



Arborist Report and Tree Preservation Plan

For:
University of Western Ontario
c/o OMC Landscape Architects

Regarding:
New Student Residence Proposal
1999 University Drive, London ON.

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12 October 2023

Arborist Report and Tree Preservation Plan

University of Western Ontario New Student Residence Proposal
1999 University Drive, London ON.

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SUMMARY

The subject site – the eastern portion of 1151, and 1163 Richmond Street – is currently maintained but vacant. The site **is not** located within or immediately adjacent to a Tree Protection Area as described by City of London Tree Protection By-Law Schedule B. As such, Public Trees as well as Private Trees considered as “Distinctive Trees” (Trees 50cm DBH and larger on private land) as described in the By-Law, require Permits to Injure or Destroy. Further, any Distinctive Tree to be destroyed will require Replacement Trees as outlined in Schedule A of the By-Law.

The subject site is proposed for the construction of a Student Residence Building and associated hardscape as well as a volleyball area. Additionally, the parking area in the rear of 1163 Richmond is to be expanded and reconfigured.

There are 103 Trees within the scope of this tree inventory (which includes trees 10cm DBH and greater), of these 13 are Distinctive Trees, and 14 are located on public land (municipal road allowance of Richmond St). Of these Public and Distinctive Trees:

Distinctive Trees (Private Trees 50cm DBH and Greater)

- 6 Distinctive Trees will require removal
- 6 Distinctive Trees will sustain Injury,
- 1 Distinctive Tree is fully protected and located outside of the construction proposed.

Public Trees (Located on Road Allowance Area)

- 1 Public Tree is recommended for removal due to construction impact
- 1 Public Tree is recommended for removal due to condition
- 12 Public Trees are fully protected and located outside of the construction envelope

Further sections of this report provide details regarding these trees. Additionally, trees of 5cm dbh and greater are included in the inventory and within the reporting for review within the proposal. Many of these trees are proposed for removal or impact or recommended to be removed due to condition. Although these trees are of small size and not considered “Distinctive Trees” they may be subject to review and approval by the City of London.

INTRODUCTION

Assignment

The arborist was retained to prepare an Arborist Report and Tree Preservation Plan for the University of Western Ontario New Student Residence Proposal located at 1999 University Drive, London ON. for submission to the City of London as required by the City of London tree protection by-laws.

The report is to include an inventory and location (tree survey) including rating and comments (where required) regarding the current Health and Soundness of each subject tree. Additionally, plan drawings showing proposed construction and tree preservation fencing, any tpz area encroachments, and proposed tree removals, at minimum, are also included.

Limits of the Assignment

Unless specifically noted, all trees are rated by Limited Visual Assessment (Ground-based), and no exploratory excavation was, or is to be, conducted to verify the presence or absence of tree roots in a given area.

Purpose and Use of This Report

This report is intended to outline all encroachments, tree injuries, and tree removals resulting from the proposed construction (or otherwise proposed by the client) as outlined in the subsequent sections for review and approval by the City of London. It should be noted that the approval, waiver, exemption, or denial of Approvals and/or any necessary Permits rests strictly with the City of London.

Methodology

For details regarding the onsite protocols and methods used in the creation of this report, please see Appendix II - Methodology

SITE

Current Site Characteristics

The portion of the site designated as Eastern half of 1151 Richmond Street is currently vacant with what appears to have been some plan of ornamental planting, a small walkway and volleyball court. The portion of the site designated as 1163 Richmond Street is currently in use as a University of Western Ontario Child and Youth Development Clinic.

Proposed Construction

Demolition of current structures at 1163 Richmond Street and construction of a new Student Residence in this area and in the vacant area east of Elgin Hall (1151 Richmond Street). Proposed construction includes multiple storey Residence Building with walkways, enlargement of the parking area in the rear of 1163 Richmond, and construction of a new Volleyball Court.

Construction Phases and Anticipated Injury to Encroachment Ratios

DWELLING – STUDENT RESIDENCE

Initial Assumptions Regarding Proposed Work

Encroachment Type: Full Foundation

Maximum Excavation Depth (m): 3

Maximum Build Height or Clearance (m): 2

Assumed Ratio of Injury to Encroachment

(Injury = Ratio x Encroachment)

Root Zone: 1 **Canopy:** 1

DRIVEWAY AND PARKING – DRIVEWAY AND PARKING - TOWER LANE

Initial Assumptions Regarding Proposed Work

Encroachment Type: Asphalt Driveway

Maximum Excavation Depth (m): 0

Maximum Build Height or Clearance (m): 0

Assumed Ratio of Injury to Encroachment

(Injury = Ratio x Encroachment)

Root Zone: 0.75 **Canopy:** 0

WALKWAY - PRINCIPAL ENTRANCE – WALKWAY - PRINCIPAL ENTRANCE

Initial Assumptions Regarding Proposed Work

Encroachment Type: Sidewalk

Maximum Excavation Depth (m): 0

Maximum Build Height or Clearance (m): 3

Assumed Ratio of Injury to Encroachment

(Injury = Ratio x Encroachment)

Root Zone: 0.5 **Canopy:** 0.5

WALKWAY - PRINCIPAL ENTRANCE 1 – REAR COURTYARD

Initial Assumptions Regarding Proposed Work

Encroachment Type: Patio (firm substrate or pour concrete)

Maximum Excavation Depth (m): 2

Maximum Build Height or Clearance (m): 0

Assumed Ratio of Injury to Encroachment

(Injury = Ratio x Encroachment)

Root Zone: 1 Canopy: 0

VOLLEYBALL COURT – VOLLEYBALL COURT

Initial Assumptions Regarding Proposed Work

Encroachment Type: General Zone of Construction

Maximum Excavation Depth (m): 0

Maximum Build Height or Clearance (m): 9

Assumed Ratio of Injury to Encroachment

(Injury = Ratio x Encroachment)

Root Zone: 0.5 Canopy: 1

LAYBY EXTENSION – LAYBY EXTENSION

Initial Assumptions Regarding Proposed Work

Encroachment Type: General Zone of Construction

Maximum Excavation Depth (m): 0

Maximum Build Height or Clearance (m): 9

Assumed Ratio of Injury to Encroachment

(Injury = Ratio x Encroachment)

