



517 - 525 FANSHAWE PARK ROAD EAST LONDON, ONTARIO TREE ASSESSMENT REPORT FOR REZONING APPLICATION

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ARCHITECTS INC

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CONTENTS

1.0	Introduction and Executive Summary	1
1.1	Introduction	1
1.2	Executive Summary	1
1	2.1 Tree Species Composition Chart	1
1	2.2 Tree Removal and Preservation Recommendations Chart	2
1	2.3 Tree Removal and Preservation Recommendations	2
2.0	Subject Site and Scope of Work	2
3.0	Methodology	3
3.1	Health Assessment	3
3.2	Critical Root Zones	4
3	.2.1 Critical Root Zone Impact - Preserved Vegetative Buffer	4
4.0	Tree Inventory and Preservation/Removal Recommendations	5
4.1	Tree Data Table	5
5.0	Potential Construction Impacts on Trees	9
5.1	Soil Compaction	9
5.2	Root Loss	9
5.3	Grade Changes	9
5.4	Mechanical Damage	10
5.5	Changes to Exposure - Sun and Wind	10
5.6	Soil Contamination	10
5.7	Water Availability	10
6.0	Construction Impact Mitigation Recommendations	10
6.1	Pre-construction recommendations	10
6.2	Recommendations related to the construction process	11
6.3	Post-construction recommendations	12
7.0	Disclaimer	12
8.0	Contact Information	13
<u>م ۸</u>	Annendiy A - Tree Preservation Drawings	1/

1.0 Introduction and Executive Summary

1.1 Introduction

Ron Koudys Landscape Architects Inc. (RKLA) was retained by Royal Premier Homes (RPH) to prepare a tree assessment report in conjunction with the proposed development at 517, 521 and 525 Fanshawe Park Rd East, London Ontario. The intent of this report is to summarize the findings of the tree assessment and make recommendations regarding tree preservation and removal based on tree health and the current site plan for the purpose of application for rezoning.

Note that refinement of these recommendations will be made upon design refinement at the time of application for site plan approval.

1.2 EXECUTIVE SUMMARY

The inventory captured 62 individual trees and 8 vegetation units. Trees were identified within the subject site, within 3 meters of the legal property boundary, and within the City ROW of Geary Avenue and Fanshawe Park Road East adjacent to the site. No species classified as endangered or threatened under the Ontario Endangered Species Act, 2007, S.O. 2007, c. 6 were observed during the tree inventory. All trees observed are common to the current land uses and can be characterized as anthropogenic. The subject site is NOT within or adjacent to a City of London Tree Protection Area. There are several boundary trees associated with this site.

1.2.1 Tree Species Composition Chart

The following chart summarizes the amount of each tree species observed. Note that the vegetation units are NOT included in this chart.

%	Qty	Species
21%	13	Norway Maple
19%	12	White Spruce
8%	5	Norway Spruce
6%	4	Colorado Blue Spruce
6%	4	Royal Red Norway Maple
5%	3	Apple
5%	3	Columnar Blue Spruce
5%	3	Scotch Pine
3%	2	Amur Maple
3%	2	Magnolia
3%	2	Maple
3%	2	Siberian Elm
2%	1	Eastern Red Cedar
2%	1	Honeylocust
2%	1	Manitoba Maple
2%	1	Mulberry
2%	1	Silver Maple
2%	1	Unknown Deciduous Tree
2%	1	Unknown Fruit Tree
100%	62	

1.2.2 TREE REMOVAL AND PRESERVATION RECOMMENDATIONS CHART Based on the current site plan, we offer the following tree preservation and removal recommendations categorized into location/ownership.

	Subject Site			ROW		vate Property and Subject Site	Boun & Ac	TOTAL	
	QTY	ID#	QTY	ID#	QTY	ID#	QTY	ID#	QTY
Trees to be Preserved	2	45, 46	0		4	22, 26, 47, 50	14	23-25, 27, 51-60	20
Trees to be Removed	37	1, 2, 7-21, 28-44, 48, 49, 62	4	3-6	0		1	61	42
Veg Units to be Preserved	1	1	0		2	6, 7	0		3

Veg Units to be Removed 4 2-4, 8 1 5 0 0

1.2.3 Tree Removal and Preservation Recommendations

- At time of application for SPA, acquire consent from City of London for removal of 4 trees and 1 vegetation unit from the City ROW along Fanshawe Park Road East.
- At time of application for SPA, acquire consent from owner of 1531 to remove one dead boundary tree (tree ID #61).
- Preserve all trees beyond the subject site and all (except tree #61) boundary trees.
- Follow pre, during, and post construction recommendations outlined in the Construction Impact Mitigation Recommendations in this report.

2.0 SUBJECT SITE AND SCOPE OF WORK

The subject site is comprised of three adjacent municipal lots -517, 521, and 525 Fanshawe Park Road E at the SW corner of the intersection of Fanshawe Park Road E and Greary Ave. The land is currently occupied by three single family dwellings associated landscaping. Lands immediately surrounding the site can be characterized as low density residential.



Figure 1 - Image capture from Google Red dashed line - limit of tree inventory

Existing trees are associated with the existing dwellings. Trees are located generally along property lines and scattered within each of the three lots.

The scope of this tree inventory includes the subject site as well as trees within 3m of the subject site property line. Refer to Figure 1 for scope of tree inventory.

3.0 METHODOLOGY

Field work was completed on March 22, 2021 by RKLA staff member Michelle Peeters, ISA certified arborist ON 2129A. A topographic survey provided by AGM, dated March 16, 2021 was used as a base for the field work and determined tree location/ownership. All trees with a minimum DBH of 10cm within the given scope were identified and assessed. Groups of trees and hedges were identified and assessed as vegetation units. Trees were NOT tagged in the field. Each tree and vegetation unit was assigned a number which are identified in the tree data table and on the tree preservation plan. Tree identification numbers include 1-62, vegetation unit identification numbers include Veg 1 - Veg 8.

The following information was recorded for each individual tree:

Genus + specific epithet (Species)

Diameter at breast height (DBH) (centimetres)

Crown radius (metres)

Crown Condition (overall general vigour of crown)

Structural Form (excellent, good, fair, poor)

Structural Integrity (good, fair, poor, hazard)

General Comments

3.1 HEALTH ASSESSMENT

Trees were assessed following accepted arboricultural techniques and best practices using a limited visual inspection. The inspection included a 360 degree visual examination of the above-ground parts of each tree for structural defects including cavities, wounds, scars, external indicators of internal decay, evidence of insect presence, discoloured or deformed foliage, canopy and root distribution, and the overall condition of the tree. Evaluation of tree health was based on visible tree health indicators including live buds, foliage condition, deadwood, structural defects, form, and signs of disease or insect infestation. Field observations were reviewed against available online imagery of the site to assist in determining tree canopy health. Quantified health assessments included in the inventory are explained here:

Crown Condition Assessment

- 5 Healthy: less than 10% crown decline
- 4 Slight decline: 11% 30% crown decline
- 3 Moderate decline: 31% 60% crown decline
- 2 Severe decline: 61% 90% crown decline
- 1 Dead No visible indication of living foliage or buds in crown

Structural Form Assessment

Excellent: An ideal expression of a specific tree species, true to form, balanced

canopy, good flare, typical internode length, full crown, etc.

