2022-11-28

Tree Information Report 2022-10
Site: 1274 Marygrove Circle. Ottawa, ON
Owner(s):
Infill application no.

This tree report concerns the infill application that is being proposed for 1274 Marygrove Circle. Please refer to Appendix A, Table 1 for an inventory of trees over 30 cm in Diameter at Breast Height, or outside the chain of custody which will be impacted by construction. Please refer to Appendix A, Figure 1a and 1b for their corresponding locations. Also, please refer to Appendix C for corresponding photos of inventoried trees on page 9.

Inventory

With this application, Tree no 1, located at the front centre of the property, will be impacted by construction to an extent the tree can not be retained in its current position. As shown in Fig 1a. the centre of the trunk is ≈2.4m outside the property line and no part of the trunks extends into the plane of the property line. As indicated in Table 1 the ownership lies with The City of Ottawa. Figure 1b shows the Critical Roots Zones (CRZ) for Tree No 1 falls well within the footprint of the proposed driveway. Two scenarios are proposed in Table 1. The first is to remove the tree and compensate with a new installation. The second scenario is to retain the tree and translocate using a medium caliper tree spade. Realistically speaking, given the soil is predominantly clay, this tree does not meet the City of Ottawa's guidelines for planting trees in SMC (Sensitive Marine Clay). As it reaches maturity (20-35m tall) there will not be sufficient distance from the tree trunk to the foundation that is ≥ the mature height of the tree. Perhaps as compensation to the City of Ottawa, the tree could be translocated to a park, and at the same time be used in consideration towards the goal of 40% canopy cover over 40yrs.

There are no other trees located within or beyond the lot bounding 1274 Marygrove Cir which will be impacted by this construction application.

Planting

Given the vernacular of infill construction and the prevalence of marine clay at the building site, the selection of new tree installations is limited to small sized trees. Broad leafed species were chosen to maximize canopy cover. Table 2 in Appendix D provides a list of trees and the location of where they would be suitably planted.

