

# PROPER LANDSCAPING CAN MINIMIZE TREE PROBLEMS IN THE URBAN ENVIRONMENT<sup>1</sup>

by Gordon S. King

Planting of shade and ornamental trees along streets was in fashion long before the utilities, paving and traffic, such as we have today, existed. These trees were planted for shade in summer, esthetic reasons, because ancestors in Europe planted trees along the streets, or to shade the snow and ice on the roads so sleighs could be used for a longer period of time. In the winter packing of snow on the roads was the answer instead of plowing it away.

Many of these trees were readily obtained from swampy areas or hedge rows, and were of common types, such as elms, sugar, red and silver maples, and planted quite close together in the area now classified as being between the sidewalk and the curb. When the roads were cobblestone or dirt and rather narrow, this planting strip at the side of the road provided a fair soil environment for trees.

As these trees grew in height and diameter, and the roots became established in the soil to absorb water, nutrients, oxygen, and give off carbon dioxide, the streets were widened, paved, curbs were built, and the grade level raised around the trees: all of which were detrimental to tree growth. Why many of these trees continue to grow is a miracle.

Over the years more trees were planted in the narrowing area between the sidewalk and curb, and water mains, gas lines, and sewers were installed, resulting in the cutting of tree roots which provided an entrance for fungi. Thanks to Thomas Edison, Charles Hanson, Harold Pomeroy, Leon McGlaughlin, Alexander Graham Bell, and David O'Brien, electric and telephone conductors became quite common. Communities and industries encouraged electric and telephone companies to service their areas. In some parts of the country the respective wires were placed in backyards, or in other areas along the street where the trees were growing.

Now, with new suburban areas being built, and other residential areas requiring more electricity due to the increase in the use of electric devices, our tree problems cry for intelligent planning with cooperation and knowledge.

We are faced with two desirable and necessary objects occupying the same space, and both needed by the community. Communication and electric wires and trees are important to our every-day life, and it would be foolish to say one is more important than the other.

Municipal tree men had only the narrow planting strip in which to plant their trees and the utilities were given the same area (in most cases, by the town fathers) in which to place the poles and wires: neither looking for conflict. But conflicts certainly arose. The early attempts to lessen the conflicts very often resulted in more trouble by all parties concerned.

In my opinion the trimming or removal of street trees for line clearance is merely a temporary step in a long-range tree planting plan.

The answers to our problems consist of the following items that must be considered.

Intelligent planning and understanding by all who are aware of the problems involved is a must. These people who should be concerned are municipal tree men, telephone and electric companies, highway engineers, city and town managers, real estate developers, planning commissions, landscape architects, garden club members, nurserymen and private property owners.

Communication of intelligent ideas is an essential. Meetings such as this, publications on trees by utility companies for wide distribution, the use of arborists as consultants or full time employees of utility companies are all important.

George Blair in his book, *Tree Clearance for Overhead Lines*, published by the Electrical

<sup>1</sup>Presented at the annual convention of the International Society of Arboriculture in Toronto, Ontario in August 1978.

Publications, Inc., mentions the following three things necessary for a utility and street tree plan! "To successfully carry out such a program requires the complete cooperation of all concerned. This consists of three parts: (1) Detailed coordination of the engineering, construction, maintenance, and tree work efforts of the overhead line company. (2) Coordination in design and construction by public officials or their appointees of all functions required of a public thoroughfare. (3) Intelligent correlation in actual application of the results of these efforts emanating from two different sources. This implies that tree clearance can be designed and built for by those concerned just as other highway, street, or wire line requirements are arranged through the right kind of design and construction. Planning to this end requires not only a thorough fundamental knowledge of arboriculture and engineering but a keen appreciation of future tree and overhead line requirements. Correlation of present and future plans by the two or more interested parties is essential if the requirements of trees and overhead lines are to be best realized. In the final analysis, such a system proves most satisfactory, both as to physical results and costs."

What I have said can be found repeated again and again in numerous publications. One was published by the Portland Cement Company in 1923 and I am sure there are other publications that precede this.

What is termed a street tree survey is merely a survey and inventory of existing trees. There are many ways to make a tree survey and no one way is ideal for all situations. In the case of a tree inventory for a city or town any of several ways could be used. The following are various methods that may be used to conduct a survey of public trees:

1. Tally the number and kinds of trees on the streets, parks and other public places by counting and identifying. This will provide an inventory but will not take into consideration the location, condition, problems, and so on. This method is quick but does not provide much information.