Root Zone: 0.75 Canopy: 1

WALKWAY - PARKING AREA – WALKWAY - PARKING AREA

Initial Assumptions Regarding Proposed Work

Encroachment Type: Sidewalk

Maximum Excavation Depth (m): 0

Maximum Build Height or Clearance (m): 3

Assumed Ratio of Injury to Encroachment

(Injury = Ratio x Encroachment)

Root Zone: 0.5 Canopy: 0.5

WALKWAY - RICHMOND_UNIVERSITY – WALKWAY - RICHMOND_UNIVERSITY

Initial Assumptions Regarding Proposed Work

Encroachment Type: Sidewalk

Maximum Excavation Depth (m): 0

Maximum Build Height or Clearance (m): 3

Assumed Ratio of Injury to Encroachment

(Injury = Ratio x Encroachment)

Root Zone: 0.5 Canopy: 0.5

TREE INVENTORY SUMMARY

Tree Population

Overview

There were One Hundred Three (103) trees inventoried within the scope of this survey. Of these, there are Thirteen (13) “Distinctive Trees”, and Fourteen (14) Municipal Tree as defined and regulated under the City of London Consolidated Tree Protection By-Law. Trees regulated under this bylaw and considered “Distinctive Trees” are those 50 cm or larger in DBH located on private land. Additionally, trees of any size, located on Municipal/Public land.

The following outlines the distribution of all trees within the inventory presenting their deemed ownership (location), and further presents a species distribution for the site.

City of London Forestry

There are a total of One Hundred Three (103) trees having a DBH of 5cm or greater located on, or adjacent to the client site within the area of the City of London Forestry, and within the scope of this project.

Of these:

- Non-regulated private trees 76
- Distinctive Trees (DBH 50cm or greater) 13
- Municipal Trees 14

Species Distribution

Species distribution, average DBH, and count are as follows:

Species	Count	Average DBH (cm)
White Fir <i>Abies concolor</i>	1	22.0
Freeman maple <i>Acer freemanii</i> [rubrum × <i>saccharinum</i>]	2	69.0
Norway maple <i>Acer platanoides</i>	1	41.0
sugar maple, rock maple, hard maple <i>Acer saccharum</i>	1	25.0
Horsechestnut Species <i>Aesculus spp</i>	8	37.5
common hackberry <i>Celtis occidentalis</i>	1	24.0
maidenhair tree <i>Ginkgo biloba</i>	3	19.0
thornless honey locust <i>Gleditsia triacanthos var inermis</i>	2	37.5
black walnut <i>Juglans nigra</i>	5	43.0
tulip tree <i>Liriodendron tulipifera</i>	2	39.0
Magnolia Species <i>Magnolia spp</i>	4	25.8

Species	Count	Average DBH (cm)
blue spruce <i>Picea pungens</i>	8	27.3
Cherry Species <i>Prunus spp</i>	1	27.0
Douglas Fir Species <i>Pseudotsuga spp</i>	42	30.0
white oak <i>Quercus alba</i>	2	17.5
northern red oak <i>Quercus rubra</i>	10	41.9
Japanese tree lilac <i>Syringa reticulata</i>	4	24.0
common lilac <i>Syringa vulgaris</i>	1	28.0
littleleaf linden <i>Tilia cordata</i>	5	54.6

Trees Receiving TPZ Encroachment or Proposed for Removal

This section lists all trees which will receive encroachment/injury or require removal as a result of the proposed construction activities, and/or their current condition. The City of London must approve proposed construction activities (including access) within the protected root zone area of a tree, or the proposed removal of a tree, which is:

5cm or larger in DBH located on private land, or

A tree of any size, which is located on Municipal/Public land.

Additionally, a permit to injure or a permit to remove may be required for trees proposed for injury or removal as per the municipal tree bylaws relevant to the area/site.

Trees located on Municipal land may be removed only with the consent of City of London, and may be subject to additional fees at the discretion of, the Municipality.

Additionally, any tree requiring a Permit to Remove may be subject to a Tree Replacement Requirement specifying the number of replacement trees to be planted on the site, or in some cases, ‘cash-in-lieu’ where such planting would be infeasible.

Trees Proposed to Receive Encroachment on the Protected Root Zone Area

Tree # Species Ownership	DBH (cm) Canopy Dia. (m)	Comments Regarding Injury
114 Littleleaf Linden (<i>Tilia cordata</i>) Client Tree	60 cm 12.0 M	Minor encroachment on mTPZ - proposed student residence.
115 Littleleaf Linden (<i>Tilia cordata</i>) Client Tree	72 cm 12.0 M	Minor encroachment on mTPZ - proposed Volleyball Court
123 Douglas Fir Species (<i>Pseudotsuga spp</i>) Client Tree	36 cm 6.0 M	Minimal encroachment to mtpz extent from walkway installation. Small Size (DBH <50cm)

Tree # Species Ownership	DBH (cm) Canopy Dia. (m)	Comments Regarding Injury
135 Black Walnut (<i>Juglans nigra</i>) Client Tree	100 cm 22.0 M	Minor encroachment on mTPZ at Student Residence rear courtyard.
193 Northern Red Oak (<i>Quercus rubra</i>) Client Tree	55 cm 10.0 M	Encroachment on mTPZ from layby area modifications.
194 Northern Red Oak (<i>Quercus rubra</i>) Client Tree	58 cm 12.0 M	Encroachment on mTPZ from layby area modifications.
195 Northern Red Oak (<i>Quercus rubra</i>) Client Tree	51 cm 12.0 M	Encroachment on mTPZ from layby area modifications.
196 Northern Red Oak (<i>Quercus rubra</i>) Client Tree	36 cm 8.0 M	Encroachment on mTPZ from layby area modifications. Small Size (DBH <50cm)
197 Northern Red Oak (<i>Quercus rubra</i>) Client Tree	36 cm 10.0 M	Encroachment on mTPZ from layby area modifications. Small Size (DBH <50cm)
198 Northern Red Oak (<i>Quercus rubra</i>) Client Tree	40 cm 10.0 M	Encroachment on mTPZ from layby area modifications. Small Size (DBH <50cm)

Please see subsequent section of this report for a detailed analysis of all of the above proposed injuries, as well as recommendations for the minimization of damages in these areas.

Trees Proposed for Removal for Construction

There are 66 proposed tree removals of all sizes (5cm DBH and greater), within the scope of this project. Of these, 2 are Public Trees, and 6 are “Distinctive Trees”, regulated under the City of London Tree Bylaw(s).