Good: A satisfactory and generally expected expression of a specific tree

species, with only minor or typical variances from an ideal form.

Fair: Nearly satisfactory, with defects or a combination of defects such as

codominant leaders, unbalanced crown, poor/no flare, shortened

internodes, has been poorly pruned, etc.

Poor: Significantly flawed expression of a specific tree species

Structural Integrity Assessment

Good: Defects if present are minor (e.g. twig dieback, small wounds); defective

tree part is small (e.g. 5-8 cm diameter limb) providing little if any risk.

Fair: Defects are numerous or significant (e.g. dead scaffold limbs); defective

parts are moderate in size (e.g. limb greater than 5-8 cm in diameter).

Poor: Defects are severe (trunk cavity in excess of 50%); defective parts are large

(e.g. majority of crown).

Hazard: Defects are severe and acute; defective part or collective defective parts

render the tree a high risk threat to potential targets.

3.2 Critical Root Zones

The critical root zone of a tree is the portion of the root system that is the minimum necessary to maintain tree vitality and stability. Critical root zones are commonly prescribed by municipal bylaws based solely on DBH and/or drip line, and are typically expressed as a circular shape around the tree. There are a number of other factors, however, that are considered when establishing a critical root zone.

Factors that inform location and extent of a tree preservation barriers to protect the critical root zone include: species tolerance to root loss and other construction impacts (as established by authoritative resources and professional experience), tree trunk size (DBH), tree health and vigour, structural condition, landscape context, soil type, moisture availability, topography, ground cover, crown size (drip line) and balance, current physical root restrictions, visible root arrangement, relationship to neighbouring trees, relationship between tree and proposed construction, type of proposed construction, etc.

The City of London Tree Protection By-Law (C.P.-1555-252) defines the Critical Root Zone as "the area of land within a radius of ten (10) cm from the trunk of a tree for every one (1) cm of trunk diameter". The Tree Preservation drawing graphically represents this radius for trees to be preserved.

3.2.1 CRITICAL ROOT ZONE IMPACT - PRESERVED VEGETATIVE BUFFER

There is a mature vegetative buffer along the East half of the Southern property line comprised of mature Spruce trees (tree ID #'s 50-60). Through the design process, the preservation of this feature has been a priority. RKLA has coordinated with the consulting engineer to limit excavation in this area as much as possible given the current site plan. RKLA provided the consulting engineer with a recommended limit of construction informed by the critical root zones of these trees. The resulting

grading plan notes that grading is to match existing grade at the recommended limit. Note that some of the trees in this buffer are expected to have their critical root zones impacted, but the impact is very minor. Refer to the tree data table in section 4 of this report for details (% of critical root zone) on the expected impact. The following factors were considered when determining the recommended limit of construction:

- The trees within the buffer are in generally good overall condition which enables them to recover from root loss.
- The area south of the buffer is generally open lawn space with no root space limitations.
- Many of the trees will experience a reduction in critical root zone mass of less than 5%.
- The maximum reduction in critical root zone mass is 9%.
- Pre-construction root pruning is recommended for these trees to further mitigate construction impacts and promote healthy root growth.

RKLA would be pleased to discuss our approach and consideration for these trees with City of London Forestry staff should there be any concerns or questions about the preservation of this feature.

4.0 Tree Inventory and Preservation/Removal Recommendations

4.1 TREE DATA TABLE

The following recommendations are based on requirements of the current site plan. Grey indicates recommended removal.

	GENER	SIZ			HEALTH	I & CONDITION	RECOMMENDATIONS					
ID #	BOTANICAL NAME	COMMON NAME	LOCATION	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACT (CRZ = critical root zone)	PRESERVE OR REMOVE	NOTES IMPACT MITIGATION CONSENT REQUIREMENTS
TREE	S											
1	Magnolia spp	Magnolia	subject site	29, 28, 25, 24, 23, 19	6	5	good	good	Multistem 6, lovely specimen, minor epicormic growth, minor branch fusing, included bark at some unions	direct conflict with proposed site plan	remove	none
2	Acer platanoides	Norway Maple	subject site	73	8.5	4	good	good	Wide matted flare, loose crown, clustered primary union, fused branches	direct conflict with proposed site plan	remove	none
3	Acer platanoides	Norway Maple	City ROW	64	7	5	good	good	Wide flare, dead wood	direct conflict with proposed site plan	remove	developer to apply for consensual removal from City via trees@london.ca
4	Acer platanoides	Norway Maple	City ROW	29	3.5	5	good	good	On slope, salt damage	direct conflict with proposed site plan	remove	developer to apply for consensual removal from City via trees@london.ca
5	Acer platanoides	Norway Maple	City ROW	37	3.5	5	good	good	On slope, salt damage, diminished leader	direct conflict with proposed site plan	remove	developer to apply for consensual removal from City via trees@london.ca

