANLStandard2004.pdf>
- Installation & Maintenance Specifications:
- ANSI standards from International Society of Arboriculture
- Watson, G.W. and E.B. Himelick. 1997. *Principles and Practices of Planting Trees and Shrubs*. Intl. Soc. Arboriculture, Savoy, IL. p. 199.
 - <http://www.isa-arbor.com/home.aspx>

Miscellaneous Design Considerations

- Water quality preservation/pollution
- Water harvesting in arid landscapes
- Green roof / living wall technology
- Container gardens
- Pest issues
- Fire prevention in landscape design & maintenance
- Energy conservation issues

Water Quality / Pollution Prevention

- Bioswales
- Constructed wetlands
- Rain gardens



Green roof Technology Extensive versus Intensive



Living Walls



Energy Conservation / Greenscaping / Ecosystem Services

- LEED Green Buildings
 - <http://www.usgbc.org/DisplayPage.aspx?CategoryID=15>
- Green roof technology
 - Extensive vs. intensive
- Use of deciduous materials for energy balance manipulation
- Carbon sequestration
- Abatement of urban heat island
- Filtration, retention, & detention of runoff
- Cost / benefit ratios
- Lack of information in south & southwest regions of U.S.



Water Harvesting in Arid Regions



Images from:
Harvesting Rainwater for Landscape Use
 Patricia H. Waterfall, Extension Agent
 University of Arizona Cooperative
<http://ag.arizona.edu/pubs/water/az1052/harvest.html>

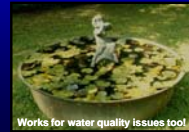


Excellent source of ideas, specifications, and information for calculations



Also see:
<http://rainwaterharvesting.tamu.edu/>

Escape Soil Limitations with Containers



Works for water quality issues too!

Deer in the Landscape

- Dependent upon availability of alternative food sources and deer population
- Protecting plants
 - Repellents are of questionable effectiveness
 - Caging is unsightly, fencing possibility
 - Damage from antler rubbing may be as bad as feeding for young trees
- Very few plants are immune, some are less palatable than others to browsing deer
- Sources of information:
 - *Deer in the Urban Landscape*. John Lipe as revised by Forest Appleton.
 - <http://aggie-horticulture.tamu.edu/archives/parsons/publications/deerbest.html>



"Those deer make mighty fine eat' in & add to holiday festivities too!"

Landscaping in Fire Prone Regions

- Store combustibles away from buildings
- Avoid combustible mulches & hardscape materials
- Space shrubs & trees so canopies do not touch
- Keep wooded "natural areas" 50' from house
- Use more color & turf, less shrubs & trees, close to the house
- Avoid plants that retain dead leaves / branches
- Avoid limbs that overhang structures
- Limb up trees to 6' or more
- Avoid shrubs under canopy of trees
- *Avoid plants with highly combustible substances, like resins
- Prune deadwood & ornamental grasses before fire season
- Keep leaves / trash raked
- Keep plants well watered during fire season
- Use succulent plants with high water content
- <http://passporttotexas.org/firewise-landscaping/>



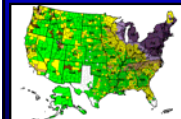
Be Responsible, Obey Quarantine Restrictions



APHIS Fire ant distribution



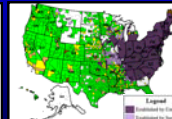
N.A.P.I.S. Emerald ash borer distribution



U.S. Dept. Agric. gypsy moth distribution map



Texas Dept. Ag. Sweet Potato Weevil quarantine map



N.A.P.I.S. Japanese beetle distribution

Curving Question (?): See Syllabus!

"In order for an individual grade to be considered for curving up to the next highest grade, a student must be within 1% (24 points) of the next highest grade and have not missed more than two labs and/or lectures (as evidenced by missed examinations, lecture quizzes, lab quizzes, or bonus point opportunities). If the student has missed more than two labs and/or lectures, then their grade will not be eligible for curving up."

Our interactive grade appeals process?



Materials presented herein are copyrighted as indicated or by the author;
for permission to use or reproduce these images, please write:

Dr. Michael A. Arnold
Dept. of Horticultural Sciences
Texas A&M University
College Station, TX 77843-2133
email ma-arnold@tamu.edu