Private Tree Removals (“Distinctive Trees”) Requiring Permit and Compensation Planting

Tree # Species Ownership	DBH (cm) Canopy Dia. (m)	Comments Regarding Removal	Compensation Planting (Trees)
127 Littleleaf Linden (<i>Tilia cordata</i>) Client Tree	67 12.0	Within zone of construction - Student Residence Rear Walkway Distinctive Tree (DBH 50cm or greater)	3
149 Horsechestnut Species (<i>Aesculus spp</i>) Client Tree	56 10.0	Within construction envelope - proposed student residence Distinctive Tree (50cm DBH or greater)	2
150 Horsechestnut Species (<i>Aesculus spp</i>) Client Tree	58 10.0	Within construction envelope - proposed student residence Distinctive Tree (50cm DBH or greater)	2
155 Black Walnut (<i>Juglans nigra</i>) Client Tree	68 20.0	Impact of parking area construction (incl walkway) will present severe root impact with plan as proposed. Not expected to tolerate impact proposed. Distinctive Tree (50cm DBH or greater)	3

Tree # Species Ownership	DBH (cm) Canopy Dia. (m)	Comments Regarding Removal	Compensation Planting (Trees)
183 Freeman Maple { <i>Acer freemanii</i> [<i>rubrum</i> × <i>saccharinum</i>]} Client Tree	70 14.0	Within construction envelope - proposed student residence Distinctive Tree (50cm DBH or greater)	3
185 Freeman Maple { <i>Acer freemanii</i> [<i>rubrum</i> × <i>saccharinum</i>]} Client Tree	68 16.0	Within construction envelope - proposed student residence Distinctive Tree (50cm DBH or greater)	3
Total Compensation Plantings Required (Trees) Note: This is to be considered as a guideline only. Actual compensation requirements will be determined by the City of London.			16

Public Tree Removals Recommended due to Construction or Condition

Tree # Species Ownership	DBH (cm) Canopy Dia. (m)	Comments Regarding Removal
176 Douglas Fir Species { <i>Pseudotsuga</i> spp} Municipal tree on Municipal Road Allowance	23 4.0	Remove for condition.
177 Douglas Fir Species { <i>Pseudotsuga</i> spp} Municipal tree on Municipal Road Allowance	35 8.0	Adjacent construction of Richmond/University Walkway connection to bus stop area Removal recommended.

Note Re Compensation of Public Tree Removals: Public Trees proposed for removal are to be compensated for as determined by the City of London. Public Tree Compensation rates/ratios may differ from that of Distinctive Tree Compensation Rates. Compensation rate for these trees to be provided on review by the City of London
Note: This is to be considered as a guideline only. Actual compensation requirements will be determined by the City of London.

Small Size Private Tree Removals Proposed (DBH <50cm)

Tree # Species Ownership	DBH (cm) Canopy Dia. (m)	Comments Regarding Removal
001 Common Lilac { <i>Syringa vulgaris</i> } Client Tree	28 8.0	Remove due to condition. Small Size (DBH <50cm)
002 Cherry Species { <i>Prunus</i> spp} Client Tree	27 10.0	Within zone of construction - Student Residence Small Size (DBH <50cm)
003 Horsechestnut Species { <i>Aesculus</i> spp} Client Tree	18 4.0	To be removed due to condition (dead tree) Small Size (DBH <50cm)
101 Blue Spruce { <i>Picea pungens</i> } Client Tree	35 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
102 Blue Spruce { <i>Picea pungens</i> } Client Tree	30 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
103 Blue Spruce { <i>Picea pungens</i> } Client Tree	26 4.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)

Tree # Species Ownership	DBH (cm) Canopy Dia. (m)	Comments Regarding Removal
104 Blue Spruce {Picea pungens} Client Tree	34 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
105 Blue Spruce {Picea pungens} Client Tree	30 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
106 Maidenhair Tree {Ginkgo biloba} Client Tree	20 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
107 Maidenhair Tree {Ginkgo biloba} Client Tree	20 6.0	Encroachment on MTPZ area for excavations for student residences. Removal recommended Small Size (DBH <50cm)
108 Maidenhair Tree {Ginkgo biloba} Client Tree	17 6.0	Severe encroachment by proposed student residence. Removal recommended. Small Size (DBH <50cm)
109 Sugar Maple {Acer saccharum} Client Tree	25 8.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
110 Blue Spruce {Picea pungens} Client Tree	25 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
111 White Fir {Abies concolor} Client Tree	22 4.0	critical encroachment on mTPZ - proposed student residence. To be removed Small Size (DBH <50cm)
112 Blue Spruce {Picea pungens} Client Tree	20 4.0	critical encroachment on mTPZ - proposed student residence. To be removed Small Size (DBH <50cm)
113 Littleleaf Linden {Tilia cordata} Client Tree	47 10.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
116 Blue Spruce {Picea pungens} Client Tree	18 4.0	Within construction envelope - proposed student residence. Also - tree condition is very poor. Small Size (DBH <50cm)
117 White Oak {Quercus alba} Client Tree	14 4.0	No conflict with construction, but removal is recommended due to poor condition. Small Size (DBH <50cm)
120 Horsechestnut Species {Aesculus spp} Client Tree	31 8.0	Within zone of construction - Volleyball Court Small Size (DBH <50cm)
121 Thornless Honey Locust {Gleditsia triacanthos var inermis} Client Tree	38 14.0	Within zone of construction - Volleyball Court Small Size (DBH <50cm)
122 Thornless Honey Locust {Gleditsia triacanthos var inermis} Client Tree	37 10.0	Critically impacted by construction of proposed residences and volleyball area. To be removed Small Size (DBH <50cm)