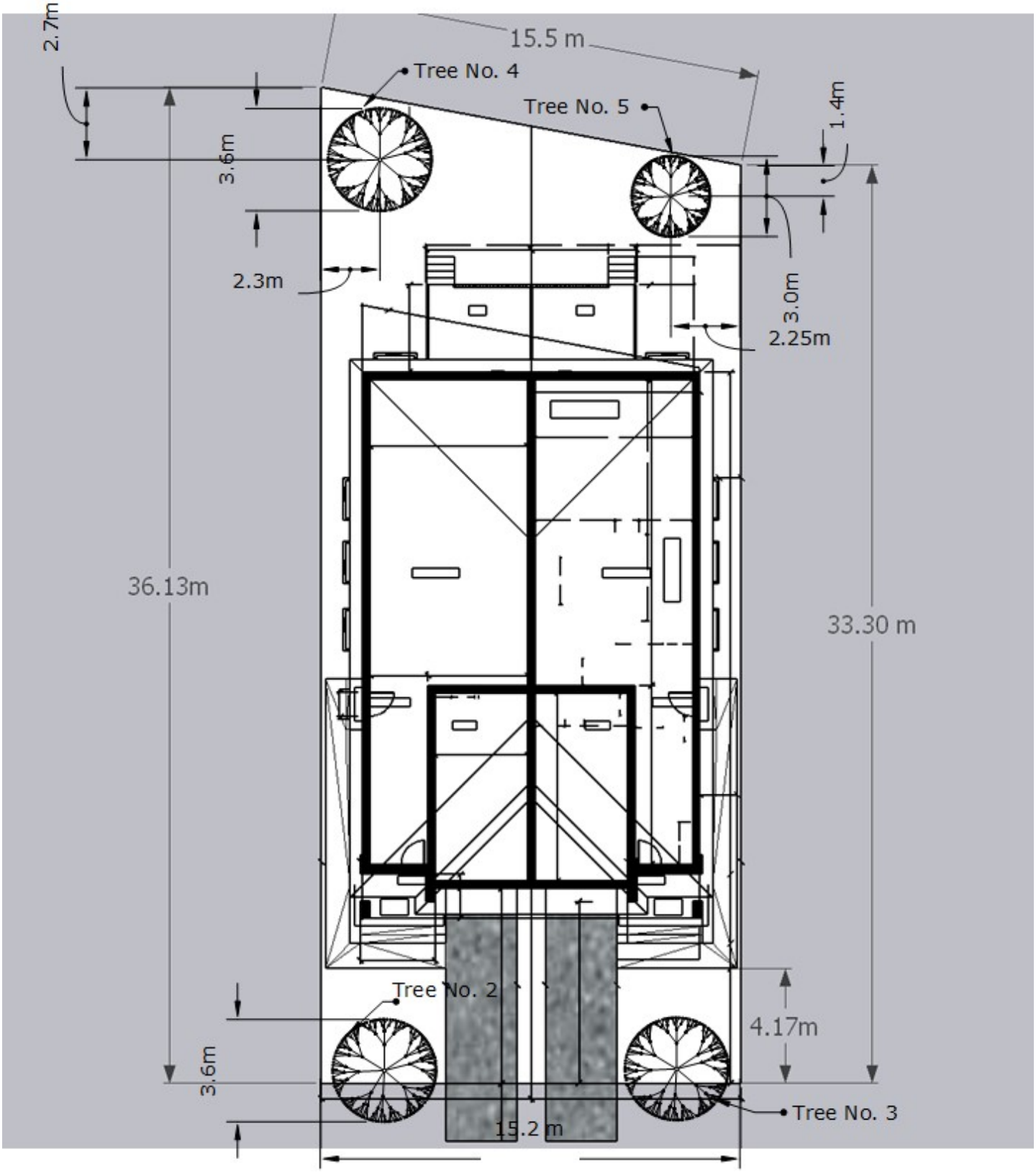
The caliper size shall be a minimum of 5cm and the caged root balls are approximately 2 feet in diameter. The excavation should be twice the diameter of the root ball and back fill should be unamended native soil in order to prevent a “perched water table”. It has been identified that the soil is predominantly SMC. Backfilling the planting hole with soil that is highly permeable compared to the clay beneath the hole will result is an inconsistent rate of water percolation causing water to pool at the bottom of the hole creating anoxic conditions.

It is vital that the root ball cage be removed and the root ball scored in order to prevent “root girdling” (refer to Appendix E). Moreover, it is essential that the root collar be planted at grade and a 1” layer of clean mulch be applied throughout the root zone of the saplings, forming a berm around the drip line. Sourcing these samplings should be acquired from reputable nurseries that guarantee their samplings for at least one year. Given urban soils, particularly street side soils, are depleted or devoid of nutrients and natural floral within the rhizosphere it is recommended in the first few seasons that deep root fertilization and inoculation with mycorrhizae (Refer to Appendix E) be practiced.

Looking at Figure(a) below, Street side Trees 2 & 3, are Japanese lilacs and were chosen for their ability to resist street side stresses such as soil compaction and salt exposure. In the back

yard left, Tree No. 4 is a Service berry and back yard right, Tree No. 5 is a Japanese maple, which is a smaller tree given the space constraints in the back right yard. In Figure (a) the expected canopy spread of each mature tree is noted.

Looking at Figure (b) below, it is proposed that Trees 2 and 3 be planted just inside the client's property line. This places the trees at a distance >2.5m from the curb or hard surface and approximately 4m away from the foundation. All the species in the proposal have low water demand and meet the recommendation of planting at a distance away from the foundation ≥ the mature height of the tree in SMC soil.



Figure(a) Shows the location of Trees No. 2-5 that are proposed as new installations. The mature canopy spread of each tree is specified.

