

**244 Fountain Place
Tree Conservation Report**

244 Fountain Place, Ottawa
Proposed Apartment Buildings
Project 160401234




Prepared for:
TC United Group

Prepared by:
Stantec Consulting Ltd.

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Sign-off Sheet

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Prepared by  _____
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Isabelle Lalonde, Landscape Architect

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Executive Summary

This Tree Conservation Report has been prepared in support of Site Plan Application to permit the development of 244 Fountain Place in Ottawa, Ontario. The site is currently vacant with reclamation vegetation and this project is proposing the construction of two apartment buildings.

The 0.072-hectare property at 244 Fountain Place is located west of the Rideau River and south of Rideau Street. It consists of one parcel of land currently undeveloped with naturalized reclamation vegetation. The site is described legally as Part of Lot "C", Concession "D" (Rideau Front), Geographic Township of Nepean, in the City of Ottawa. The site is currently designated "General Urban Area" in the City of Ottawa Official Plan. The property is designated Residential Fifth Density Zone, subzone B in the 2008 City of Ottawa Comprehensive Zoning By-law.

This Tree Conservation Report will summarize the condition of the current vegetation and define trees to be retained and / or removed to permit the development of this project. A Tree Assessment Investigation was conducted to review the species and health condition of the existing vegetation growing at and in periphery of 244 Fountain Place in Ottawa and on adjacent land. The construction of this project is planned to occur in 2017-2018.

Glossary

Critical Root Zone (CRZ)	Zone under a tree where there should be no disturbance before, during and after construction. The CRZ is established as being 10 centimetres from the trunk of a tree for every centimetre of trunk diameter.
Diameter at Breast Height (DBH)	Diameter of a tree trunk measured at 1.4 metre above ground, standardized by the Council of Tree and Landscape Appraisers and the International Society of Arboriculture. DBH are generally measured in centimetres.
Dieback	Condition in which the ends of the branches are dying.
Distinctive Tree	Any tree with a DBH of 50 centimetres or greater.
Drip Line	Perimeter of the area under a tree delineated by the crown.
Leader	The primary terminal shoot or trunk of a tree.
Sapling	A young tree measuring one (1) to two (2) metres high and having a DBH of two (2) to four (4) centimetres.
Scaffold Branches	The permanent or structural branches of a tree.
Seedling	A plant grown from a seed with a height of not more than one (1) metre.
Significant Tree	Tree / shrub deemed valuable because it is unusually beautiful or distinctive, comparatively old, distinctive in size or structure for its species, rare or unusual in the subject area, provides a habitat for rare or unusual wildlife species in the subject area, or has an historical, cultural, or landmark significance.
Significant Woodland	Woodland that contain mature stands of trees 80 years or older, have interior forest habitat more than 100 metres from forest edge, and are adjacent to a surface water feature.
Specimen Tree	Individual tree located in the middle of a field or open space. A specimen tree is not automatically a significant tree.
Stress	Any factor that negatively affects the health of a tree.

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Structural Defect	Flaws, decay, or other faults in the trunk, branches, or root collar of a tree, which may lead to failure.
Topping (Topped)	Cutting back a tree to buds, stubs, or laterals not large enough to become a new leader on the tree.
Tree Protection Zone (TPZ)	The area surrounding a tree that is marked and fenced off and where there is no storage of materials of any kind, no parking or moving of vehicles, and no disturbance of the soil or grade.
Tree Shoots	Tree shoots are sprouts that emerge from dormant buds along the trunk or branch of a tree. In an urban environment shoots are often associated with stress to the tree. Trees with severe dieback due to winter injury, drought and salt spray often produce many shoots as a means of compensating for the loss of leaf surface due to stress or injury.
Tree Suckers	Tree suckers are sprouts that form from the roots of existing trees and tend to form new trees or shrubs. In an urban environment suckers can be associated with stress to the tree and are prevalent after a disturbance such as when mature trees are cut down. Some tree species have the tendency to sucker.
Vigour	Overall health; capacity to grow and resist stress.