Tree # Species Ownership	DBH (cm) Canopy Dia. (m)	Comments Regarding Removal
124 Douglas Fir Species {Pseudotsuga spp} Client Tree	45 8.0	Recommended for removal due to structural condition. Small Size (DBH <50cm)
126 Douglas Fir Species {Pseudotsuga spp} Client Tree	32 6.0	Removal recommended due to poor condition. Small Size (DBH <50cm)
128 Norway Maple {Acer platanoides} Client Tree	41 12.0	Within zone of construction - Student Residence rear walkway. Small Size (DBH <50cm)
129 Black Walnut {Juglans nigra} Client Tree	21 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
132 Tuliptree {Liriodendron tulipifera} Client Tree	33 8.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
133 Littleleaf Linden {Tilia cordata} Client Tree	27 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
134 Black Walnut {Juglans nigra} Client Tree	16 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
136 Douglas Fir Species {Pseudotsuga spp} Client Tree	25 4.0	Minor encroachment due to Student Residence. This tree is part of a row which is to be removed. Removal recommended. Defer to Landscape Architect re injure/remove. Small Size (DBH <50cm)
137 Douglas Fir Species {Pseudotsuga spp} Client Tree	23 4.0	Removal recommended due to poor form and condition from topping. Small Size (DBH <50cm)
138 Douglas Fir Species {Pseudotsuga spp} Client Tree	33 6.0	Removal recommended due to condition. Small Size (DBH <50cm)
139 Douglas Fir Species {Pseudotsuga spp} Client Tree	29 4.0	Removal recommended due to condition. Small Size (DBH <50cm)
140 Douglas Fir Species {Pseudotsuga spp} Client Tree	20 4.0	Removal recommended due to poor form. Part of row to be removed for condition or construction. Removal recommended. Small Size (DBH <50cm)
141 Douglas Fir Species {Pseudotsuga spp} Client Tree	34 8.0	Part of a row of trees which are to be removed due to condition or construction conflict. Removal recommended. Small Size (DBH <50cm)
142 Douglas Fir Species {Pseudotsuga spp} Client Tree	47 8.0	Part of a row of trees which are to be removed due to condition or construction conflict. Removal recommended. Small Size (DBH <50cm)
143 Douglas Fir Species {Pseudotsuga spp} Client Tree	40 6.0	Within zone of construction - Tower Lane Parking Area Walkway Small Size (DBH <50cm)

Tree # Species Ownership	DBH (cm) Canopy Dia. (m)	Comments Regarding Removal
144 Douglas Fir Species {Pseudotsuga spp} Client Tree	42 8.0	Within zone of construction - Tower Lane Parking Area Walkway. Small Size (DBH <50cm)
145 Douglas Fir Species {Pseudotsuga spp} Client Tree	20 4.0	Within zone construction - Tower Lane Parking Area Walkway Small Size (DBH <50cm)
146 Douglas Fir Species {Pseudotsuga spp} Client Tree	28 6.0	Within zone of construction - Tower Lane Parking Area Small Size (DBH <50cm)
147 Douglas Fir Species {Pseudotsuga spp} Client Tree	41 6.0	Within zone of construction - Tower Lane Parking Area. Also almost dead. Recommended for removal due to condition regardless of construction Small Size (DBH <50cm)
148 Tuliptree {Liriodendron tulipifera} Client Tree	45 14.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
151 Horsechestnut Species {Aesculus spp} Client Tree	41 8.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
152 Horsechestnut Species {Aesculus spp} Client Tree	22 10.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
153 Northern Red Oak {Quercus rubra} Client Tree	18 8.0	Within construction envelope - Student Residence Small Size (DBH <50cm)
154 Common Hackberry {Celtis occidentalis} Client Tree	24 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
156 Douglas Fir Species {Pseudotsuga spp} Client Tree	26 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
157 Douglas Fir Species {Pseudotsuga spp} Client Tree	18 2.0	DEAD TREE Within construction envelope - proposed student residence. Small Size (DBH <50cm)
158 Douglas Fir Species {Pseudotsuga spp} Client Tree	32 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
159 Douglas Fir Species {Pseudotsuga spp} Client Tree	31 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
160 Douglas Fir Species {Pseudotsuga spp} Client Tree	26 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
161 Douglas Fir Species {Pseudotsuga spp} Client Tree	16 4.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
162 Douglas Fir Species {Pseudotsuga spp} Client Tree	29 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)

Tree # Species Ownership	DBH (cm) Canopy Dia. (m)	Comments Regarding Removal
163 Douglas Fir Species {Pseudotsuga spp} Client Tree	32 8.0	Within construction envelope - proposed student residence
178 Douglas Fir Species {Pseudotsuga spp} Client Tree	38 8.0	Remove due to condition. Small Size (DBH <50cm)
180 Japanese Tree Lilac {Syringa reticulata) Client Tree	27 6.0	Encroachment on mTPZ due to Proposed Student Residence and walkway. Small Size (DBH <50cm)
181 Magnolia Species {Magnolia spp} Client Tree	28 8.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
182 Magnolia Species {Magnolia spp} Client Tree	24 8.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
184 White Oak {Quercus alba) Client Tree	21 6.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
186 Magnolia Species {Magnolia spp} Client Tree	25 8.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
187 Magnolia Species {Magnolia spp} Client Tree	26 8.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
188 Japanese Tree Lilac {Syringa reticulata) Client Tree	22 4.0	Within construction envelope - proposed student residence Small Size (DBH <50cm)
189 Japanese Tree Lilac {Syringa reticulata) Client Tree	18 4.0	Adjacent walkway construction presents severe encroachment on mtpz. Removal recommended. Small Size (DBH <50cm)
190 Douglas Fir Species {Pseudotsuga spp} Client Tree	32 4.0	Remove due to condition Small Size (DBH <50cm)

Regarding Compensation/Replacement Plantings

As per the City of London requirements for replacement of Distinctive Trees (50cm DBH or greater) to be removed, the following presents the anticipated requirement for replacement trees to compensate for the tree removals proposed within the application:

Replacement Planting Required:

16 trees (minimum) – see below.

In addition to the above, any compensation to be provided for the 2 Public Trees proposed for removal as determined by the City of London on review

From the City of London Consolidated Tree Protection By-law

9.2 Every Permit that is issued is subject to the following conditions of obtaining and continuing to hold a Permit, all of which shall be performed and observed by the Permit Holder and Landowner:

(a) *the Permit Holder shall ensure that the number of living Replacement Trees as determined by the City Engineer, and the species, or choice of species, size and location of Replacement Trees as determined by the City Engineer, are planted on the same Site by the date specified on the Permit;*

(b) *where there is insufficient space on the same Site to plant all the Replacement Trees, the Permit Holder shall plant as many Replacement Trees as the City Engineer determines the Site will allow and the Permit Holder shall forthwith pay the fee as determined by the City Engineer in Schedule A with respect to the number of Replacement Trees that could not be planted due to insufficient space (Fee for Off-Site Tree Planting)*

Replacement Tree Plantings are to be planted within a reasonable timeline (as specified by the municipality) upon completion of tree removal. For sites with development occurring, it is the recommendation of this arborist that the planting occur during the first planting season post construction completion. For example, if construction finishes in the winter, planting of replacement trees is to be conducted in the Spring season immediately following construction conclusion. If construction finishes in the spring/summer, planting of replacement trees is to be conducted in the Fall of that same year.