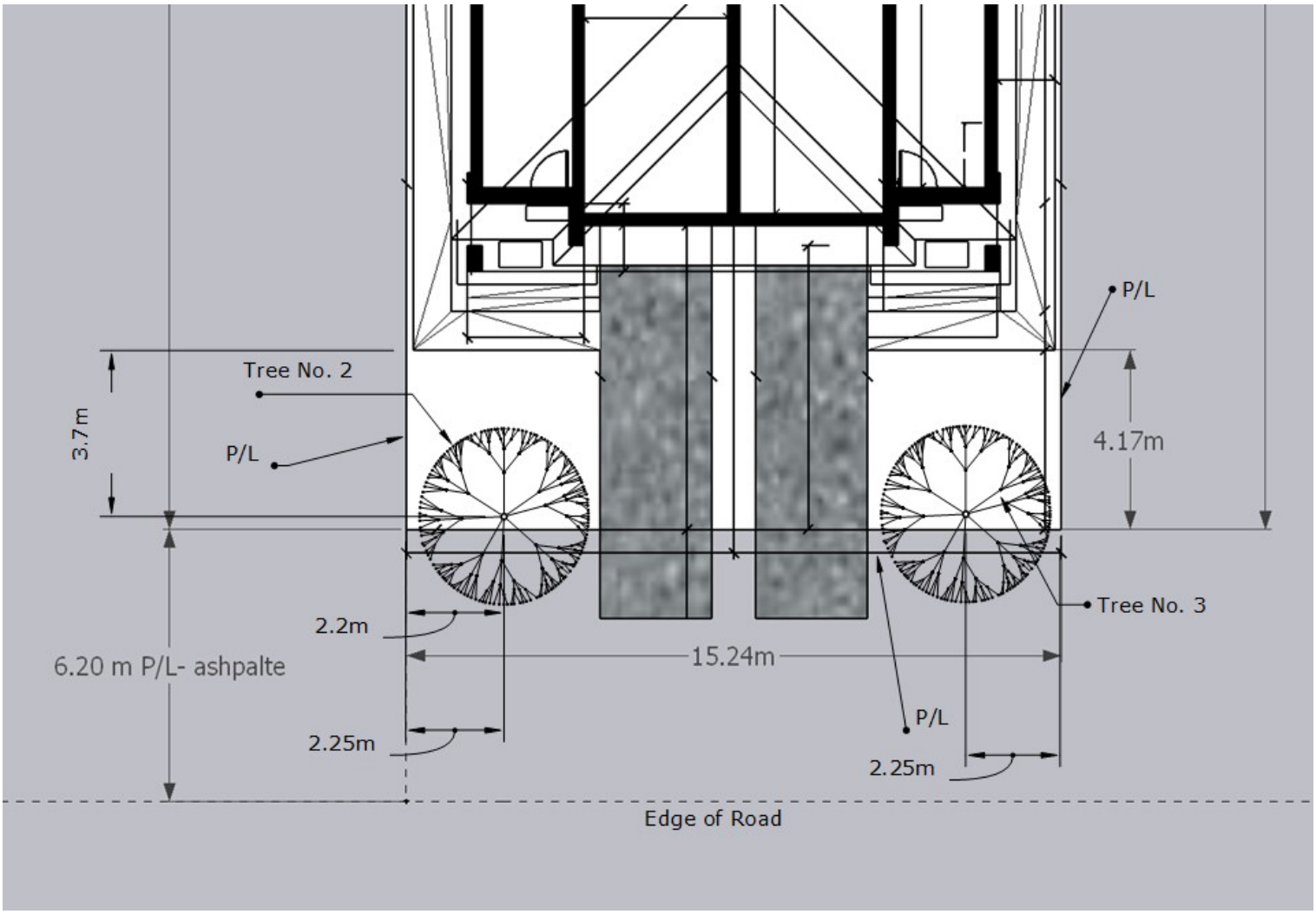


Figure (b) Showing Trees No. 2 & 3 w mature canopy and location in relation to the Property Line (P/L)

It is reasonable to say that the root zone of the mature trees will be as extensive as the drip line of the mature canopy. Therefore, to guarantee a minimum of $20m^3$ of soil, as recommended for small trees with root zones ranging from $7m^2$ to $10m^2$, it is essential that 2-3m of soil aggregate exists below the trees and not stratified or impeded by building aggregate or mechanical.