6	Picea glauca	White Spruce	City ROW	29	3	4	good	good	Limbed up 2m, a bit scraggly	direct conflict with proposed site plan	remove	developer to apply for consensual removal from City via trees@london.ca
7	Acer platanoides	Norway Maple	subject site	77	7	4	good	fair	Wide flare, elevated at base, minor trunk wounds, 1 scaffold branch cracking	direct conflict with proposed site plan	remove	none
8	Magnolia spp	Magnolia	subject site	31, 21, 18, 13	4	5	fair	good	Multistem 4, unbalanced crown, low crown, epicormic growth, fused branches	direct conflict with proposed site plan	remove	none
9	Acer ginnala	Amur Maple	subject site	<20	4	4	poor	poor	Multistem 12, stems emerging from around base of original (now dead) tree (stump), significant rot	poor condition	remove	none
10	Picea abies	Norway Spruce	subject site	45	4.5	5	good	good	Limbed up 2.5m	conflict with required grading	remove	none
11	Pinus sylvestris	Scotch Pine	subject site	31	3	3	fair	good	Supressed, diminished leader, limbed up 4m, thin crown	conflict with required grading	remove	none
12	Pinus sylvestris	Scotch Pine	subject site	30	3	3	fair	fair	Diminished leader, dead wood, circling root, limbed up 4m	conflict with required grading	remove	none
13	Pinus sylvestris	Scotch Pine	subject site	50	5	5	good	good	Limbed up 4m	direct conflict with proposed site plan	remove	none
14	Acer ginnala	Amur Maple	subject site	<20	4.5	4	poor	poor	Multistem 15, stems emerging from around base of original (now dead) tree (stump), significant rot, gnarlly base	direct conflict with proposed site plan & poor condition	remove	none
15	Juniperus virginiana	Eastern Red Cedar	subject site	30	2.5	5	good	good	Limbed up 5m, codominant leaders	direct conflict with proposed site plan	remove	none
16	Acer platanoides	Norway Maple	subject site	32, 12	6	5	good	good	Multistem 2, on slope within coniferous hedge	direct conflict with proposed site plan	remove	none
17	Acer platanoides	Norway Maple	subject site	23, 23, 15, 10, 6	5.5	5	fair	good	Multistem 5, primary union below grade, on slope, scrubby form	direct conflict with proposed site plan	remove	none
18	Morus alba	Mulberry	subject site	13	4.5	4	fair	good	On slope, bent leader, supressed	direct conflict with proposed site plan	remove	none
19	Picea abies	Norway Spruce	subject site	48	6	5	good	good	Limbed up 1.5m, dead lower branches	direct conflict with proposed site plan	remove	none
20	Picea abies	Norway Spruce	subject site	44	4	4	good	good	Limbed up 6m, dead lower branches	direct conflict with proposed site plan	remove	none
21	Acer negundo	Manitoba Maple	subject site	30	6	4	fair	fair	Lean NE, supressed, unbalanced crown	direct conflict with proposed site plan	remove	none
22	Picea abies	Norway Spruce	1536 Geary Ave	~45	6	4	good	good	Limited visual access, limbed up 2m, dead lower branches	no impact to CRZ	preserve	tree protection fencing
23	Acer platanoides	Norway Maple	BOUNDARY subject site & 1536 Geary Ave	13	4	4	fair	fair	Growing at fence line, slight lean N, supressed, thin crown	no impact to CRZ	preserve	tree protection fencing
24	Acer platanoides	Norway Maple	BOUNDARY subject site & 1536 Geary Ave	16	5	4	fair	fair	Trunk grown through ex. chainlink fence, at centre of fence line, slight lean N	no impact to CRZ	preserve	tree protection fencing
25	Acer spp	Maple	BOUNDARY subject site & 1536 Geary Ave	16	3	4	fair	good	30cm south of base of ex. fence	no impact to CRZ	preserve	tree protection fencing
26	Acer spp	Maple	1536 Geary Ave	15	4	4	fair	good	1m south of base of ex. fence	no impact to CRZ	preserve	tree protection fencing
27	Unknown Deciduous Tree	Unknown Deciduous Tree	BOUNDARY subject site & 1536 Geary Ave	16	3	5	fair	good	40cm south of base of ex. fence, scraggly form	no impact to CRZ	preserve	tree protection fencing
28	Ulmus pumila	Siberian Elm	subject site	30	5	4	fair	fair	Trunk grown through ex. chainlink fence, dead wood, scraggly form	root damage expected, undesirable tree species and condition (grown through fence)	remove	none

29	Ulmus pumila	Siberian Elm	subject site	22	5	4	fair	fair	Trunk grown through ex. chainlink fence, dead wood, scraggly form, bulgey base	root damage expected, undesirable tree species and condition (grown through fence)	remove	none
30	Unknown Fruit Tree	Unknown Fruit Tree	subject site	13, 9, 9, 8	3.5	5	good	good	Multistem 4	significant root damage	remove	none
31	Acer platanoides	Norway Maple	subject site	50	5	4	fair	fair	Heavily pruned, thin crown, cracking branches, dead wood	direct conflict with proposed site plan	remove	none
32	Acer platanoides	Norway Maple	subject site	40	5.5	5	good	good	Minor bark cracking	significant root damage	remove	none
33	Malus spp	Apple	subject site	37	5	5	good	good	Minor dead wood and epicormic growth	direct conflict with proposed site plan	remove	none
34	Malus spp	Apple	subject site	28, 22, 19	6	4	fair	fair	Multistem 3, dead wood, scraggly form, half of root system under flagstone patio	direct conflict with proposed site plan	remove	none
35	Acer platanoides 'Royal Red'	Royal Red Norway Maple	subject site	33	4	5	good	good	Slight lean NE	direct conflict with proposed site plan	remove	none
36	Acer platanoides 'Royal Red'	Royal Red Norway Maple	subject site	47	5.5	5	good	good	Minor salt damage, lesions on trunk - may need to confirm canopy health after bud break	conflict with removal of adjacent ex. driveways and necessary grading	remove	none
37	Picea pungens var. glauca	Colorado Blue Spruce	subject site	25	2.5	5	good	good	Full form, branched to grade	conflict with required grading	remove	none
38	Picea pungens var. glauca	Colorado Blue Spruce	subject site	25	2.5	5	good	good	Full form, branched to grade	conflict with required grading	remove	none
39	Picea pungens var. glauca	Colorado Blue Spruce	subject site	25	2.5	5	good	good	Full form but a bit thin, branched to grade	conflict with required grading	remove	none
40	Acer platanoides 'Royal Red'	Royal Red Norway Maple	subject site	13	2.5	5	good	good	Supressed, heavy S	conflict with required grading	remove	none
41	Picea pungens var. glauca	Colorado Blue Spruce	subject site	25	2.5	5	good	good	Full form, branched to grade	conflict with required grading	remove	none
42	Picea pungens var. glauca 'Fastigiate'	Columnar Blue Spruce	subject site	13	1	5	good	good	Limbed up 1m	Not suitable for the landscape, open up space for full development of tree #45	remove	none
43	Picea pungens var. glauca 'Fastigiate'	Columnar Blue Spruce	subject site	13	1	5	good	good	Limbed up 1m	Not suitable for the landscape, open up space for full development of tree #45	remove	none
44	Picea pungens var. glauca 'Fastigiate'	Columnar Blue Spruce	subject site	11	1	5	good	good	Limbed up 1m	Not suitable for the landscape, open up space for full development of tree #45	remove	none
45	Acer platanoides 'Royal Red'	Royal Red Norway Maple	subject site	12	2.5	5	good	good	On slope	no impact to CRZ	preserve	tree protection fencing
46	Acer platanoides	Norway Maple	subject site	46	5	5	good	good	Full form, bottom of slope	9% of CRZ to be removed from W side of tree	preserve	preconstruction root pruning and tree protection fencing
47	Acer platanoides	Norway Maple	1543 Stoneybrook Cres	31	4.5	5	fair	good	Scraggly lower branches	no impact to CRZ	preserve	tree protection fencing
48	Gleditsia triacanthos var. inermis	Honeylocust	subject site	10	2	2	good	good	Mostly dead	direct conflict with proposed site plan	remove	none
49	Acer saccharinum	Silver Maple	subject site	95	9	5	excellent	good	Minor dead wood, full form, excellent condition for a mature Silver Maple	direct conflict with proposed site plan	remove	none
50	Picea abies	Norway Spruce	1543 Stoneybrook Cres	~45, 45	6	5	good	good	Multistem 2, limited visual access, llimbed up 6m	8% of CRZ to be removed from NW corner or tree	preserve	tree protection fencing & root pruning
			•	•	•				•	•	•	•