It should be noted that replacement trees that may be required are to be of Native species, or other species/varieties, deemed as acceptable by the City of London. Please refer to the City of London website for the current lists of suitable replacement trees. Please note that all replacement trees are subject to approval by the City of London.

ANALYSIS OF PROPOSED ENCROACHMENTS

The following sections outline the anticipated tree encroachments and injuries for each phase of the proposed construction. Please refer to the subsequent sections: Minimization of Damage Recommendations for recommendations for each phase of construction affecting trees, including Pre-Construction and Post-Construction recommendations.

Student Residence Area

Impacted Trees: #114 - Little Leaf Linden

This is the primary construction phase on the site and will necessitate the removal of 6 Distinctive Trees and 35 non-regulated trees. In addition to these removals, one (1) Distinctive Tree will sustain minor encroachment on the mtpz area. Since the encroachment will impact less than 5% of the protected root zone of these trees, no long-term impairment to health is anticipated assuming that care is taken through the area as described in the subsequent sections of this report regarding minimization of damage during construction activities.

Care should be taken through this area to ensure a Certified Arborist (or other approved tree worker) is present within the area during all work within the mtpz extent, and that all rooting exposed during excavations is exposed carefully so as to

prevent root shatter and cut cleanly. Additionally, the recommendations as presented in the subsequent sections are to be adhered to in this area. It is expected that this tree will tolerate the proposed impact with only minimal detriment to its overall health and vigor and no impact to its stability. The following presents the calculated encroachment and anticipated impact proposed to the affected tree(s) from the above construction:

Tree #	Encroachment (area/area)	Anticipated Injury
#114: littleleaf linden { <i>Tilia cordata</i> } 60cm DBH	3.85%	3.85%

Rear Courtyard

Impacted Trees: #135 - Black Walnut

This walkway/patio area at the rear of the Residence building will necessitate the removal of one (1) Distinctive Tree and two (2) non-regulated trees. Additionally, there will be a slight encroachment on the protected root zone of 1 large Distinctive Tree as outlined below.

While this encroachment is minor and represents a minimal injury to this tree health and vitality only, care should be taken through the area as recommended in the subsequent sections of this report to ensure that any impact to this tree is minimized/mitigated as possible. Further, we have been advised that the patio area may be redesigned to further reduce injury.

The following presents the calculated encroachment and anticipated impact proposed to the affected tree(s) from the above construction:

Tree #	Encroachment (area/area)	Anticipated Injury
#135: black walnut {Juglans nigra} 100cm DBH	2.58%	2.58%

Volleyball Court

Impacted Trees: #115 - Littleleaf Linden

Excavation in this area should be relatively shallow (15-20cm), but overhead clearance of not less than 3m should be allowed. There are two (2) non-regulated trees which will be removed to allow for this construction. Additionally, one (1) Distinctive Tree will incur a minor encroachment at the extent of the mtpz area. This should not result in any perceptible change to the health, soundness, or form of the tree.

The following presents the calculated encroachment and anticipated impact proposed to the affected tree(s) from the above construction:

Tree #	Encroachment (area/area)	Anticipated Injury
#115: littleleaf linden {Tilia cordata} 72cm DBH	1.95%	0.98%

Layby Extension

Impacted Trees: #193 through #198 - Northern Red Oak

This layby extension will extend and modify the existing layby area on University Drive and will present encroachment on the mtpz area of 3 Distinctive Trees as well as on 3 non-regulated trees located in the boulevard area. In the area of the Distinctive Trees, the work will be a removal and alteration of the curbing the layby area. In the area of the un-regulated trees (#197 and #198) lengthening/addition of the layby area is to occur in areas of previously undisturbed land. Although no trees require removal, it is expected that this work will present a minimal to moderate impact to the trees affected, with Distinctive Trees expected to receive a minimal impact (<10%) with care taken during the layby modifications occurring in the area, and with trees #197 and #198 receiving a moderate impact from the new layby area extension.

For all of these trees, it is recommended that care be taken through the areas as presented in the subsequent sections of this report in order to minimize impact that will occur. In the area of the Distinctive trees, all work is to be conducted under the direct supervision of a Certified Arborist and any curb removal and replacement is recommended to be done carefully by cutting/breaking up the curb in sections and removing with hand equipment only where within an mtpz area. Additionally, the new curb in the area is recommended to be placed in the same area as the existing curb extent.

In the area of the non-regulated trees, care should be taken during excavations for the layby area extension to expose rooting for proper severance and treatment as may be required. Additionally, care is recommended for these trees as presented in the subsequent sections.

It should be noted that the impact to tree #197 approaches major levels and this tree may present dieback of branches from the root impact required for construction.

The following presents the calculated encroachment and anticipated impact proposed to the affected tree(s) from the above construction:

Tree #	Encroachment (area/area)	Anticipated Injury
#193: northern red oak { <i>Quercus rubra</i>) 55cm DBH	11.57%	8.67%
#194: northern red oak { <i>Quercus rubra</i>) 58cm DBH	11.26%	8.44%
#195: northern red oak { <i>Quercus rubra</i>) 51cm DBH	11.13%	8.35%
#196: northern red oak { <i>Quercus rubra</i>) 36cm DBH	14.55%	10.91%
#197: northern red oak { <i>Quercus rubra</i>) 36cm DBH	26.48%	19.86%
#198: northern red oak { <i>Quercus rubra</i>) 40cm DBH	12.88%	9.66%

ARBORIST MINIMIZATION OF DAMAGE RECOMMENDATIONS

The following presents recommendations for ensuring tree protection through construction. Further, this section presents some recommendations for prior to construction commencement, as well as recommendations for post construction.

Pre-Construction Phase

Prior to the commencement of construction, tree preservation hoarding, as well as arboricultural work with regards to any removals and any required pruning for construction, should be implemented as follows:

1. All Tree Preservation Hoarding is to be erected and placed as per the location presented on the attached Tree Preservation Plan Drawing: TPR 101.