Best arboriculture practices are set out by the International Society of Arboriculture and form the basis of Ottawa's Tree Protection Bylaw and the measures outlined in this report. If these

measures are taken seriously and upheld, then the trees proposed in this report will continue to thrive and continue to be a benefit to society for many decades.

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Appendix A

Tree no.	Species	DBH(cm)	Location	Ownership	Condition	Arborist Rcommendaiton
1	*Acer saccharum*	12	Street side 1234 Marygrove Circle	City of Ottawa	Good vigour	Removal or Translocation

Table 1: Inventory of trees over 30cm DBH or outside the chain of custody which will be impacted by construction

Figure 1a. Shows Parcel Base Map and Satellite Base Map respectively with existing dwelling for 1274 Marygrove Cir. Tree No.1 is 2.4 m outside the property line and 3.7m to the edge of the asphalt. (Source geoOttawa 2021)

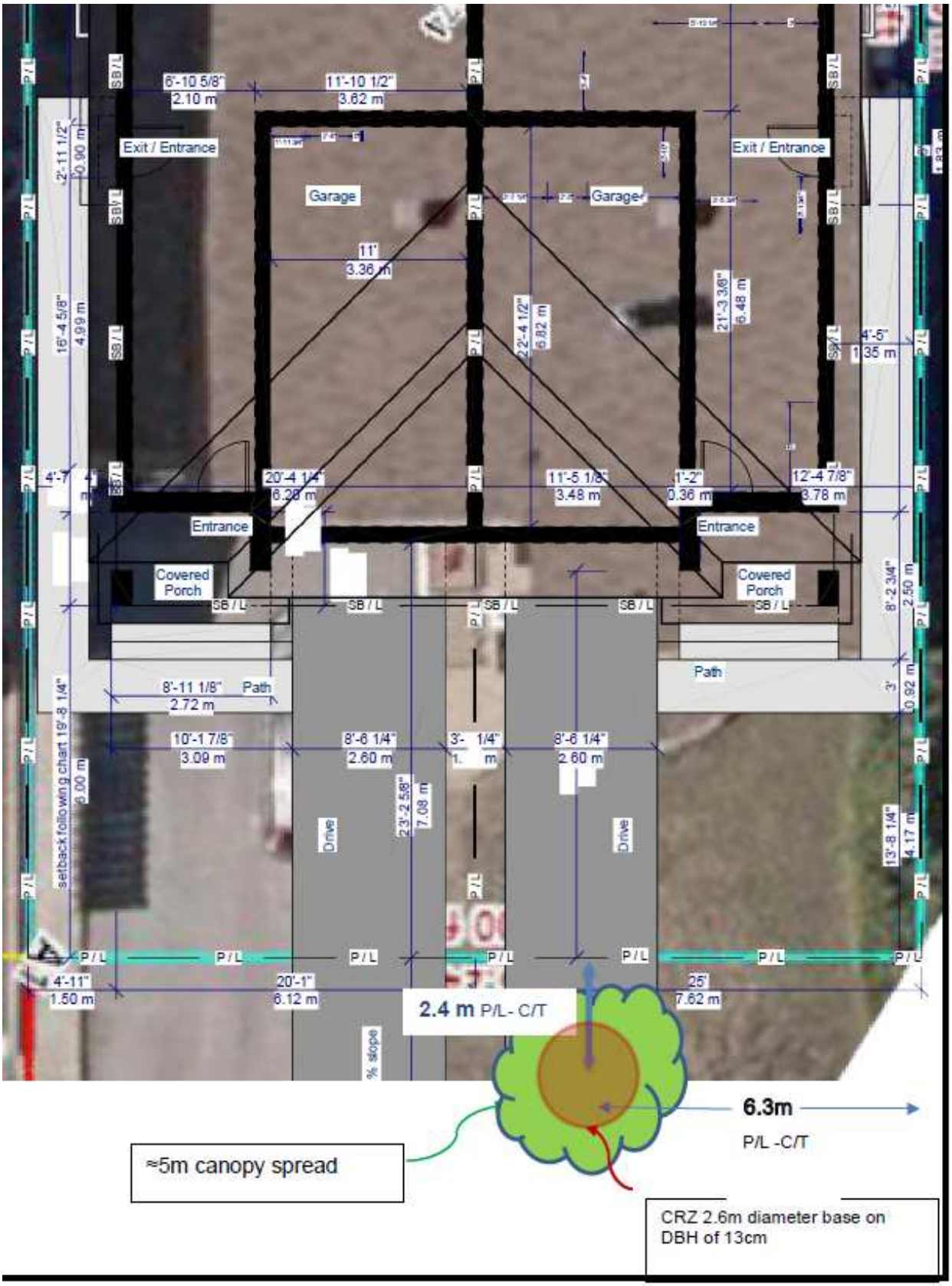


Figure 1b. Shows Tree No. 1 C/T (Centre of Trunk) in relation to the P/L (Property Line). CRZ is highlighted in red. New construction foot print superimposed over existing building foot print supplied by Catalli Inshaw Design.

