### Archive for January 2012

### **Trees And Sewer Lines**

Monday, January 2nd, 2012

One of the lasting myths of urban tree existence is that tree roots grow into sewer lines and thus cause all sorts of problems and expensive repairs. Nothing could be further from the truth.

Tree roots grow best through soil that provides favorable conditions of moisture, texture and oxygen. Normally these conditions are found in the upper two feet of the soil profile, and that's where most of the roots are found. In better soils, roots may find satisfactory conditions deeper than 24 inches, and they may grow deep enough to encounter a properly installed sewer line. However, nothing untoward happens until the line breaks and/or the joints start leaking, oozing nutrients and water into the surrounding soil. Nearby roots then begin to thrive and grow rapidly. They can enter the defective pipe and and eventually block the flow of the sewerage.

Problems with sewer lines and tree roots can be avoided by:

1. Proper construction of the line, including tight joints and a firm soil bed that won't settle unevenly.

2. Repairing or replacing defective lines. Repeated blockages may be due to a collapsed or badly damaged pipe.

3. Employing professional contractors who utilize the latest materials and techniques when installing sewer lines; and abide by, or exceed, applicable building codes. Initially, more expensive (maybe) but more cost effective in the long term.

So.....for all of you conspiracy theorists out there.....forget about it! Tree roots do not get together and say, "Oh Boy! There's a neat sewer line over there. Let's grow over, punch a hole in it, and gets its nutrients and water." Ain't gonna happen.....

#### **Roots Grow In The Ground, Not On it!**

Sunday, January 8th, 2012

Many homeowners complain about exposed roots of larger trees that seem to have grown on top of the ground. Let's get real here.

Tree roots grow in the soil not on top of the soil. If the roots are exposed, it means that the soil has been removed by some means; mostly erosion, but also by construction work, or excessive raking of leaves and other natural debris which prevents the formation of new soil that would otherwise cover shallow roots. Under good conditions, roots grow in the soil where satisfactory supplies of moisture and nutrients are found. In natural settings, where very rocky or very wet conditions (such as in a swamp), are roots forced to grow near the surface, and these conditions are very seldom selected as home building sites. Thus, something has caused the roots of larger trees to become exposed, where they interfere with mowers and prevent grass from growing; much to the chagrin of some homeowners.

To prevent exposed roots and lawnmower conflicts:

1. Break up compacted soil around new construction before adding topsoil and planting trees.

- 2. Reduce or eliminate raking, power vacuuming, and "thatching."
- 3. Cover exposed roots with a *thin* layer of good soil.
- 4. Create gracefully designed mulch beds over the exposed root area.
- 5. Develop a flower, shrub, or ground cover area that doesn't need mowing.

### Myth: A Little Trench Won't Hurt

Monday, January 16th, 2012

Most people would agree that digging a large and deep trench, or ditch, through a bunch of tree roots will hurt the tree. Anyone who has ever dug a trench with a hand tool can vouch that tree roots are a bane to a quick and easy job, even though they realize they may be hurting the tree as they slice, dice, and pull at the offending tree lifelines. What many folks don't realize is that even small trenches, dug to install a sprinkler system or telephone line, e.g., can do just as much damage as a deeper diggins'. REMEMBER: MOST OF A TREE'S FEEDER ROOTS ARE IN THE UPPER TWO FEET OF THE SOIL. So, if you dig a narrow trench (say 2-4" wide ) only 18 " deep, you have still cut off a generous portion of the buffet line to the tree. A cut root is a cut root, no matter how it was severed.

Some techniques to minimize damage to trees from *any* kind of trench are:

1. Detour around the dripline of the tree. There is nothing sacred about a straight line for an underground pipe or cable, except in our own minds or sense of order.

2. Tunnel when roots cannot be avoided. Expertise and equipment are available to do this kind of work, and it may not be any more expensive than other trenching techniques.

3. Get expert assistance and/or advice, if you are unsure about how to proceed with your specific project. The National Arbor Day Foundation has a 32 page bulletin for sale (\$3.00) entitled *Trenching And Tunneling Near Trees* That offers a wealth of information on the subject, and has specific advice that fits many situations. Check out their website for ordering information: www.arborday.org

# **CUTTING ROOTS HURTS A TREE!**

#### Myth: Trees And Utility Lines Are Incompatible

Tuesday, January 24th, 2012

One thing I've learned through many years of observing people's reaction to tree/utility line conflicts, particularly after downed trees cause a power outage, is this: people like their electricity better than they like their trees. When they flip the switch they expect the lights, heat, and/or A/C to come on. Their comfort level, at all times, is more important than their *beloved* tree(s) that they kept the utility company from pruning properly when there was no emergency. Then, it is the utility's fault that they are in the dark and are cold or hot depending on the season. Our dependence on electricity makes any interruption in service unacceptable to the majority, so trees, and the people who try to manage their care, are demonized; resulting in drastic action against the trees such as topping, unnecessary removal, and damaging "hacking off of perfectly good limbs that "might" come down in the future. All this gives rise to the idea that trees and utility lines cannot co-exist, so "we have to get rid of those damn trees!"