Note: Tree Protection Hoarding must be installed upon approval of the tree preservation plan, and prior to release of the permits regarding tree injury. Upon approval of the Arborist Report and Tree Preservation Plan, and conditions of permit release being sent to the client, the hoarding is to be erected.

2. If it is determined by engineering that silt fencing be required for the site to prevent silt movement, it is the recommendation of the arborist that the silt fencing be placed following and on the construction side of tree protection hoarding.
3. If silt fencing is deemed required within hoarded areas of tree protection, it is not to be dug in in this area, but instead have a minimal amount of clear stone placed at the base. This will prevent impact to tree roots in area from the digging in of the silt fence base, while still allowing for the prevention of silt movement beyond the silt fence.
4. All tree protection hoarding (vertical and/or horizontal), and silt fencing (if required), is to be inspected for correct construction and placement as per the approved Tree Preservation Plan Drawing and Site Plan by a Certified Arborist, or other approved consultant, or by a member City of London Staff. If inspected by other than the City of London staff, the consultant will provide written certification to the municipality that all protective hoarding and sediment control measures (if/where required) have been satisfactorily installed
5. Any pruning of trees that is to occur, as approved and permitted by the City of London for significant size trees, should occur during this phase. No pruning of significant size trees may occur until such time as the pruning has been approved by Forestry and tree injury permits have been released and are present on site.
6. Any removal of trees of significant size, as approved and permitted by the City of London should occur during this phase. No removals of significant size trees may occur until such time as tree removal permits have been released and are present on site.

Construction Phase

The following is recommended to be adhered to during the construction phase of the project, in order to minimize the damages to trees where an encroachment on a trees TPZ is anticipated.

Open Excavation Area - Residence Area Excavation

Proposed Student Residence

mTPZ Encroachment Area of Trees: #114 *Tilia cordata*

1. A Certified Arborist is to be present to assess and treat any roots discovered during the excavation activities occurring within the TPZ areas of trees.
2. The Zones of Construction (as shown in the attached arborist drawing TPR 101) in this area must be strictly adhered to. The excavation allowance allotted for the constructions on the side of tree protection zone confliction is as follows:
 - 1.2m from the dwelling foundation extent on the side of tree protection zone confliction has been allotted for overdig purposes in these areas. This must be strictly adhered to and is not exceeded by any means.
3. Excavations are to be conducted using hand/light equipment only where within the protection zone areas. Prior to excavations with standard excavation equipment for the greater excavation area, a trench excavation along the extent of the excavation area (limit of overdig) within the area of tree protection zone encroachment is to be conducted using hand equipment (shovel) or root sensitive equipment only (air-spade or VAC equipment). This trench is to be excavated to a minimum depth of 1m, in order to expose roots for assessment and pruning/treatment by the onsite Arborist and to prevent root shatter from occurring during subsequent excavation equipment use.
4. Any roots discovered within the excavation area are to be cut cleanly and protected as well as possible from dehydration while exposed for prolonged periods.
5. Where the extent trench used for root pruning is to remain for a prolonged period prior to the remaining excavations through the area, the trench should be either backfilled with soil or filled with mulch to prevent desiccation of cut root ends.
6. No roots of significant structural size, or significant structural masses of smaller roots (as discerned by the on-site arborist), are to be severed by any means.
7. Any construction aggregate used is to be of neutral pH, so as not to alter the adjacent soil pH through leaching of minerals over time.
8. Fill soil used for backfilling the excavation areas is to be of high quality and is to be of the same texture as that of the existing site soil.
9. If construction is to occur during the summer months' provisions must be made to supply adequate watering in the absence of regular rainfall levels.

Patio Area Installations

Rear Courtyard

mTPZ Encroachment Area of Trees: #135 *Juglans nigra*

1. A Certified Arborist is recommended to be present to assess and treat roots discovered within the area of construction conflict with protected root zone areas.
2. The Zone of Construction (as shown in the attached arborist drawing TPR 101) in this area must be strictly adhered to. A work/construction allowance beyond the extent of the courtyard area of 0.15m (6 inches) has been allotted for work in areas of protected root zone conflict. This is to be adhered to.
3. Excavations required for courtyard patio area installations are to be done using hand equipment (shovel/rake) or root sensitive equipment (air spade) only where within the protected root zone area. Further, excavations in this area are to be done to the minimum depth required to level the area and provide a stable courtyard surface.
4. Any roots discovered during excavations that require severance for courtyard construction are to be cut cleanly and protected as well as possible from dehydration while exposed for prolonged periods. Where possible, rooting present within the soil at the bottom of the excavation depth required is to be preserved and have aggregate for courtyard construction placed on top of/surrounding these roots.
5. If roots are discovered and preserved in the area through the lower portions of excavation depth and are to be left exposed for prolonged periods they are to be protected from desiccation. This can be achieved by placement of burlap over the exposed roots and placing a light amount of soil or by placement of mulch to cover the area exposed, and keeping the area moist until such time as aggregate placement and surfacing of the courtyard area commences.
6. All construction aggregate used in the area must be of neutral pH, so as not to alter the pH of the surrounding existing site soil over time.
7. If construction is to occur during the summer months provision must be made to supply adequate watering in the absence of regular rainfall levels

Landscape Construction Area

Volleyball Court Installation

mTPZ Encroachment Area of Trees: #115 *Tilia cordata*

1. A Certified Arborist is to be present to assess and treat roots discovered within the area of construction conflict with protected root zone areas.
2. Excavations required for volleyball court area installations are to be done using hand equipment (shovel/rake) or root sensitive equipment (air spade) where within the protected root zone (mTPZ) area. Further, excavations in this area are to be done to the minimum depth required for installation of the volleyball court area.
3. If during excavations in the area roots of size are discovered, they are to be preserved through the patio/walkway installation activities where possible. It is accepted that fibrous/feeder roots will be severed in the area during patio/walkway installation, however, all roots of size (>2cm dia.) are to be preserved where possible during the construction through the area. If roots of size are exposed, they are to be protected from desiccation while exposed for prolonged periods by way of a mulch layer placed over the area.
4. If/where roots of size are discovered through the area of installation, preservation of roots discovered and exposed will require the placement of the underlayment (aggregate/sand) of the volleyball court placed surrounding and on top of these roots.
5. Any construction aggregate that may be required as a base for the volleyball area must be of neutral pH, so as not to alter the pH of the surrounding existing site soil over time.
6. If construction is to occur during the summer months provision must be made to supply adequate watering in the absence of regular rainfall levels