Appendix B-Determining Tee Protection Measures

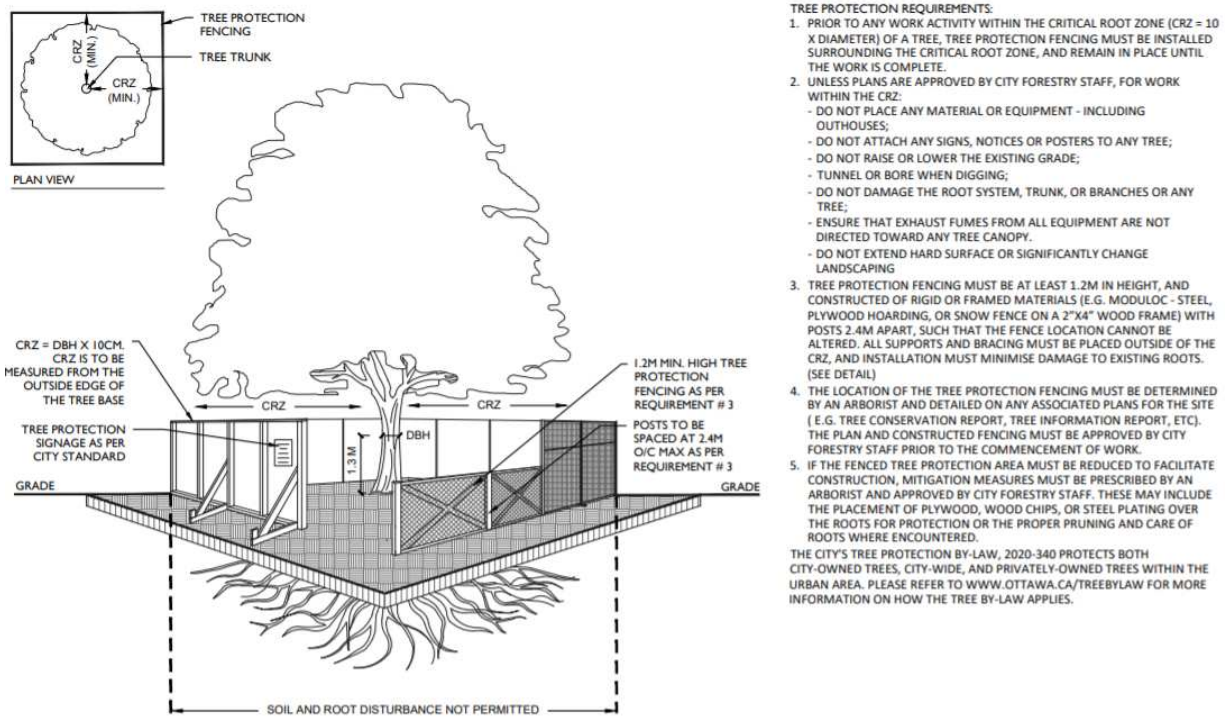


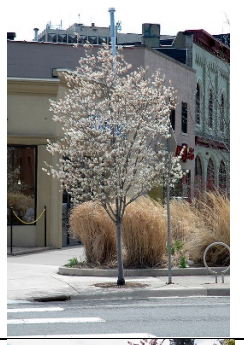
Figure 3: Tree protection guidelines set out by the City of Ottawa's "Tree Protection Bylaw"

Appendix C- Tree Photos

Tree No. 1 *Acer Saccharum.* Approximately 3.7m from the edge of the asphalt on Marygrove Circle and 2.4m from the PL. According to Geo-Ottawa, the tree appears to be owned by the City of Ottawa. Tree has good vigour and good structure. DBH 13cm.

Appendix D – New Plantation

Table 2: Inventory of new tree installations post construction of two-story semidetached infill on the parcel located at 1274 Marygrove Cir. to compensate and satisfy the goal of 40% canopy cover in Ottawa's urban area.

Tree #	Common Name	Species	Caliper	Root ball	Mature Canopy Spread	Location	Image
2	Japanese lilac tree	*Syringa reticulata*	≈5cm	Caged	3.6 m (≈10 m^2)	Front Left	
3	Japanese lilac tree	*Syringa reticulata*	≈5cm	Caged	3.6 m (≈10 m^2)	Front Right	
4	Service berry	Amelanchier spp.	≈5cm	Caged	3.6 m (≈10 m^2)	Back Left	
5	Japanese maple	*Acer palmatum,*	≈5cm	Caged	3 m (≈7 m^2)	Back Right	

Appendix E- Definitions

"**boundary tree**" means a tree, of which any part of the trunk is growing across one or more property lines;
"DBH" or **"diameter at breast height"** means the measurement of a trunk of a tree at a height of one hundred and thirty (130) cm from the ground;
"**infill development**" means low rise residential development that is not subject to site plan control, plan of subdivision, or plan of condominium;
"Critical Root Zone" CRZ The critical root zone (CRZ) is established as being 10 centimetres from the trunk of a tree for every centimetre of trunk diameter. The trunk

