

Trees: selection, protection and maintenance

Choosing a tree species and its location

Trees are an invaluable source of greenery in an urban environment, where they help purify polluted air. Planted on your property, they can:

- Beautify your property (increase its value)
- Provide shade to keep your house cool in summer (deciduous trees planted to the south, southeast and southwest)
- Block cold winds in winter (conifers planted to the north, northeast and northwest)
- Provide privacy in the yard
- Prevent erosion

When you choose to plant a tree on your property, there are factors to consider in order to make the right choice:

- What is the maximum size of the tree?
- What clearance is required from overhead power lines?
- Is the tree suited to the climate? What is its hardiness zone?
- Will it harmonize with your landscaping?
- Are moisture, light and soil conditions suitable?
- Will roots have enough space to develop properly?
- What shade will it give the house, the terrace, the pool?
- Will it produce fruit that will be a nuisance to you?
- Is it capable of withstanding drought, temporary flooding, deicing salts, pollution and pests?
- Will it require considerable maintenance?

If you make an enlightened choice before planting a tree, you will be most satisfied with the result.

When planting a tree purchased from a nursery (and therefore of a good size), ensure that you have identified the location of underground infrastructures before digging (pipes, cables, grounding grid, irrigation system, etc.)

Get Hydro-Québec's brochure *The Right Tree in the Right Place* from the Town's Public Works Department (not available on the Internet), for additional information.

Trees suited to clayey soils:

The 'New Harmony' white elm (a more disease-resistant variety), most oaks, the Amur maple, hawthorn, honey locust, Amur corktree, Austrian pine, etc.

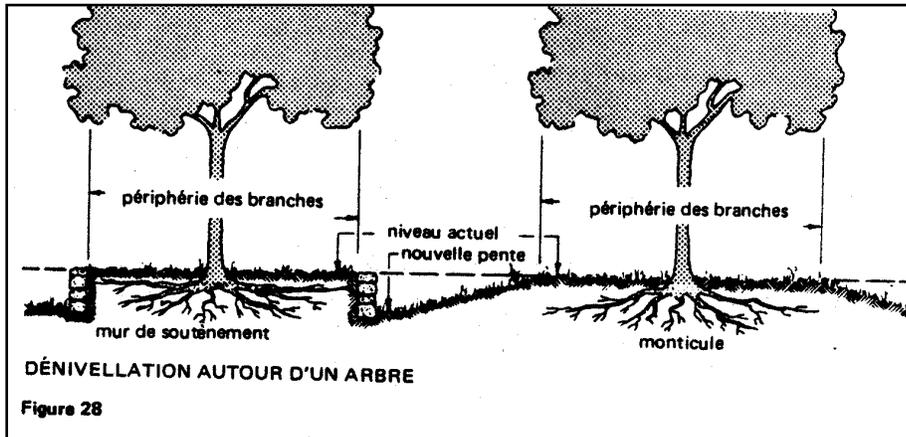
Trees suited to dry, sandy soils with exposure to the sun:

The hackberry, locust, Amur maachia, honey locust, red pine, juniper, spruce trees, Russian olive, etc.

Protecting the trees

When carrying out landscaping work or putting up a new building, we tend to forget that the trees, which appear so strong and permanent, are sensitive to this type of upheaval.

Before raising or lowering the level of the ground on your property, particularly if there are trees in the vicinity, you should contact the Town's Urban Planning Department for the required permits.

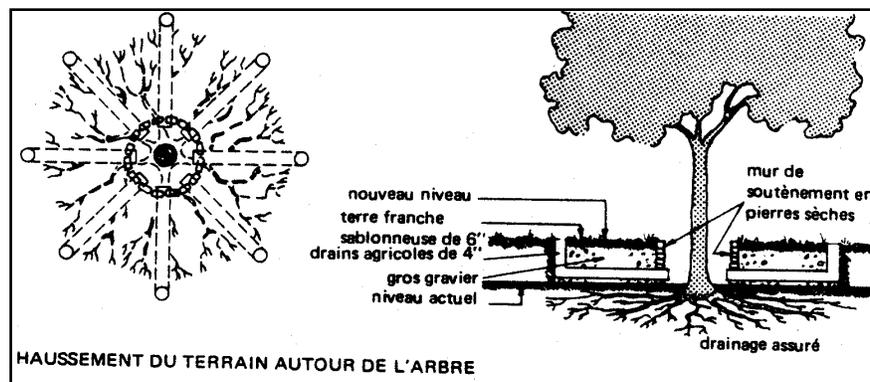


When the level of the ground must be lowered, you must take into account the fact that 70% of a tree's root system is located within 30 centimetres from the surface. Since a significant loss of the tree's roots could lead to its death, you must either build a retaining wall at the periphery of

the branches or gradually lower the ground level to create a mound. The purpose of this operation is simply to protect the roots of the tree. Bear in mind as well that when the level of the ground is lowered, the water level can also be reduced, making it important to water the tree well during its adaptation period.