General Excavation Area – Layby Area

Layby Modification/Extension Area

mTPZ Encroachment Area of Trees: #193 Quercus rubra, #194 Quercus rubra, #195 Quercus rubra, #196 Quercus rubra, #197 Quercus rubra, #198 Quercus rubra

1. A Certified Arborist is to be present to assess and treat roots discovered within the area of driveway installation encroaching on the protected root zone area (TPZ) of tree(s).
2. The Zone of Construction (as shown in the attached arborist drawing TPR 101) in this area must be strictly adhered to. The work/construction allowance in the area of mTPZ conflict is to be limited to the extent of the existing curb in the area of distinctive trees, and the extent of the proposed curb in the extension area.
3. In areas of existing curb removal, the existing curb is to be removed by hand/light equipment (jackhammer/concrete saw) and the soil limit abutting the curb extent is to be maintained where possible. Any rooting of size as discovered within these areas is to be preserved as possible through layby reconstruction in this area. Additionally, this rooting is to be protected from desiccation if exposed for prolonged periods.
4. Any excavations required within the protected root zone areas (mPTZ) for layby extension/construction are to be done using hand equipment (shovel/rake), or root sensitive equipment (Airsfade), where within the protected root zone areas. Further, excavations in these areas are to be done to the minimum depth required to level the area and provide a stable driveway footing.
5. It is recommended that, prior to excavation of the new layby area extension, a trench along the extent of the excavation required for the layby within the mTPZ areas be excavated to the depth required for the layby installation. Excavations of this extent area are to be done by hand equipment (shovel) or root sensitive equipment (airsfade/VAC) only to allow for exposure, assessment, and pruning/treatment of rooting that may be present in the area by the onsite arborist.
6. Any roots discovered during excavations that require severance for layby area construction are to be cut cleanly and protected as well as possible from dehydration while exposed for prolonged periods. Where possible, rooting present within the soil at the bottom of the excavation depth required should be preserved and have aggregate for the layby construction placed on top of/surrounding these roots.
7. If roots are discovered and preserved in the area through the lower portions of excavation depth and are to be left exposed for prolonged periods, they are to be protected from desiccation by placement of mulch to cover the area exposed, and keeping the area moist until such time as aggregate placement and surfacing of the driveway area commences.
8. No roots of significant structural size, or significant structural masses of smaller roots (as discerned by the on-site arborist), are to be severed by any means.
9. Any construction aggregate used must be of neutral pH, so as not to alter the adjacent soil pH through leaching of minerals over time.

Post-Construction

Upon completion of the construction on the site, it is recommended that the following be undertaken to promote health and vigor of trees on the site as they recover from construction impacts.

1. Upon completion of construction and approval of such from the City of London, tree protection hoarding may be removed from the site.
2. Areas proposed for finish grading in preparation for turf installation/garden bed/plant installation is to occur. In regard to this finish grading work and soft landscaping the following is recommended:
 - Finish Grading/Soft Landscaping is not to commence until all aspects of primary construction, landscape construction, and swale/berm creation (including access) are completed.
 - Upon completion of the construction phases, with the only phase remaining being that of the finish grading and soft landscaping (planting/installation of turf grass), the tree protection hoarding may be removed to allow for finish grading/soft landscaping in these areas to occur.
 - All finish grading/soft landscaping in areas of protected root zones should be done using hand equipment only.
 - All finish grading/soft landscaping in areas of tree protection zones should be done by foot access only.
3. Replacement Tree Plantings, where/if required for tree removals, and as per an approved Replacement Tree Planting Plan/Landscape Plan, are to be conducted. Any replacement tree planting should be conducted in the next planting season post construction completion as follows:
 - If construction completion occurs in the fall/winter, compensation planting is recommended to occur in the first spring season post completion.
 - If construction completion occurs in the spring/summer, compensation planting is recommended to occur in the first fall season post construction completion.
4. It is recommended that a mulch bed be placed in the areas surrounding the base of trees. This area is recommended to be 6:1 of DBH at minimum, up to the size of the canopy area extent. Further, the mulch bed should be no greater than 2.5cm - 5cm (1 - 2 inches) in depth. A mulch layer in the root zone area will moderate soil temperature and moisture loss through evaporation, creating a better growing environment for roots.

GENERAL TREE PROTECTION GUIDELINES

Except as specifically stated in this report, all tree protection policies and zones are to be maintained in accordance with City of London Tree Protection Policy and Specifications.

Tree Protection Zones

All tree protection zones are to be implemented as shown in the arborist drawing. Tree protection barriers are shown and to be constructed not closer than specified in the table: Appendix I – Tree Inventory – (Minimum TPZ radius). Where practicable (and this cannot be anticipated in the drawing phase), these barriers may be increased in size up to the Recommended TPZ radius as described in that same table.

No construction activity including grade changes, surface treatments or excavations of any kind is permitted within the area identified on the plan as a Tree Protection Zone (TPZ). No root cutting is permitted. No storage of materials or fill is permitted within the TPZ. The areas identified as Tree Protection Zones must remain undisturbed at all times.

Tree Protection Barriers

Tree protection barriers should be constructed of solid plywood or equivalent, to a height of 1.2m around the front and sides of the construction envelope. In areas where visibility is of concern poly fencing may be used as a suitable tree protection-hoarding substitute. This will provide adequate tree protection while allowing for ample visibility.

All tree protection hoarding must be erected as shown in the attached arborist sketch TPR – 101.

General Note

Prior to the commencement of any site activity the tree protection barriers specified herein must be installed and written notice provided to City of London, Forestry Department. The tree protection barriers must remain in effective condition until all site activities including landscaping are complete. A sign as specified in Tree Protection Policy and Specification for Construction Near Trees must be attached to all sides of the barrier and at regular intervals for lengthy barriers. Written notice must be provided to City of London prior to the removal of the tree protection barriers.

Arboricultural Work

Any roots or branches extending beyond the tree protection zones indicated in this report and its associated drawings, which require pruning, must be pruned by a Qualified Arborist or other tree professional as approved by City of London. All pruning of tree roots and branches must be in accordance with good arboricultural standards. The Arborist must contact the City of London no less than 48 hours prior to conducting any specified work.