diameter is measured at a height of 1.3 metres for trees of 15 centimetres diameter and greater and at a height of 0.3 metres for trees of less than 15 centimetres diameter.

MycorrhizaeThe associations between roots and fungi are called mycorrhizae. These symbiotic arrangements have been found in about 90% of all land plants, and have been around for approximately 400 million years. Plant roots are hospitable sites for the fungi to anchor and produce their threads (hyphae). The roots provide essential nutrients for the growth of the fungi. In return, the large mass of fungal hyphae acts as a virtual root system for the plants, increasing the amount of water and nutrients that the plant may obtain from the surrounding soil. A plant that forms an association benefiting both the fungus and the plant is a "host."

(Angela M. O'Callaghan, Ph.D., University of Nevada)

Root Girdling - A girdling root is a root that grows in a circular or spiral pattern around the trunk or at or below the soil line, gradually strangling the trunk. Trees and shrubs that are container-grown and pot-bound frequently develop girdling roots.

Tree Protection (By-law No. 2020-340)

Section 74

Where a tree is a protected tree, no person shall fail to implement the following tree protection measures, unless otherwise authorized by the General Manager:

1.
    1. prior to any work activity, tree protection fencing must be installed around the outer edge of the critical root zone, or as per the approved Tree Conservation Report or Tree Information Report, as applicable, and remain in place until the work is complete;

2. tree protection fencing shall be at least 1.2 metres in height and installed in such a way that the fence cannot be altered; and

3. such other measures as required by the General Manager to protect the tree.