51	Picea glauca	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	30, 26	3	5	fair	fair	Multistem 2, limbed up 6m, codominant leaders with included bark	8% of CRZ to be removed from NW corner or tree	preserve	tree protection fencing & root pruning
52	Picea glauca	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	30	3	5	good	good	Limbed up 5m	<1% of CRZ to be removed from N side of tree	preserve	tree protection fencing & root pruning
53	Picea glauca	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	37	3	4	good	good	Limbed up 6m, sparse crown	4% of CRZ to be removed from N side of tree	preserve	tree protection fencing & root pruning
54	Picea glauca	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	34	3	5	good	good	Limbed up 6m	1% of CRZ to be removed from N side of tree	preserve	tree protection fencing & root pruning
55	Picea glauca	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	45	4	5	good	good	Limbed up 6m, droopy branches	9% of CRZ to be removed form N side of tree	preserve	tree protection fencing & root pruning
56	Picea glauca	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	32	3	5	good	good	Limbed up 6m, a bit thin	<1% of CRZ to be removed from N side of tree	preserve	tree protection fencing & root pruning
57	Picea glauca	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	30	4	5	good	good	Limbed up 6m	<1% of CRZ to be removed from N side of tree	preserve	tree protection fencing & root pruning
58	Picea glauca	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	39	3	5	good	good	Limbed up 6m, a bit thin	6% of CRZ to be removed from N side of tree	preserve	tree protection fencing & root pruning
59	Picea glauca	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	32	4	5	good	good	Limbed up 6m	1% of CRZ to be removed from N side of tree	preserve	tree protection fencing & root pruning
60	Picea glauca	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	18	2	2	good	good	Very thin crown	no impact to CRZ	preserve	tree protection fencing
61	Picea glauca	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	20	2	1	good	good	dead	dead tree	remove	dead CONSENT REQUIRED
62	Malus spp	Apple	subject site	23	2.5	2	poor	poor	Significant vertical trunk wound with rot, dead limbs, heavily pruned	direct conflict with proposed site plan	remove	none
L	ATION UNITS	T =	1								1	T .
Veg 1	Thuja occidentalis 'Nigra'	Black Cedar Hedge	subject site	<10	0.5	5	good	good	23m long hedge, tightly pruned and very well maintained	very minor root damage expected	preserve	tree protection fencing
Veg 2	Thuja occidentalis 'Nigra'	Black Cedar Hedge	subject site	5 -15	1	5	good	good	12m long hedge, a bit loose	direct conflict with proposed site plan	remove	none
Veg 3	Thuja occidentalis 'Nigra'	Black Cedar Hedge	subject site	10 -15	1	5	good	good	12m long hedge, loose	direct conflict with proposed site plan	remove	none
Veg 4	Thuja occidentalis 'Nigra'	Black Cedar Hedge	subject site	10 -25	1	4	fair	good	16m long hedge, loose and scraggley	direct conflict with proposed site plan	remove	none
Veg 5	Thuja occidentalis 'Smaragd'	Emerald Cedar Group	City ROW	<10	0.5	5	good	good	12 individual trees in a group	not suitable for City ROW	remove	developer to apply for consensual removal from City via trees@london.ca
Veg 6	Thuja occidentalis 'Nigra'	Black Cedar Hedge	1543 Stoneybrook Cres	10 -25	1	4	fair	good	23m long hedge, a bit loose, partially shaded out	no impact expected	preserve	tree protection fencing
Veg 7	Thuja occidentalis 'Nigra'	Black Cedar Hedge	1537 Stoneybrook Cres	~20	1	4	fair	good	8m long hedge, loose and leggy	very minor root damage expected	preserve	tree protection fencing
Veg 8	Thuja occidentalis 'Smaragd'	Emerald Cedar Hedge	subject site	<10	0.5	5	good	good	50m long L shaped hedge, individuals are spaced out, not forming a continuous hedge	Not suitable for the landscape	remove	none

5.0 POTENTIAL CONSTRUCTION IMPACTS ON TREES

Some trees have been recommended for removal due to direct conflict with the proposed development. Some trees that have been recommended for preservation may be in proximity to the proposed construction. Trees to be preserved may be affected by the construction process, or by the construction itself. It is imperative that the design team and the construction crew understand the potential for, and the causes of tree damage. Trees recommended for preservation may experience some or all of the following potential construction impacts. Strategies and methods to avoid these impacts are outlined in the Construction Impact Mitigation Recommendations section of this report.

5.1 SOIL COMPACTION

Soil compaction is caused by heavy or repeated compression or vibration of the soil around the tree. Soil compaction reduces the amount and size of macro and micro pore space that is vital for subsurface movement of air and water. The harmful effects of soil compaction include, but are not limited to: slower water infiltration, poor aeration, reduced root growth and an overall increased susceptibility to biotic and abiotic stressors.

5.2 ROOT LOSS

Root loss occurs when roots are severed. The majority of roots are typically located within the top 60cm of soil and can extend outward up to three times the extent of the tree drip line. Excavation of any kind within the critical root zone* can sever roots. Two categories of roots need to be considered when evaluating impacts of root loss - small, fibrous absorbing roots, and large structural roots. Significant loss of either or both of these functions can cause stress and/or affect the structural stability of the tree. Note, however, that it is commonly accepted that healthy trees can typically tolerate and recover from the removal of approximately 33% (up to a maximum of 50%) of their root mass. Thorough consideration regarding extent of acceptable root removal is dependent on individual species characteristics, root loss distribution, and site specific conditions (ref. Trees and Development: A Technical Guide to Preservation of Trees During Land Development by Nelda Matheny and James R. Clark, 1998. Pg 72).

5.3 Grade Changes

Lowering of the grade around trees has immediate and long term effects on trees. Lowering of grade requires immediate root loss from cutting the roots which results in water stress from the root removal and potential reduced structural stability.

Raising the grade around a tree can be equally damaging. The addition of fill over the root zone of a tree alters the roots' ability for normal water and gas exchange that is necessary for healthy root growth and stability. Fill essentially suffocates the roots and can lead to the slow and eventual decline of the tree.

^{*} Refer to 'Critical Root Zones" in this report for definition.

5.4 MECHANICAL DAMAGE

Mechanical damage is caused by physical contact with a tree that damages the tree to any degree. During land development and construction activities, there is an increased risk of both minor and fatal mechanical damage to trees from construction equipment. Minor damage can create entry points for insects and pathogens, and fatal damage can cause irreparable structural damage.

5.5 Changes to Exposure - Sun and Wind

Trees can be negatively affected by <u>increased exposure</u> to sun or wind when neighbouring trees are removed. This can be of particular concern when 'interior trees' (trees that have developed surrounded by other trees) are suddenly exposed to forest edge conditions. These trees may experience higher intensity of direct sunlight resulting in leaf scald, and instability due to increased wind and snow loads.