2. A more detailed method can be done by using highway or street maps that can be obtained

from the highway or public works departments. Locate each tree on the map with an identification number related to the house number or utility pole number. This can be followed by a letter key for kind of tree, diameter, condition, etc. The map may be used to locate and a book to list other information. Depending upon the amount of information desired, the time to complete the inventory will vary. However, it is a method commonly used and can be used in part with other methods. Mr. Ronald Despres, Public Works Bldg., 455 Worcester Rd., Wellesley, MA 02181 has done such a survey.

3. A combination of highway maps and aerial photographs from your district U.S. Soil Conservation Office can be used. The aerial photographs are very useful for large open areas such as golf courses, parks, country roads, etc., but may apply to street trees.

4. Using a computer program for locating trees by street and house number, kind, size, condition and many other factors has been tried. This has many advantages but time, money, and qualified personnel are a must. William Collins, Park & Forestry Dept., Town Hall, Brookline, Mass. 02147 may be contacted for further information. Also, Dr. Henry D. Gerhold, Penn. State University, College Park, Penna. 16801 has information on tree computer programming.

A disadvantage of methods 1 through 4 is that they deal only with existing conditions. They provide a count and possible existing problems but do not relate to future planting to avoid present mistakes.

5. The so-called Ed Scanlon tree survey and master street tree plan has been used primarily in the mid-west. It is detailed and time consuming and a competent person must carry it out. Seth Swift, Forestry Dept., 37 Park Drive, W. Springfield, MA 01089 has used this method.

6. There are other methods or combinations of surveys but the method favored by the author for the typical residential street is a cross-section of the street showing the present location, kinds of tree, condition, etc. as well as future proposed planting, their location and kind. This is accompanied by a photograph. It can be done quickly, is simple to understand, and inexpensive.

The street cross-section method does not lend itself to rural roads but may be supplemented by aerial photographs or highway maps. Samples may be obtained from the author.

What is Street Tree Planning? It is a "master plan" for future tree planting in a given area so that at maturity the trees will be an asset instead of a liability. It may be put into effect immediately in areas where there are no trees or over a period of 5-25 years in areas where trees are established. It should be a long range program.

Why should we be bothered with an intelligent, long range tree planting plan and how did the problems we have today arise? To me the factors in an intelligent tree planting program are obvious.

### 1. **Select the proper species of trees**

Select the right types of trees for the area so that at maturity the trees will be an asset instead of a liability. This brief sentence covers a multitude of ideas and sins.

- a. Select trees so that at maturity the tree fits the area without interfering with buildings, travel on sidewalks or streets, curbs, street lighting, and utility wires and cables. If the area is large, plant a tree which will be large at maturity; if the area is confined, plant smaller growing trees or columnar type trees.
- b. Select trees that are hardy for your planting zone.
- c. Vary the species, genus, and family of trees to be used so that if a given disease occurs, only a limited number of trees will be affected.

### 2. **Good growing conditions**

The trees should be planted in good soil that is fairly well drained and at the exact depth at which they were formerly growing. The hole should be larger than the spread of the roots. For further information on good methods of planting trees, refer to the various publications on transplanting.

### 3. **Good maintenance**

Watering, staking, pruning, mulching, spraying, fertilizing and etc. are often necessary when warranted.

## **Summary**

A good Master Street Tree Plan has many ad-

vantages and no disadvantages, providing the above points are considered. These advantages are as follows:

1. Less interference with buildings.
2. Fewer tree disease problems.
3. Lower tree maintenance from the standpoint of trimming, removal, and spraying.
4. Less or no expense when streets are widened.
5. Less damage to sidewalks and curbs.
6. Esthetically more pleasing.
7. Safer to the public using the roads and sidewalks.
8. Lower trimming and removal costs to utilities.
9. Less outages of electric and telephone services. This is of course, more pleasing to homeowners as well as the utility companies.

We all have a general idea of what a Master Street Tree Plan is, its objectives and advantages — so what and where do we go from here?

Fortunately, we have a state law in Massachusetts, General Laws c. 87, sec. 7, permitting the planting of public trees on private property where growing conditions are normally better, and fortunately some cities and towns have an ordinance requiring a sub-divider or real estate developer to plant trees in the development at his expense but under the supervision of the municipal tree man. Unfortunately, this practice is not too common.

We are faced with several governmental problems that may arise and result in a good tree planning program not being carried out. A head of a Department of Public Works may absorb the duties of a tree warden, disregard his advice and carry out a program of his own. A town or city manager may assume he knows all the answers and carry out a tree program of his own; or an elected tree warden may not be re-elected and his replacement may fail to carry out the established tree plan. Personality, education, cooperation and communication are the factors that are most involved in the above problem.

*Landscape Architecture & Regional Planning  
University of Massachusetts  
Amherst, Massachusetts*