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Introduction
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1.0 INTRODUCTION

Stantec Consulting Ltd. was retained by TC United Group to complete a Tree Conservation Report for 244 Fountain Place in support of a Site Plan Application to permit the construction of two apartment buildings. The site is situated west of the Rideau River and south of Rideau Street within the City of Ottawa. This proposed infill development would consist in two three-storey apartment buildings comprising a total of 22 residential units. The site is described legally as Part of Lot "C", Concession "D" (Rideau Front), Geographic Township of Nepean, in the City of Ottawa. The site is designated "General Urban Area" in the City of Ottawa Official Plan. The property is currently designated Residential Fifth Density Zone, subzone B in the 2008 City of Ottawa Comprehensive Zoning By-law.

Figure 1: Location Plan



The objectives of this Tree Conservation Report are:

- To describe the existing woody vegetation growing on site including trees and large shrubs. The description for each tree and / or large shrubs will include species, size, vigour, and health condition.
- To assess the environmental value and suitability for retention of the woody vegetation.

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- To evaluate the anticipated impact of the proposed development on the existing woody vegetation.
- To provide recommendations related to tree protection and mitigation measures to reduce negative impact on the woody vegetation to be retained.
- To provide recommendations for the development of a compensation planting plan.

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Tree Assessment
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2.0 TREE ASSESSMENT

A Tree Assessment Investigation was conducted on April 20, 2016, and September 19, 2016, by Brad De Vries, Landscape Technologist at Stantec Consulting Ltd., and Isabelle Lalonde, Landscape Architect at Stantec Consulting Ltd., to review the species and health condition of the existing vegetation growing at 244 Fountain Place in Ottawa. In addition, our investigation included the visual assessment of trees growing at Besserer Park.

2.1 METHODOLOGY

The complete assessment of every tree was not completed for this property due to the quantity of trees and their size. Although the tree investigation considered this property as one vegetation grouping, an inventory of selected individual trees was also completed for trees meeting one of the following characteristic:

- Tree bigger than 40 centimetres in DBH;
- Tree species unusual for the site or vegetation grouping;
- Specimen tree.

The approximate location of individual trees on the property, as shown on the **Current Vegetation Plan (TC1)** was established on site and is for reference purposes only. The location of these trees and their size should be confirmed by a tree inspector.

The approximate DBH of trees was measured on site during the Tree Assessment Investigation. The species were determined based on bark, bud, and leaves identification. The vigour was assessed based on visible defects only. The assessment of trees growing on the property line or on adjacent properties was completed on a visual basis only.

2.2 OBSERVATIONS

The property is currently a vacant but treed residential lot. The property is sloping towards the road with a difference in elevation of approximately 7.50 metres between the back and front property lines.

2.2.1 Existing Vegetation

In general, the trees inventoried on this property appeared in healthy condition, are a mix of young and mature trees, and show no signs of disease. Tree species composition included deciduous species only. The complete list of all trees located on or immediately adjacent to the property is indicated in **Table 1 – Existing Vegetation Schedule** below. This table shall be read in conjunction with the **Current Vegetation Plan (TC1)** accompanying this report.



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Table 1 Existing Vegetation Schedule

SYM	Tree Species (Botanical Name / Common Name)	Condition		
		DBH (cm)	Health	Other Remarks
1	Acer negundo / Manitoba maple – 45% Acer platanoides / Norway maple – 45% Ulmus americana / American elm – 7.5% Rhamnus cathartica / Buckthorn – 2.5%	15-25	Good to Poor	Trees located closer to Fountain Place are generally good health condition with stressed and damaged trees being at the back of the property near 612 Besserer Street.
2	Acer negundo / Manitoba maple	50	Good	Tree is located on or close to the property line.
3	Acer negundo / Manitoba maple	3 x 50	Good	Multistem (3 stems); canopy extends over Besserer Park and Besserer Street; tree is located on or close to the property line.
4	Acer negundo / Manitoba maple	60; 30; 20	Good	Multistem (3 stems); tree is located on or close to the property line.
5	Acer negundo / Manitoba maple	50	Good	Tree is located on or close to the property line.

2.2.2 Species-at-Risk

No trees considered as species-at-risk or endangered species were observed on or adjacent to the property.

2.3 VEGETATION QUALITY AND SUITABILITY FOR RETENTION

Existing trees growing on the frontage of the property and in the backyard provide a mature character to the property. In addition, the large maple growing in the backyard provides shade for the property and adjacent owners.