Trees can be negatively affected by <u>decreased exposure</u> to sunlight. Proposed development that includes tall buildings located to the south and west of mature existing trees can greatly reduce the amount of daily direct sunlight. While this change in environment may not cause the immediate or eventual death of a tree, it can certainly slow development and alter growing habits and patterns, and must therefore be a consideration when evaluating trees for potential preservation.

5.6 SOIL CONTAMINATION

Soil health around a tree can be compromised by contamination from spills or leaks of fuels, solvents, or other construction related fluids.

5.7 WATER AVAILABILITY

Grading and servicing requirements for development can affect water availability for trees. Trees may experience a loss of available water due to a lowered water table or the capture or redirection of subsurface and/or overland flow. Conversely, trees may experience an increase of available water due to changes in site grading and storm water retention efforts.

The successful survival of the trees to be preserved is largely dependent on adhering to the construction impact mitigation recommendations that follow.

6.0 Construction Impact Mitigation Recommendations

The following general recommendations are provided to guide the removal process, mitigate construction impacts, and ensure compliance with provincial, federal, and municipal regulatory requirements. Some of the recommendations listed below are noted to be undertaken by an ISA certified arborist.

6.1 Pre-construction recommendations

a) Prior to any construction activity, tree preservation fencing is to be installed as per the attached tree preservation drawings and detail.

- b) Where high quality specimens to be preserved are adjacent to areas subject to intensive construction activities, these trees are to have additional protection measures implemented to protect their trunks from mechanical damage. These measures may include surrounding the trunk with wood planks. Trees that require additional protection will be clearly identified on the tree preservation plan with detailed information on specific protection measures.
- c) Trees approved for removal are to be clearly indicated in the field (marked with spray paint or other agreed upon method) by the project arborist or landscape architect prior to any tree removal operations. All removals to be undertaken by an ISA certified arborist.
- d) Pre-construction root pruning is required for several trees to help reduce stress and prepare the tree for nearby construction activity. The root pruning specifications and locations are noted on sheet T1. To be undertaken by an ISA certified arborist
- e) In accordance with the Migratory Birds Convention Act, 1994, all removals must take place between September 1st and March 31st to avoid disturbing nesting migratory birds. If tree removal occurs between April 1st and August 31st, a biologist is required to complete a search for nests. Once cleared, the contractor has 48 hours to remove. If removal does not occur within 48 hours, another search will be required.
- f) Care should be taken during the felling operation to avoid damaging the branches, stems, trunks, and roots of nearby trees to be preserved. Where possible, all trees are to be felled towards the construction zone to minimize impacts on adjacent vegetation. All removals to be undertaken by an ISA certified arborist.
- g) It is recommended that the existing ground-layer vegetation at the base of trees to be preserved remain intact within the critical root zone so as not to disturb the soil around the base of the existing trees.
- h) Final site grading plans should ensure that the existing soil moisture conditions are maintained.

6.2 RECOMMENDATIONS RELATED TO THE CONSTRUCTION PROCESS

- a) Tree preservation fencing is to be maintained in good condition and effective for the duration of construction until all construction activity is complete or as per the project arborist or landscape architect.
- b) Tree preservation fencing is to remain intact as per the tree preservation drawings, and can only be temporarily removed with the express written consent from the project arborist or landscape architect. Should tree preservation fencing be temporarily relocated or moved, it is to be reinstated as per the tree preservation plans as soon as possible.
- c) No construction, excavation, adding of fill, stockpiling of construction material, or heavy equipment is permitted within the critical root zone/within the tree preservation fencing.
- d) When excavation near a tree is required, and it is anticipated that roots will be severed and exposed, duration of exposure is to be minimized to prevent root desiccation.

- e) During the excavation process, roots 25mm or larger that are severed and exposed should be hand pruned to leave a clean-cut surface. To be undertaken by an ISA certified arborist. Exposed severed roots that cannot be covered in soil on the same day as the cuts are made are to be kept moist. Exposed roots are to be kept moist by covering them with water soaked burlap or any other means available to prevent them from drying out.
- f) Avoid idling heavy equipment under or within close proximity to trees to be preserved to prevent canopy damage from exposure to the heat of the exhaust.
- g) Broken branches on trees within the subject site to be preserved should be cleanly cut as soon as possible after the damage has occurred. To be undertaken by an ISA certified arborist. Should branches on City owned trees be damaged by or during construction, the contractor is to notify City of London Forestry Operations as soon as possible. No person(s) other than City staff or the City's designated contractor may perform work on any City tree.

6.3 Post-construction recommendations

- a) Avoid discharging rain water leaders adjacent to retained trees, as this may result in an overly moist environment which can cause root rot.
- b) After all work is completed, tree preservation fences and any other impact mitigation paraphernalia must be removed.
- c) A final review must be undertaken by the project arborist or landscape architect to ensure that all mitigation measures as described above have been met.

7.0 DISCLAIMER

The assessment of the trees presented within this report has been made using accepted arboricultural techniques. These include a visual examination of the above-ground parts of each tree for structural defects, scars, external indications of decay, evidence of insect presence, discoloured foliage, the general condition of the trees and the surrounding site, as well as the proximity of property and people. None of the trees examined were dissected, cored, probed, or climbed, and detailed root crown examinations involving excavation were not undertaken.

Notwithstanding the recommendations and conclusions made in this report, it must be realized that trees are living organisms and their health and vigour is constantly changing. They are not immune to changes in site conditions or seasonal variations in the weather.

While reasonable efforts have been made to ensure the trees recommended for retention are healthy, no guarantees are offered or implied, that these trees or any part of them will remain standing.

Note that this arborist report has been prepared using the latest drawings and information provided by the client. Any subsequent design or site plan changes affecting trees may require revisions to this report. Any new information or drawings are to be provided to RKLA prior to report submission to planning authorities.

8.0 CONTACT INFORMATION

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Staff:

