Sidewalks and Trees

Haddonfield’s street trees offer the town’s residents significant economic benefits: lower air conditioning costs due to cooler ambient air temperatures, and higher real estate values due to shaded, more beautiful streetscapes. However, as they grow, our trees can also damage sidewalks, necessitating the repair or replacement of the walkway.

Before undertaking the work on a sidewalk, residents should determine the reasons for the damage. The nearby tree may not be at fault. Sometimes the sidewalk damage is caused by improper construction or by installation that does not take into account the high moisture content of the soil. In those cases, the damage is due to soil heaving during freeze and thaw cycles, rather than the result of the growth of a nearby tree’s roots.

If the homeowner suspects that the sidewalk damage has been caused by the roots of a borough tree, the homeowner should ask for confirmation from Haddonfield’s Department of Public Works personnel. Depending on the size and configuration of the tree’s roots, Public Works personnel may undertake root pruning prior to the homeowner’s reconstruction of the sidewalk. Root pruning, however, is not be taken lightly as there is always some risk of tree failure. Many factors are involved, including tree species, age, size, site conditions, existing problems, vigor and extent of pruning. Mature trees are less tolerant of root pruning than young trees, trees on sites exposed to high winds are less tolerant than sheltered trees, and trees with defects or poor general health are not good candidates for root pruning. Finally, the closer to the trunk the roots are pruned, the greater the effect on the tree. Thus, it may not be feasible to root prune larger trees in smaller sites.

The Shade Tree Commission, in conjunction with the Department of Public Works has identified a number of possible solutions a homeowner can undertake to extend the life of a repaired or newly reinstalled sidewalk.

Tree roots normally extend a great distance laterally – twice the width of the tree canopy – but they are relatively shallow. About 90 percent of a tree’s roots are within the top 30 inches of the soil. Given the pattern of tree growth, the best solution to the tree-sidewalk conflict is to enlarge the area in which the tree can grow.

Haddonfield permits homeowners to narrow sidewalk sections to allow the tree greater area for growth. Sidewalks can be reduced to as little as three feet wide at the narrowest point of the “cut out,” to allow the tree as much as 18 inches of space between the trunk and the sidewalk. Infilling squared cut out areas with brick allows the homeowner to remove the bricks as the tree grows, thereby reducing the need for premature sidewalk repairs and replacements.

Alternatively, homeowners can “arc” the entire sidewalk in the area next to the tree, thereby preserving a consistent sidewalk width, yet allowing the tree room to expand.
Alternatively, consider installing smaller pavers with expansion joints (left photo), limiting possible future sidewalk repairs to a few sections rather than large areas. Expansion joints also permit future small cuts (right photo) to accommodate tree roots. Rather than using concrete pavers, homeowners can install removable or adjustable semi-permanent pavers such as bricks near trees. These pavers can be altered when required to compensate for tree root growth.

Concrete ramps can be a short-term solution to uneven pavement, although the sidewalk will eventually have to be replaced as tree roots continue to expand.

If replacing the sidewalk, homeowners should consider placing a compacted bed of coarse gravel under the poured walk. Under normal conditions, tree roots will not grow quickly or easily through the porous gravel, thereby significantly slowing or stopping the heaving. Alternatively, when replacing the sidewalk, consider installing root barriers along the treeside edge under the poured walk. The barrier will force tree roots to grow deeper below the sidewalk. Barriers can be made of plastic or geotextile fabric. They should extend one foot deep and at least 5 or 6 feet in both directions from the point on the sidewalk edge closest to the tree.

Sources:
- Tree City USA Bulletin #3, National Arbor Day Foundation.
- City of St. Louis Forestry Division Information Bulletin, Sidewalk and Sewer Damage.