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## Tree Retention & Development. Advice for Homeowners.

Retaining trees on a development site requires some basic knowledge of what the tree needs to survive. You also need to understand what is, or is not feasible in terms of site disturbances that might affect the tree(s). The following is a checklist of the basic factors you should consider. Some of these steps can be done by the homeowner, while others will require specialised help.

### Step 1: Municipal Requirements

Many municipalities have specific tree protection bylaws and requirements. You need to comply with the bylaws and permit requirements in order to get a development permit. If in doubt, you should call, or go to the web site and check these requirements first of all. They vary, not only in terms of which trees must be protected, but also in terms of the level of details you need to supply. The following steps are typical.

### Step 2: SULE

SULE, or Safe Useful Life Expectancy, is a concept developed in Great Britain for all development sites regardless of scale. If you want to keep the trees (or have been told you need to retain them) then the first step is to have each tree evaluated to determine its present health, condition, and associated risk level. Call a well qualified arborist with experience, to document these aspects. Younger, healthy trees that have a lot of years ahead of them, are often better able to survive the site changes being planned. Trees that are in poor health already, or those that have serious structural defects that raise risk levels, may be less desirable for retention, especially if the site changes are likely to hasten their demise.

Be realistic at this stage. Not all trees are worth retaining, especially if it means that the planned changes will have to be radically altered in order to accommodate the tree(s). If the tree is worth retaining, and can be protected so that it has a long lifespan after development, then be sure to understand what steps are needed to ensure success.

### Step 3: Survey

Get the tree locations properly surveyed and located on your plans so that there is no doubt about which tree is where. If there are many trees on site it may be wise to have them tagged. Use a plastic or metal numbered tag, securely nailed to the tree trunk in visible position. We like to place them at eye level and all on the same side (for example, North) so that everyone knows where to find them. These numbers will correspond to the plans and

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sketches later on. Be sure that the surveyor locates the tree at the centre point of the trunk, not the outside. At the time of survey make sure that the radial crown spread of the tree is also noted. That affects the amount of ground to be protected at the base of the tree, which is called the setback or tree protection zone. The survey typically includes all bylaw sized trees, along with other key features such as driveways, existing buildings, utility kiosks (covers, shut off valves, transformer pad) and other features that may be required by the planning department. Make sure the survey shows an accurate representation of the crown size. Circular symbols, all the same size, are generally not enough.

## Step 4: Inventory

There should be an inventory of the trees to accompany the survey. Include all bylaw sized trees even if some are dying, or already dead. The inventory would typically include tag number, species, trunk diameter in centimetres measured at a specific point above ground (usually defined in the tree bylaw), radial crown spread, an assessment of health, observations about risk issues, possibly suitability to transplant the tree, and any other comments of note. The inventory helps the approving officer to understand the site and what it does or does not contain, and why some trees are being retained and some not.

## Step 5: Design

Once you have a comprehensive picture of the trees on site that might be in the way, or that you want to retain, then you can start the design process. In some cases, it will be feasible to work closely around one or more trees using a range of design approaches. In other cases, the disturbance will be too great, and it will be obvious that the tree is unlikely to survive if the design goes ahead as planned. That may cause delays in the approval process, especially when the tree is bylaw sized. There are all sorts of tree aspects to consider at this stage, and many effective ways to work around the trees, so consult the arborist early on in the design process. It will save you time and money later on.

Typically, avoid changes in the soil grades, soil compaction, trenching, digging, storage, stockpiling of materials, and any other activities within the drip line of the tree. Often we will use a tree protection zone that is larger than the radial drip line distance in order to enhance the survivability of trees. Make sure that all the design elements are accounted for. Many times we have been called in to 'save' a tree after development is underway, simply because one or more members of the team did not think about the trees. The location of underground utility corridors, pathways, driveways, power lines, and grade changes must be considered at the start of your project, not as an afterthought. It is a lot easier to 'save' a tree before it is damaged.

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## Step 6: Implementation

Once the design is finalised, the next step is to make it all happen. Be careful. Many good designs are ruined by lack of care on site. Fence off the area around each tree so that there will be no physical intrusions into the tree protection zone. That fence needs to be sturdy enough to last the duration of the construction. That may be a few weeks or more than a year. Keep the fence in good order as work proceeds and make sure that your contractor knows why it is in place. On some sites, it pays to bring in the arborist to supervise the site work, have them discuss the tree requirements with the contractor, and then have them check in periodically to make sure the trees are still ok. Sometimes, you will need to water trees during the summer months, and in some instances it might be useful to mulch the ground to slow down moisture loss from the soil.

As construction comes to an end it will be tempting to take down the fencing sooner rather than later. Before you do that, make sure that there will be no further major site disturbances. All heavy machinery should be gone at this stage, and all material deliveries will be in place. If you are having landscaping done at the end of the development make sure that the landscape contractors do not cause damage to the trees. Many a successful tree protection project has foundered when landscapers come in and drive Bobcats or similar machines over the tree protection zones, or irrigation companies come and install the water lines in machine dug trenches right through the tree roots. Similarly, avoid placement of new soil over the root zones, and never, ever, place large mountains of wood mulch at the base of the tree.

## Step 7: Aftercare

Once all the work is completed, it is often wise to bring the arborist back and have the trees checked one more time to ensure that they survived all the disturbances. On some sites, there may be performance bonds related to the tree retention designs, so having a well documented site before, during, and after development can help to ensure a timely release of any monies held in trust.

If these steps are properly implemented successful tree retention is simple.

If you have questions or would like assistance please call us. 778-433-8465.

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