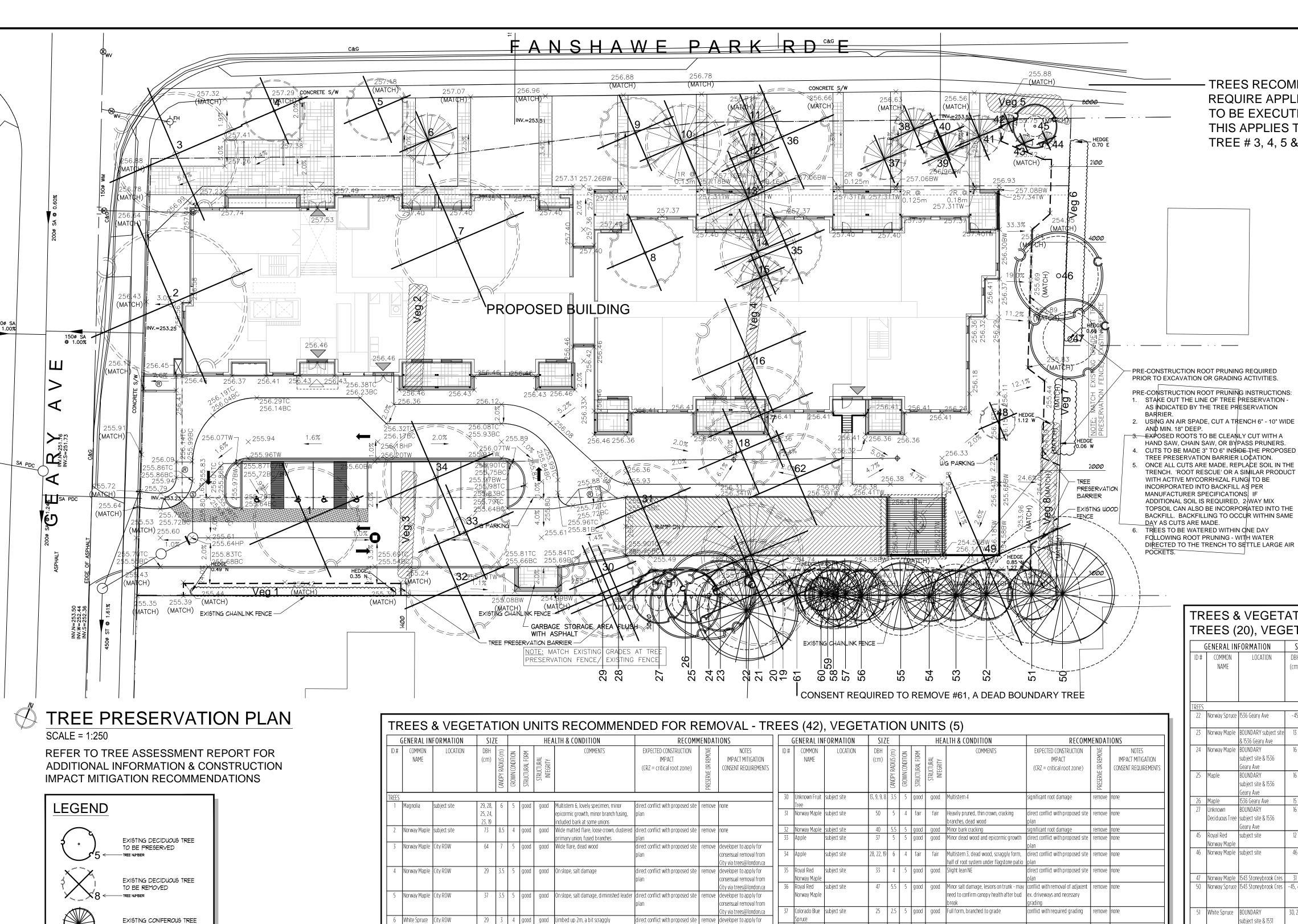
Field work and report author

Michelle Peeters - michelle@rkla.ca

Qualifications ISA Certified Arborist ON-2129A

ISA Tree Risk Assessment Qualified Qualified Butternut Assessor BHA #710 OALA full member - landscape architect

9.0 APPENDIX A - TREE PRESERVATION DRAWINGS



TO BE PRESERVED

TO BE REMOVED

EXISTING CONIFEROUS TREE

CRITICAL ROOT ZONE (AREA

-OF LAND WITHIN A RADIUS OF

10cm FROM TRUNK FOR EVERY

Icm OF TRUNK DIAMETER)

EXISTING VEGETATION UNIT

EXISTING VEGETATION UNIT

TREE PROTECTION BARRIER

PRE-CONSTRUCTION ROOT

TO BE PRESERVED

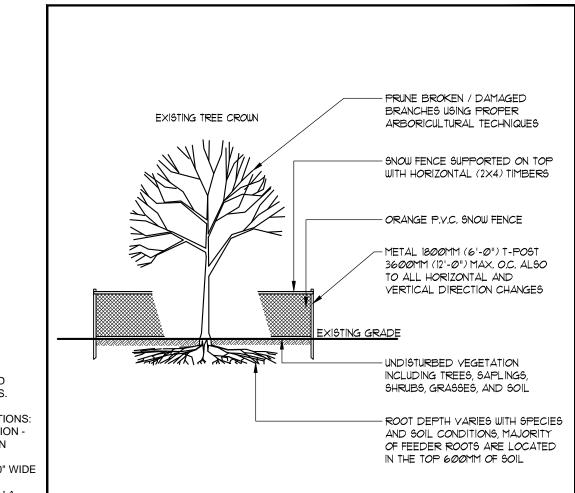
TO BE REMOVED

 \sim

29 3 4 good good Limbed up 2m, a bit scraggly Colorado Blue subject site consensual removal from Colorado Blue subject site ull form but a bit thin, branched to onflict with required grading Wide flare, elevated at base, minor trunk | direct conflict with proposed site | remove unds, 1 scaffold branch cracking 2.5 | 5 | good | good | Supressed, heavy S 0 Royal Red subject site onflict with required grading ultistem 4, unbalanced crown, low crown, direct conflict with proposed sit ormic growth, fused branches 5 | 2.5 | 5 | good | good | Full form, branched to grade conflict with required grading tistem 12, stems emerging from 11 | | Colorado Blue | | subject site round base of original (now dead) tree mp), significant rot Columnar Blue | subject site t suitable for the landscape, en up space for full 45 | 4.5 | 5 | good | good | Limbed up 2.5m nflict with required grading | remov opment of tree #45 pressed, diminished leader, limbed up conflict with required grading Columnar Blue Isubject site lot suitable for the landscape. Diminished leader, dead wood, circling elopment of tree #45 ot, limbed up 4m ot suitable for the landscape, Columnar Blue | subject site ect conflict with proposed site | rem pen up space for full 20 4.5 4 poor poor Multistem 15, stems emerging from velopment of tree #45 4 Amur Maple subject site direct conflict with proposed site | remove | r around base of original (now dead) tree plan & poor condition ımp), significant rot, gnarlly base excelle good Minor dead wood, full form, excellent Limbed up 5m. codominant leaders ct conflict with proposed site f I rem condition for a mature Silver Maple Norway Maple | subject site Multistem 2, on slope within coniferous irect conflict with proposed site | remove |na CONSENT REQUIRED subject site & 1531 Norway Maple subject site Multistem 5, primary union below grade ! | poor | poor | Significant vertical trunk wound with rot, | direct conflict with proposed site On slope, bent leader, supressed EGETATION UNITS Norway Spruce subject site imbed up 1.5m, dead lower branches ct conflict with proposed site | remove | Norway Spruce subject site Limbed up 6m, dead lower branche ct conflict with proposed site | ren 6m long hedge, loose and scraggley lirect conflict with proposed site | remove | no Lean NE, supressed, unbalanced crown rect conflict with proposed site | remove | no Manitoba Trunk grown through ex. chainlink fence, root damage expected, 112 individual trees in a group dead wood, scraggly form esirable tree species and nsensual removal from Om long L shaped hedge, individuals are Not suitable for the landscape Trunk grown through ex. chainlink fence. I root damage expected, spaced out, not forming a continuous dead wood, scraggly form, bulgey base undesirable tree species and

