

## Shade and Street Trees in Town Areas

Over the last 30 years tremendous advances have been made in understanding the limiting factors for tree growth in urban areas. While we do not think of the Vineyard as urban, the immediate conditions that affect the successful establishment of trees planted in our towns are the same as in larger urban cities. It is notable that the lifespan of a typically planted urban tree, is less than 15 years.

### Critical Factors in the Establishment of Shade Trees in urban zones.

- **Soil quality and volume for successful root establishment.** Trees are produced in nurseries using the balled and burlap method. The rootball enclosed in burlap is composed of less than 15% of the original root mass when dug from a nursery. Essentially, the tree when planted is already pre-disposed to water stress, as only 15% (or less) of the root system is moved with the transplanted tree. In nature, and in street tree plantings, the majority of the root mass that supports tree growth is in the top 12 inches of the soil. Given these two factors, it is critical that the planting hole (or pit) is large enough to accommodate root growth. In recent years new designs for planting (tree pits) have changed, as well as new soil specifications that have dramatically altered and improved the success of street tree plantings in urban environments. See ([Using CU-Structural Soil™ in the Urban Environment](#)).

**Plant selection.** There are numerous lists of adaptable tree species for use in urban environments. The wholesale loss of urban street trees to introduced pests and diseases eliminated the American Elm from our street tree inventory and served as a valuable lesson in not putting all of our genetic chips in one basket. Unfortunately, with the loss of the American Elm the next generation of over-planted trees, green ash, Norway maple, honeylocust and several others, became a standard replacement practice. The large planting of a single species of tree, or plants within the same genus (ie. Maples = Acer) has brought about further cataclysmic loss of large (single species or genera) tree plantings. The planting of similar genetic stock in large masses is called a monoculture. It is essential in large scale urban plantings to diversify tree selection to insure that a cataclysmic pest, disease, or event does not eliminate an urban forest. The attached reference document can be consulted for urban plantings on Martha's Vineyard. It can be used as the central document for tree selection for urban environments.

From the Cornell urban tree program:

*“A reasonable strategy for most urban plantings is to limit any one species to between 5% and 10% of a total urban population. Consequently, if a disease or insect infestation should occur, 90-95% of the tree population would remain unaffected and intact. Unfortunately, in most urban areas perhaps only five or fewer species make up the great majority of trees planted.”*

see: (<http://www.hort.cornell.edu/uhi/outreach/recurbtrees/pdfs/~recurbtrees.pdf>).

- **Commitment for after care.** If the two objectives are met of soil quality and proper tree selection, the third most critical factor is a continued commitment to maintenance. Town municipalities must provide financial support for planting, establishment, and follow-up care of

trees, or a tremendous amount of resources will be wasted. Critical factors include the following: watering for establishment and in periods of drought, staking and the maintenance of staked plants after establishment, and protection of the rootzone. Proper pruning to avoid the infection by tree pathogens is also imperative. Poorly pruned trees can lead to structural failure (branch breaking) over time.

- **Historic Trees in Town Centers.** In certain instances a past uniform planting of successful trees can continue to maintain the historic character of a town. These trees should be evaluated given the factors listed above. Also, as the effects of climate change point to a warmer planet, with increased pest and disease problems for plants, tree diversification should be at the forefront.

The Vineyard has a long period of human settlement and a history of stewardship of its tree resources. In numerous towns both big and small (off-island) citizens are taking part in tree plantings. They do so as a gesture of faith in the future and recognizing the human and wildlife benefits that trees give us in our everyday lives. While we can dwell on all the potential problems with trees, we should look at urban tree plantings as an opportunity to create a beautiful, healthier, and more livable environment.

Old Chinese Proverb – *“The best time to plant a tree was 20 years ago, the next best time is now.”*

References:

Recommended Urban Trees – Site Assessment and Tree Selection for Stress Tolerance  
<http://www.hort.cornell.edu/uhi/outreach/recurbtrees/pdfs/~recurbtrees.pdf>

Tim Boland – Polly Hill Arboretum