Although a quantity of trees growing on this property show good health conditions, other factors should be evaluated when establishing the suitability for retention of a tree. These factors include the following:

- Structural condition;
- Age and expected longevity of the tree;
- Species invasiveness ; and



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- Species response and tolerance to disturbance.

By considering all the factors listed above, trees recommended for retention will have a higher chance to respond positively to new site conditions for an extended period of time providing a safe environment for the property users.

In addition to the factors listed above, **Table 2 – Retention Qualities** describes the suitability for each tree species for retention. The suitability for retention considers the capacity of the trees to survive to stress and changes in their environment. As noted above, the suitability for retention should also study the proposed development of the property including grading works around the Critical Root Zones (CRZ) of trees and the proximity to construction, access roads, and / or built structures. This type of analysis will be completed in the following section of this report.

Table 2 Retention Qualities

Tree Species (Botanical Name / Common Name)	Remarks	Suitability for Retention
Acer negundo / Manitoba maple	Invasive species. Branches have tendency to lean and break easily.	Moderate to Poor
Acer platanoides / Norway maple	Invasive species. Tolerant to poor soils, compaction and pollution. Once established, Norway maples form a dense forest canopy that shades out other species. The seedlings, which are shade tolerant, can form a thick mat on the forest floor that will further limit regeneration of other species.	High
Rhamnus spp. / Buckthorn	Invasive species.	Not recommended
Ulmus americana / American elm	Tolerate to some fill. Root system is tolerant of excavation works. Sensitive to Dutch elm disease.	Moderate to Poor

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3.0 PROPOSED DEVELOPMENT & TREE RETENTION RECOMMENDATIONS

3.1 PROPOSED DEVELOPMENT

The project for 244 Fountain Place proposes the construction of two three-storey high apartment buildings with associated asphalt drive aisle, walkways, and landscaping. The construction of the new apartment buildings will necessitate the removal of portions of this treed area. The proposed development shown on the ***Proposed Development and Conserved Vegetation Plan (TC2)*** illustrates the location of the proposed building and affiliated infrastructure.

3.2 TREE RETENTION RECOMMENDATIONS

3.2.1 Tree Retention

The difference in elevation between the back and front property line will make it difficult to retain a large number of trees inside the study area. The Site Plan developed for this application proposes a site development that will only permit the retention of existing trees located at the back of the property. Additionally, and as indicated on the Proposed Development and Conserved Vegetation Plan, the trees we recommend for retention are those located on or adjacent to the lateral property lines. These trees will provide shade and naturally integrate the proposed development into the neighbourhood.

To ensure tree survival during and after construction, mitigation measures should be considered during construction. Adequate protection of the trees to be retained and their immediate environment is crucial for the survival of these trees. As such, the Contractor shall apply the following measures to prevent damages to these trees.

3.2.1.1 Tree Health Monitoring

Trees located adjacent to construction works will experience change in their immediate environment. As a result, tree health should be monitored. Photographs of trees to remain should be taken prior to construction, if possible when the trees are in full leaf, as a record of their condition. Monitoring tree health both during and after construction should be made a priority. Actions should be taken as early as possible if / when the health of a protected tree declines. Damages may include:

- Physical damage on tree bark;
- Broken branches;

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- Compaction of root systems due to equipment and materials stored within the protected areas;
- Cutting of the roots; and
- Root exposure following excavation adjacent to trees to be preserved.

Services of an arborist should be used in order to give adequate care to damaged trees.

Trees that have died or have been damaged beyond repair by the Contractor during construction shall be removed and replaced by the Contractor as directed by the project landscape architect.

3.2.1.2 Temporary Tree Protection Fencing

The roots of a tree are located in the top 150 to 250 millimetres of soil and can very easily be inadvertently damaged. To ensure protection of the root system of trees to remain, temporary tree protection fencing shall be installed at the critical root zone (CRZ) of trees located inside or adjacent to the construction area. **The CRZ of a tree is the zone around the trunk where there should be no disturbance before, during, and after construction. The CRZ is established as being 10 centimetres from the trunk for every centimetre of trunk diameter.**

Temporary tree protection fencing shall be installed according to information indicated on the Proposed Development and Conserved Vegetation Plan inserted in Appendix A of this report. Fencing shall be maintained in good repair at all times during construction operations, and shall only be removed upon completion and when agreed by the contract administrator. Temporary removal of fencing shall not be permitted without the approval from the contract administrator.