TREES RECOMMENDED FOR REMOVAL WITHIN THE CITY ROW REQUIRE APPLICATION TO THE CITY FOR CONSENSUAL REMOVAL. TO BE EXECUTED AT THE TIME OF APPLICATION FOR SPA. THIS APPLIES TO THE FOLLOWING:

TREE # 3, 4, 5 & 6 AND VEG UNIT # 5



GENERAL INFORMATION SIZE

- EXISTING TREES ARE TO BE PROTECTED FROM CONSTRUCTION WITH THE INSTALLATION OF A 1200MM (4'-0") HIGH SNOW FENCE, HELD IN PLACE WITH 1800MM (6'-0") 'T-BAR'. THE BARRIER IS TO BE INSTALLED PRIOR TO ANY CONSTRUCTION AND MUST REMAIN IN
- PLACE UNTIL ALL CONSTRUCTION IS COMPLETED. ALL SUPPORTS AND BRACING SHOULD BE INSIDE THE TREE PROTECTION ZONE. ALL SUCH SUPPORTS SHOULD MINIMIZE DAMAGING ROOTS IN THE TREE PROTECTION ZONE. NO CONSTRUCTION ACTIVITY, GRADE CHANGES, SURFACE TREATMENT, OR EXCAVATION OF ANY
- KIND IS PERMITTED WITHIN THE TREE PROTECTION ZONE. NO MOVEMENT OF EQUIPMENT, STORAGE OF BUILDING SUPPLIES, CLEANING OR EQUIPMENT, OR DUMPING OF SOLVENTS, GASOLINE, ETC., MAY OCCUR WITHIN THIS FENCE LINE. WHERE HIGH QUALITY SPECIMENS OCCUR ADJACENT TO AREAS SUBJECTED TO INTENSIVE
- CONSTRUCTION ACTIVITY, WOODEN CRIBBING SHOULD BE INSTALLED TO PROTECT TRUNKS FROM DAMAGE IN THE EVENT THAT HEAVY EQUIPMENT BREAKS DOWN THE SNOW FENCING. FENCE TO BE INSPECTED BY ENVIRONMENTAL CONSULTANT ON A REGULAR BASIS AND BE

RECOMMENDATIONS

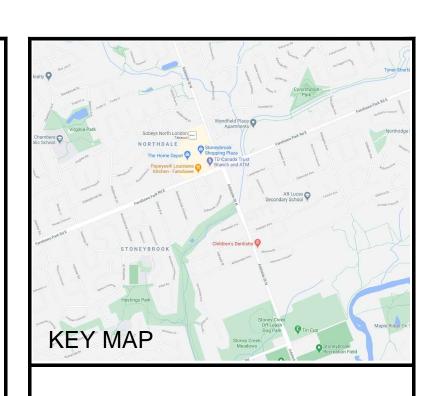
TEMP. TREE PROTECTION BARRIER - N.T.S.

TREES & VEGETATION UNITS RECOMMENDED FOR PRESERVATION TREES (20), VEGETATION UNITS (3)

HEALTH & CONDITION

MAINTAINED BY THE SUBDIVIDER / BUILDER

ID #		LOCATION	DDII	г –		Π	HEAL	COMMENTS			NOTEC
ID#	COMMON NAME	LOCATION	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACT (CRZ = critical root zone)	PRESERVE OR REMOVE	NOTES IMPACT MITIGATION CONSENT REQUIREMENTS
TREES 22	Norway Spruce	1576 Coary Avo	~45	6	4	good	good	Limited visual access, limbed up 2m,	no impact to CRZ	nrocorvo	tree protection fencing
ZZ	INOI Way Spruce	1000 deally Ave	~43	0	4	yuu	yoou	dead lower branches	IIID IIIIpact to CRZ	preserve	tree protection rending
23		BOUNDARY subject site & 1536 Geary Ave	13	4	4	fair	fair	Growing at fence line, slight lean N, supressed, thin crown	no impact to CRZ	preserve	tree protection fencing
24	Norway Maple	BOUNDARY subject site & 1536 Geary Ave	16	5	4	fair	fair	Trunk grown through ex. chainlink fence, at centre of fence line, slight lean N	no impact to CRZ	preserve	tree protection fencing
25	Maple	BOUNDARY subject site & 1536 Geary Ave	16	3	4	fair	good	30cm south of base of ex. fence	no impact to CRZ	preserve	tree protection fencing
26	Maple	1536 Geary Ave	15	4	4	fair	good	1m south of base of ex. fence	no impact to CRZ		tree protection fencing
27	Unknown Deciduous Tree	BOUNDARY subject site & 1536 Geary Ave	16	3	5	fair	good	40cm south of base of ex. fence, scraggly form	no impact to CRZ	preserve	tree protection fencing
45	Royal Red Norway Maple	subject site	12	2.5	5	good	good	On slope	no impact to CRZ	preserve	tree protection fencing
	Norway Maple	·	46	5	5	good	good	Full form, bottom of slope	9% of CRZ to be removed from W side of tree		preconstruction root pruning and tree protection fencing
		1543 Stoneybrook Cres	31	4.5	5	fair	good	Scraggly lower branches	no impact to CRZ		tree protection fencing
50		1543 Stoneybrook Cres	~45, 45	6	5	good	good	Multistem 2, limited visual access, llimbed up 6m	8% of CRZ to be removed from NW corner or tree		tree protection fencing & root pruning
		BOUNDARY subject site & 1531 Stoneybrook Cres	30, 26	3	5	fair	fair	Multistem 2, limbed up 6m, codominant leaders with included bark	8% of CRZ to be removed from NW corner or tree		tree protection fencing & root pruning
52	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	30	3	5	good	good	Limbed up 5m	<1% of CRZ to be removed from N side of tree	preserve	tree protection fencing & root pruning
53	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	37	3	4	good	good	Limbed up 6m, sparse crown	4% of CRZ to be removed from N side of tree		tree protection fencing & root pruning
54	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	34	3	5	good	good	Limbed up 6m	1% of CRZ to be removed from N side of tree	preserve	tree protection fencing & root pruning
55	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	45	4	5	good	good	Limbed up 6m, droopy branches	9% of CRZ to be removed form N side of tree	preserve	tree protection fencing & root pruning
	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	32	3	5	good	good	Limbed up 6m, a bit thin	<1% of CRZ to be removed from N side of tree	preserve	tree protection fencing & root pruning
		BOUNDARY subject site & 1531 Stoneybrook Cres	30	4	5	good	good	Limbed up 6m	<1% of CRZ to be removed from N side of tree		tree protection fencing & root pruning
	,	BOUNDARY subject site & 1531 Stoneybrook Cres	39	3	5	good	good	Limbed up 6m, a bit thin	6% of CRZ to be removed from N side of tree		tree protection fencing & root pruning
	·	BOUNDARY subject site & 1531 Stoneybrook Cres	32	4	5	good	good	Limbed up 6m	1% of CRZ to be removed from N side of tree		tree protection fencing & root pruning
60	White Spruce	BOUNDARY subject site & 1531 Stoneybrook Cres	18	2	2	good	good	Very thin crown	no impact to CRZ	preserve	tree protection fencing
	TION UNITS										
	Black Cedar Hedge	subject site	<10	0.5	5	good	good	very well maintained	very minor root damage expected		tree protection fencing
	Black Cedar Hedge	1543 Stoneybrook Cres	10 -25	1	4	fair	good	shaded out	no impact expected		tree protection fencing
Veg 7	Black Cedar Hedge	1537 Stoneybrook Cres	~20	1	4	fair	good	8m long hedge, loose and leggy	very minor root damage expected	preserve	tree protection fencing