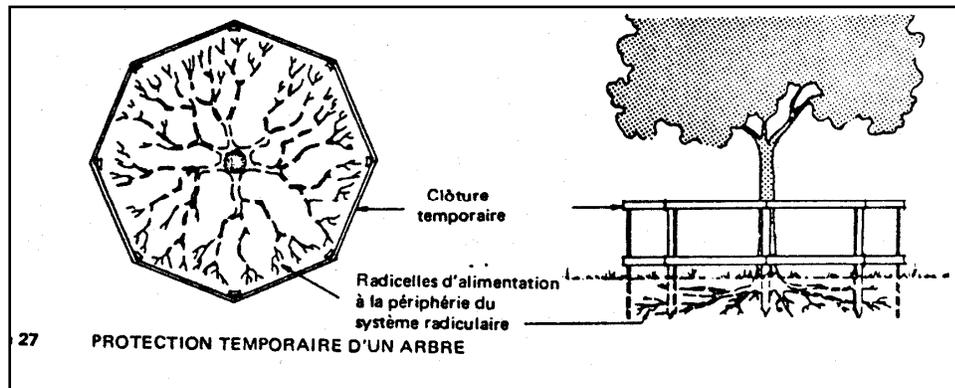
Backfilling work can be carried out at any time during the landscaping of the property, but special care must be taken close to trees, since raising the ground level by as little as 15 cm (6 inches) can prove to be harmful to them. In fact, trees are highly sensitive to this type of disturbance, since the addition of soil over the lateral roots can prevent them from breathing while soil around the trunk can lead to rotting.

Depending on the species, the tree may survive a few more years before deteriorating, but by then, it would be too late. A few precautions taken when the backfilling work is being carried out can help the tree adapt to its new situation. The sketch shown here, taken from *Aménagement paysagiste*, a guide published by the Department of Public Works, presents the simple precautions you can take. First, when raising the level of the ground, install 4-inch agricultural drains at the ground's current level, laying them out like the spokes of a wheel from the trunk.



Then add coarse gravel to let in air. To further increase the tree's chances for survival, connect the horizontal drains to vertical drains. These precautions must be taken on the ground, at the

same width as the top of the tree. Take care as well to clear the trunk up to the previous ground level, within a radius of 30 cm to 2 metres around the tree. The construction of a stone wall around this zone will keep the new earth from falling into the hole.



During construction work, heavy equipment can run close to your trees and risk damaging them. Indeed, the weight of this heavy machinery on the roots can be deadly. Knowing that roots extend beyond the

top of the tree in circumference, you must be doubly careful and install temporary fences to protect the trees. Construction materials (including excavated soil) must be stored outside the perimeter marked off by the temporary fence.

Another frequent cause of tree mortality in an urban environment: the infamous lawnmower! Often, young trees whose bark has been scraped by the mower will last a few years, but will not improve. Depending on the seriousness of the injury, it will survive a few months or a few years. These injuries open the door to pests and pathogens.

To avoid this type of situation, simply remove a fair-size section of lawn around the tree and replace it with mulch. This will keep the lawnmower far enough from the trunk not to damage it.

Maintenance

If you use a contractor to care for your trees (pruning, thinning), take the time to check out his references if you don't know him, and ensure that he has adequate public liability insurance coverage. In fact, accidents can occur during topping or felling operations, causing heavy damage not only to your property, but to your neighbour's as well.

You should also get estimates from three contractors to compare prices and, once you've made your choice, demand a well-written contract.

Should you decide to handle maintenance on your own, remember that topping a tree is strictly prohibited. During pruning operations, it is important not to remove more than 20% of the branches at a time, and the work must be done by the book.

Refer to the BNQ NQ 0605-200 standard on tree maintenance at:

www-es.criq.qc.ca/pls/owa_es/new_enquete_publicque.liste_promo?p_lang=en

Trees and myths in urban environments

Tree roots are often blamed for a number of problems in urban environments (breaks in sewer pipes, sidewalks, shifting walls, cracks in foundations, etc.). The fact is that root growth is opportunistic. Indeed, roots do not grow in a particular direction (ex: towards the pipe, in search of water). Rather they go wherever they do not encounter resistance. What's more, on average, 99% of a tree's roots are located no more than one metre beneath the surface of the ground, making it highly unlikely that they will raise your house...

In fact, the presence of a tree's roots in a pipe indicates a leak, and indicates that the roots are simply reaching for the water being released.

The same principle applies to cracks in foundations: exploratory roots can take advantage of an existing problem, but are not its cause. In clayey soil, a number of factors can lead to this type of problem, which is related to drying clay. Don't blame the trees. Instead, be smart when building on this type of soil. For information, see the *Association des Consommateurs pour la Qualité dans la Construction* (Consumer Association for Quality Construction).

For additional information on interesting varieties of trees:

Hydro-Québec, 2005. *Guide to Ornamental Trees and Shrubs*. Hydro-Québec Distribution. 547 pages. Available in bookstores or call 1-800-Énergie.

Farrar John Laird, 1995. *Trees in Canada*. Fitzhenry and Whiteside, publisher, 502 pages.

Paquet, Bruno, 1993. *Les racines des arbres : mythes, croyances et réalités*. Revue Forêt Conservation, Juillet-août 1993 page 22-23.

Refer to: "Tree roots and building foundations" on the Montréal Botanical Garden's website:
www2.ville.montreal.qc.ca/jardin/en/info_verte/arbre/racines_fondation.htm

Bureau de normalisation du Québec's website (English) :
www-es.criq.qc.ca/pls/owa_es/ncw_enquete_publicue.liste_promo?p_lang=en