Within the CRZ of trees, as delineated by temporary tree protection fencing there should be:

- No disturbance or alteration of the existing grade without approval including addition of fill, excavation, or scraping of the soil;
- No installation of signs, notices or posters on trees;
- No storage of construction materials, surplus soil, construction waste, or equipment;
- No disposal (dumping or flushing) of contaminants or liquids; and,
- No movement of vehicles (personal or business), equipment or pedestrians.

Section 3.2.1.3 addresses mitigation strategies should disturbances or alterations within the tree protection zone be unavoidable.

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3.2.1.3 Work within Protected Areas

3.2.1.3.1 Excavation Work

To ensure the roots are not disturbed more than necessary and where excavation works are unavoidable within the CRZ of trees, the following mitigation measures shall be used:

- **All excavation within the CRZ of trees shall be by hand or hydro excavation using the smallest tools.** Root cutting shall be made using a sharp spade or knife at the limit of disturbance prior to any construction activities.
- **The Contractor shall only tunnel or bore within the CRZ,** instead of creating a trench.
- **Any roots that are exposed by construction activities must be covered with native topsoil immediately,** to ensure that the roots do not dry out or have any further damage occur to them.

In all those instances where root pruning is required, the service of a Certified Arborist or Qualified Tree Worker under the supervision of a Certified Arborist shall be retained. In addition, all remedial works must be conducted by a certified care professional to ensure proper care is administered in order to enable the continued health of the trees.

3.2.1.3.2 Grading Work

Where re-grading is required within the CRZ, it should be performed by hand under the supervision of a Certified Arborist.

3.2.1.4 Additional Protection Measures

The following mitigation measures shall also be respected:

- When working near vegetation, **the Contractor shall ensure that exhaust fumes from all equipment are NOT directed towards any tree's canopy.**
- **Where limbs or portions of trees are removed to accommodate construction work, they will be removed carefully in accordance with accepted arboricultural practices.**
- **Where necessary, the trees will be given an overall pruning to restore their appearance.** Not more than one-third of the total branching shall be removed during a single operation. The services of a Certified Arborist shall be retained for this task.

3.2.2 Tree Removal

To permit the development of this property, the majority of the treed area will be removed.

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3.2.2.1 Clearing and Grubbing of Trees

It should be noted that no tree shall be removed without the City of Ottawa written approval as deemed under By-law number 2009-200.

Any trees designated for removal and located outside a protected area will have the stumps completely excavated and removed unless such removal will adversely affect existing trees / ecology to remain. **When removing the Manitoba maple located at the back of the property, special consideration shall be taken to prevent damages to adjacent trees to be retained.**

3.2.2.2 Wildlife Protection

Clearing operations are prohibited during the breeding migratory bird period which extends from April 15 to July 31 of any year for most migratory birds. Should tree removal during this period be unavoidable, the contractor is required to retain the services of a qualified Avian Biologist who will conduct a breeding migratory bird screening. This screening will identify and ensure there is no evidence of breeding migratory bird activities. Tree removal will be allowed within five days of conducting the screening.

3.2.3 Compensation Planting

Due to the nature of the development proposed for this property and its existing condition, full compensation for the loss of vegetation will not be attainable. We recommend the planting of deciduous trees and shrubs to ensure the development is well integrated in the neighbourhood. In addition, we recommend the following:

- Planting of new street trees where possible;
- Planting only non-invasive tree species.

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4.0 CONCLUSION

In general, none of the vegetation growing on the property is proposed for retention although the proposed development provides the **opportunity to preserve some mature trees** located on or directly adjacent to the property line. This retention of mature trees will promote a residential character to ensure the development blend-in with adjacent neighbouring properties. To ensure survival of the trees to be retained, protection measures recommended in this report shall be applied. Preservation of those trees will be possible by **limiting the footprint of the work area and visually delineating the protected zones from the construction zones**. By installing a tree protection fence, damages to trunks, branches, and root systems will be limited. In addition, we also recommend the planting of trees and shrubs to compensate for a portion of the loss of vegetation.

By following the mitigation recommendations outlined in this report and **ensuring compensation planting is included as part of this development**, we believe this development respond to the character of the community.

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5.0 REFERENCES

City of Ottawa Tree Conservation – Urban By-law 2009-200.

APPENDIX A - DRAWINGS