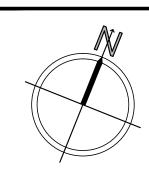


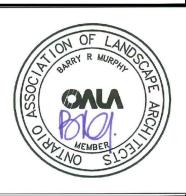
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Barry R. Mu	urphy, O.A.L.A. C.S.L.A. DATE	
2 <i>0</i> 22. <i>0</i> 1.25	ISSUED FOR ZBA	5.
2022.01.17	ISSUED FOR REVIEW	4.
2021.08.13	ISSUED FOR REVIEW	3.
2021.05.11	ISSUED FOR COORDINATION	2.
2021.04.29	ISSUED FOR REVIEW	1.
DATE	DESCRIPTION DESCRIPTION	No.

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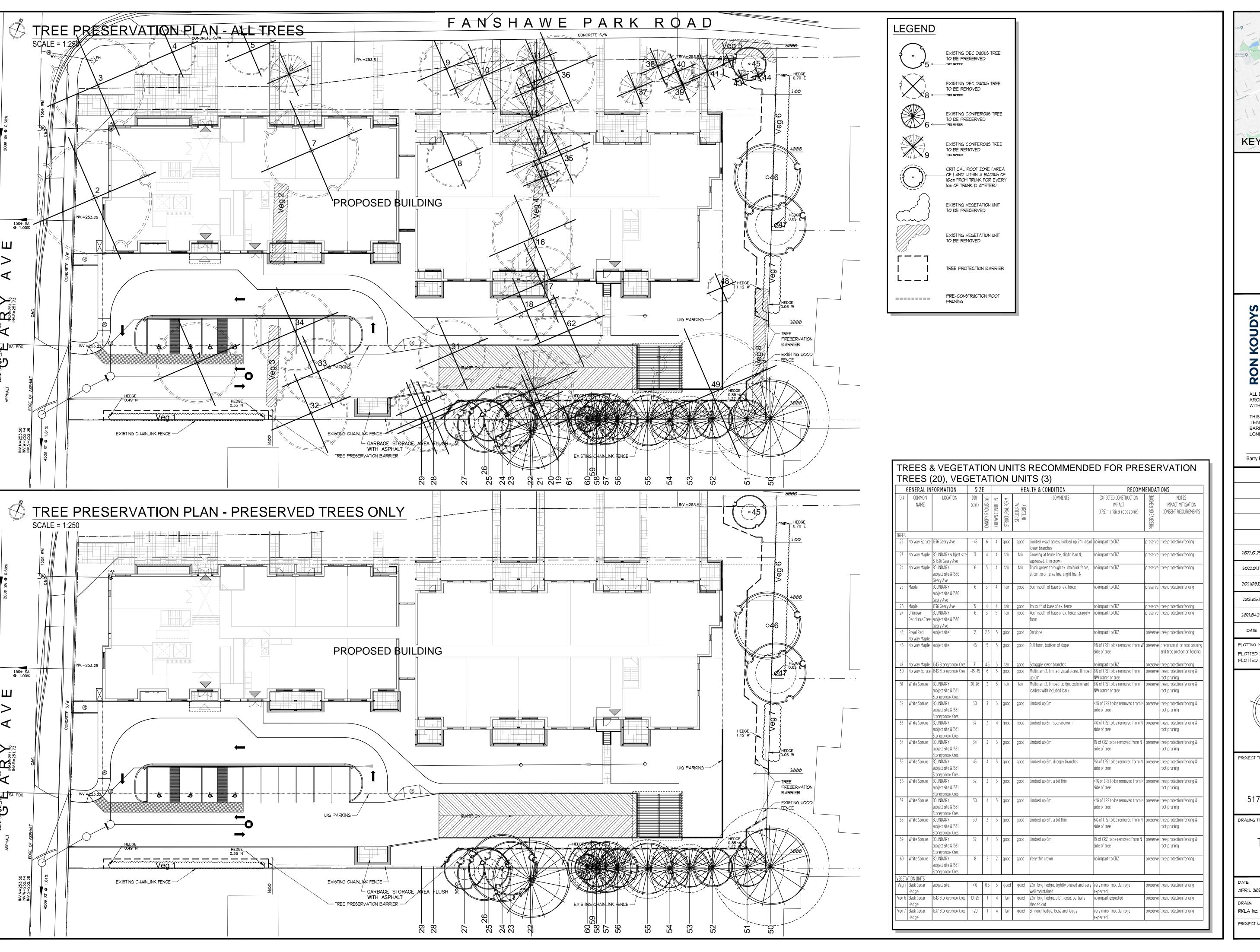
FANSHAWE PARK MIDRISE

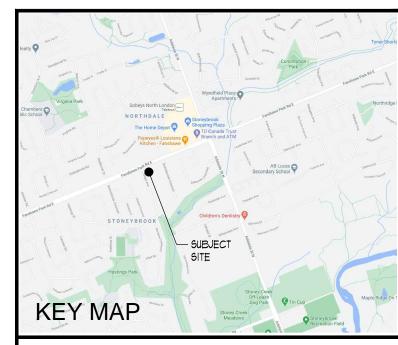
517-525 FANSHAWE PARK ROAD EAST LONDON, ONTARIO

DRAWING TITLE:

TREE PRESERVATION PLAN

DATE: APRIL 2021	SCALE: AS NOTED	DRAWING No.
DRAWN: RKLA Inc.	CHECKED BY: B.R.M.	T-1
PROJECT No. 21-11:	5Li ZBA	







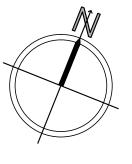


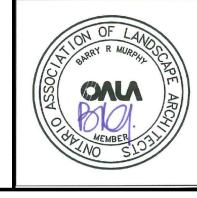
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DATE	DESCRIPTION	No.

PLOTTING INFORMATION: PLOTTED DATE = 2022.01.25 PLOTTED SCALE = 1:1





PROJECT TITLE:

FANSHAWE PARK MIDRISE

517-525 FANSHAWE PARK ROAD EAST LONDON, ONTARIO

DRAWING TITLE:

TREE PRESERVATION PLAN DETAILS

DATE: APRIL 2021	9CALE: AS NOTED	DRAWING No.					
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PROJECT No. 21-11	PROJECT No. 21-115Li ZBA						