

Avoiding Tree Damage During Construction

The holder of an approved building or demolition permit that permits construction or deconstruction on a property where a Protected Tree is located, or the boundary of which is adjacent to a Protected Tree (the “permit holder”), must comply with all of the following conditions and apply for a tree cutting permit:

- before evacuation, blasting, construction, or other potentially tree-damaging activity is carried out, install a Tree Protection Barrier or take other protective measures approved by the Director, to separate the land to which the permit applies from the remainder of the root zone of a Protected Tree;
- continually maintain the Tree Protection Barrier or other Protective measure until completion of the work proposed to be carried out on the property to which the permit applies;
- post and continuously maintain on the Tree Protection Barrier or other protective measure an all-weather sign stating “Protected Root Zone - No Entry”;
- if Protected Tree roots are cut by excavation, immediately wrap the remaining roots in a root curtain or wire mesh lined with burlap surrounded by posts;
- continuously keep a root curtain of wire mesh moist throughout the construction process;
- any Cutting or Pruning of a Protected Tree branches, limbs or roots may only be done pursuant to a Permit and only under the direction of a Certified Arborist;
- immediately upon completion of the works pursuant to the permit, to replace any Protected Trees that were damaged beyond repair during excavation, blasting or construction... (Please visit our website for complete bylaw).



Protecting Esquimalt's Urban Forest



It is important to know which regulations afford protection to trees and vegetation in Esquimalt. Awareness of tree regulations and requirements is important at every stage of the building or demolition process.

Homes are often constructed near existing trees to take advantage of their aesthetic and environmental value. Unfortunately, the processes involved with construction can be deadly to nearby trees. Proper planning and care are needed to preserve trees on building sites. An arborist can help you decide which trees can be saved. The arborist can also work with the builder to protect the trees throughout each phase of construction.

How Trees Are Damaged During Construction

PHYSICAL INJURY TO TRUNK AND CROWN

Construction equipment can injure the above-ground portion of a tree by breaking branches, tearing the bark, and wounding the trunk. These injuries are permanent and, if extensive, can be fatal.

ROOT CUTTING

Digging, grading, and trenching associated with construction and underground utility installation can be quite damaging to roots. A tree's root system can extend horizontally a distance 1 to 3 times greater than the height of a tree. It is important to cut as far away from a tree as possible to prevent damage that can compromise tree health and stability. Cutting under a tree's crown can reduce tree vitality. Cutting roots close to the trunk can severely damage a tree and limit its ability to stay upright in storms.

SOIL COMPACTION

An ideal soil for root growth and development contains about 50 percent pore space for water and air movement. Heavy construction equipment can compact soil and dramatically reduce pore space. Compaction inhibits root growth, limits water

penetration, and decreases oxygen needed for root survival.

SMOTHERING ROOTS BY ADDING SOIL

The majority of fine water-and-mineral-absorbing roots are in the upper 6 to 12 inches (15 to 30 cm) of soil where oxygen and moisture levels tend to be best suited for growth. Even a few inches of soil piled over the root system to change the grade can smother fine roots and eventually lead to larger root death.

EXPOSURE TO THE ELEMENTS

Trees in a forest grow as a community, protecting each other from the elements. The trees grow tall with long, straight trunks and high canopies. Removing neighboring trees during construction exposes the remaining trees to increased sun-light and wind which may lead to sunscald or breakage of limbs and stems.

Getting Advice

Not all trees on the building site can or should be preserved. An arborist can assess the health and structural integrity of trees on your property and suggest measures to preserve and protect them. When determining which trees to retain, consider the species, size, age, location, and condition of each tree. An arborist can advise you about which trees are more sensitive to compaction, grade changes, and root damage.

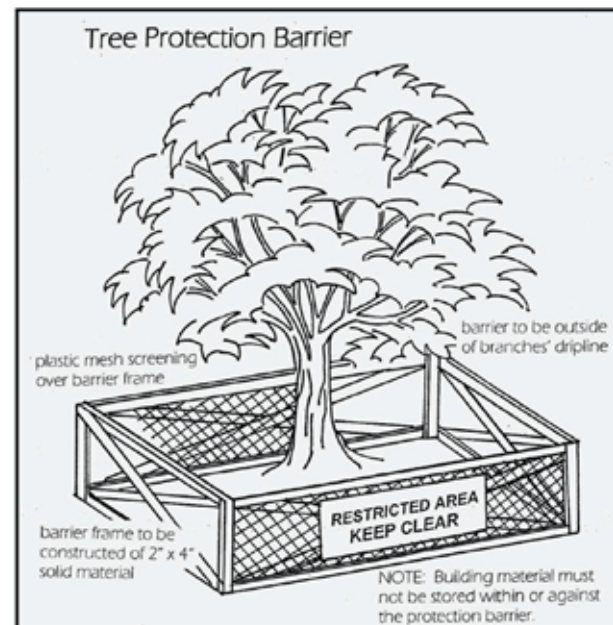
Planning

Your arborist and builder should work together early in the planning phase of construction. Sometimes small changes in the placement or design of your house or driveway can make a great difference in whether a critical tree will survive. Alternative construction methods can be discussed, such as bridging over the roots as a substitute for a conventional walkway, if flexibility in placement is limited. If utilities cannot be re-routed away from trees, less damaging tunneling and trenching installation techniques exist.

Erecting Barriers

Treatment for construction damage is limited, so it is vital that trees be protected from injury. Set up sturdy fencing around each tree that is to remain, as far out from the tree trunk as possible to provide above- and below-ground protection. Place fence approximately one foot (0.3 m) from

the trunk for each inch (2.5 cm) of trunk diameter. Instruct construction personnel to keep fencing intact and the fenced area clear of building materials, waste, and excess soil. No digging, trenching, or other soil disturbance should be allowed in the fenced area.



The illustration shows an adequate barrier in place to protect a tree.