Management of trees and utility lines occupying the same space can be difficult, but not impossible. I've provided many examples in previous entries, concerning techniques that work well in allowing trees and the lines to coexist. It is probably a good time to reiterate some of these techniques, while adding a couple I may have missed. The storm season is always one cold front away, and could appear at any time in the form of ice, wind, heavy snow, etc. Herewith are some ideas for consideration:

1. Plant, or get, the right tree in the right place to begin with. This will solve over 90% of the problems that urban trees may face during their life. This is particularly true with regard to utility line conflicts. The following illustration provides a general idea of this concept (all illustrations and photos are from the National Arbor Day Foundation):



2. Must we always be doomed to having short trees under utility poles along our streets? Not necessarily. Maybe extra tall poles can be used, thus allowing taller trees to be planted underneath. It's worth consideration:



If extra tall poles can be used to span overpasses, they also offer potential for use around tall trees.

3. Place utilities underground! OK. But, it must be done carefully or trees will still be damaged:



4. Use special pole construction such as alley arms, , compact spacer cabling, or bundling:





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There are additional techniques out there now, and maybe yet to be developed, that are meant to avoid or lessen tree/ utility line conflicts. Another good one already available is to place the lines in alley ways or backyard easement areas; thus allowing tall trees to flourish along streets and in front yards, making them green and shady. Which adds to the "curb appeal" of one's property, and adds to everyone's environmental enhancement.

It would also be good if we didn't get so upset during an emergency that we force drastic action on "those damn trees," that we might regret later. Trees make our lives better, and can do so for a long time if cared for properly.

## **Tree Roots Damage Sidewalks!**

Monday, January 30th, 2012

Really? If tree roots really cause damage to sidewalks, what exactly causes the damage to sidewalks that do not have trees growing anywhere close to the damage? What does cause the damage on the treeless segments? It is the same things that cause most sidewalk damage in segments where trees are present; **POOR CONSTRUCTION AND SOIL CONDITIONS!** 

Sure, tree roots sometimes help lift or crack sidewalks, but the real culprits are unstable soils, and construction techniques that are not suitable for the unstable soils. Because of the differences in soils, the

same construction techniques cannot be used everywhere within a community. But this is a common occurrence in many places nationwide. As a result, roots often take a bum rap simply because they follow the gaps created when substandard pavement heaves and settles.

In weak, movement prone soil, extra precautions are necessary when building sidewalks, driveways, patios, etc. This includes laying a 4 to 6 inch base of coarse gravel or stone, and paving with a thicker and/or reinforced concrete. This may be more expensive now, but will be less so in the long run due to the longer life of the pavement. Even in good stable soils, roots can be a scapegoat for damage that was caused by poor construction work such as pouring thinner slabs (to save money), not laying a good base, not reinforcing the concrete, etc.

There are many different techniques available to avoid root and sidewalk conflicts; really too many to relate here. Detailed information can be obtained from the National Arbor Day Foundation, local arborists, and/or urban foresters. Trees and sidewalks are commonly-occurring neighbors in most urban settings. They need to get along.

The attached drawing from The Arbor Day Foundation depicts how tree roots really grow, and should give one a better understanding of that part of the tree below ground. Enjoy.

• A complex network of smaller non-woody Feeder Roots grow outward and upward from the framework roots. These smaller roots branch four or more times to form fans or mats of thousands of fine, short, non-woody roots. These slender roots, with their tiny root hairs, provide the major portion of the absorption surface of a tree's root system. Importantly, absorption of water and elements — especially crucial phosphorus — is aided by symbiotic fungi called *mycorrhizae*. This entire system must compete with the roots of grass, shrubs and other trees.

• The **Framework** of major roots usually lies

less than eight to twelve inches below the surface

and often grows outward to a diameter one to two

times the height of the tree.

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• Because Roots Need Oxygen in order to grow, they don't normally grow in the compacted, oxygenpoor soils under paved streets.

Note: A few species have a **Taproot** that grows straight down three to seven feet or more until they encounter impenetrable soil or rock layers, or reach layers with insufficient supplies of oxygen.

• The Root Collar is usu-

ally at or near the ground-

line and is identifiable as a marked swelling of the

tree trunk.

• Between four and eleven Major Woody Roots originate from the root collar and grow horizontally through the soil. These major roots branch and taper over a distance of three to fifteen feet from the trunk to form an extensive framework of long, rope-like roots which are 1/4 to one inch in diameter. These are important structural roots, supporting the tree against wind, etc.

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