APPENDIX I – TREE INVENTORY AND SUMMARY TABLES

Tree Inventory

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
001	Syringa vulgaris Common Lilac Client Tree	28		8.0	2.0	2.08	4.00	2	2	2	40% - Poor Non-tagged. Lilac group in lawn. Dying. Remove due to condition.	Student Residence Totals:	0.0	100.0%	100.0%	100.0%	100.0%	Remove (health or soundness)
002	Prunus spp Cherry Species Client Tree	27		10.0	1.9	2.07	5.00	2	2	2	40% - Poor Group of various cherry. Overgrown with wild grape and boxelder. Near 134, 129,132, 133 Within zone of construction - Student Residence	Student Residence Totals:	0.0	100.0%	100.0%	100.0%	100.0%	Remove (within zone of construction)
003	Aesculus spp Horsechestnut Species Client Tree	18		4.0	1.6	1.98	2.00	0	2	0	0% - Dead/Dying	Construction activities (including access) do not encroach upon the protected root zone, or crown of this tree.						Remove (dead tree)
004	Juglans nigra Black Walnut Client Tree	10		4.0	1.2	1.90	2.00	3	3	3	60% - Fair	Construction activities (including access) do not encroach upon the protected root zone, or crown of this tree.						Protected (significant size)
101	Picea pungens Blue Spruce Client Tree	35		6.0	2.2	2.75	3.00	3	3	3	60% - Fair Within construction envelope - proposed student residence	Student Residence Totals:	0.0	100.0%	100.0%	100.0%	100.0%	Remove (within zone of construction)

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
102	Picea pungens Blue Spruce Client Tree	30		6.0	2.0	2.70	3.00	3	4	4	72% - Good Canker on main stem. Within construction envelope - proposed student residence	Student Residence Totals:	0.0 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	Remove (within zone of construction)	
103	Picea pungens Blue Spruce Client Tree	26		4.0	1.9	2.06	2.00	3	3	3	60% - Fair Lower branch dieback. Occluded. Within construction envelope - proposed student residence	Student Residence Totals:	0.0 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	Remove (within zone of construction)	
104	Picea pungens Blue Spruce Client Tree	34		6.0	2.2	2.74	3.00	3	3	3	60% - Fair Lower branch dieback. Within construction envelope - proposed student residence	Student Residence Totals:	0.0 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	Remove (within zone of construction)	
105	Picea pungens Blue Spruce Client Tree	30		6.0	2.0	2.70	3.00	3	3	3	60% - Fair Occluded Within construction envelope - proposed student residence	Student Residence Totals:	0.0 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	Remove (within zone of construction)	
106	Ginkgo biloba Maidenhair Tree Client Tree	20		6.0	1.7	2.00	3.00	4	4	4	80% - Good Within construction envelope - proposed student residence	Student Residence Totals:	0.0 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	Remove (within zone of construction)	
107	Ginkgo biloba Maidenhair Tree Client Tree	20		6.0	1.7	2.00	3.00	4	4	4	80% - Good Encroachment on MTPZ area for excavations for student residences. Removal recommended	Student Residence Totals:	1.6 6.4%	6.4% 18.9%	18.9% 6.4%	18.9% 18.9%	Remove (within zone of construction)	

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
108	Ginkgo biloba Maidenhair Tree Client Tree	17		6.0	1.5	1.97	3.00	4	4	4	80% - Good Severe encroachment by proposed student residence. Removal recommended.	Student Residence Totals:	0.9	24.1%	32.7%	24.1%	32.7%	Remove (within zone of construction)
109	Acer saccharum Sugar Maple Client Tree	25		8.0	1.9	2.05	4.00	4	3	4	72% - Good Cavity lower trunk. Within construction envelope - proposed student residence	Student Residence Totals:	0.0	100.0%	100.0%	100.0%	100.0%	Remove (within zone of construction)
110	Picea pungens Blue Spruce Client Tree	25		6.0	1.9	2.05	3.00	4	4	4	80% - Good Occluded Within construction envelope - proposed student residence	Student Residence Totals:	0.0	100.0%	100.0%	100.0%	100.0%	Remove (within zone of construction)
111	Abies concolor White Fir Client Tree	22		4.0	1.8	2.02	2.00	4	4	4	80% - Good Occluded critical encroachment on mTPZ - proposed student residence. To be removed	Student Residence Totals:	0.3	42.5%	42.5%	42.5%	42.5%	Remove (within zone of construction)
112	Picea pungens Blue Spruce Client Tree	20		4.0	1.7	2.00	2.00	3	3	3	60% - Fair Dieback. critical encroachment on mTPZ - proposed student residence. To be removed	Student Residence Totals:	0.2	46.1%	46.1%	46.1%	46.1%	Remove (within zone of construction)
113	Tilia cordata Litttleleaf Linden Client Tree	47		10.0	2.6	3.47	5.00	4	4	4	80% - Good Within construction envelope - proposed student residence	Student Residence Totals:	0.0	44.4%	41.6%	44.4%	41.6%	Remove (within zone of construction)

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
114	Tilia cordata Littleleaf Linden Client Tree	60		12.0	2.9	4.20	6.00	4	4	4	80% - Good Minor encroachment on mTPZ - proposed student residence.	Student Residence Totals:	3.6	3.9%	12.6%	3.9%	12.6%	Injured (minor encroachment on BTPZ)
115	Tilia cordata Littleleaf Linden Client Tree	72		12.0	3.2	5.52	6.00	4	4	4	80% - Good Somewhat thin. Minor encroachment on mTPZ - proposed Volleyball Court	Volleyball Court Totals:	4.2	2.0%	2.9%	1.0%	2.9%	Injured (minor encroachment on BTPZ)
116	Picea pungens Blue Spruce Client Tree	18		4.0	1.6	1.98	2.00	2	4	2	48% - Fair Dying Within construction envelope - proposed student residence. Also - tree condition is very poor.	Student Residence Totals:	0.3	41.0%	41.1%	41.0%	41.1%	Remove (within zone of construction)
117	Quercus alba White Oak Client Tree	14		4.0	1.4	1.94	2.00	2	4	3	55% - Fair Badly blighted. Lesions on trunk. No conflict with construction, but removal is recommended due to poor condition.	Volleyball Court Totals:	2.0	0.0%	0.3%	0.0%	0.3%	Remove (health or soundness)
118	Aesculus spp Horsechestnut Species Client Tree	43		10.0	2.4	3.43	5.00	3	4	4	72% - Good	Construction activities (including access) do not encroach upon the protected root zone, or crown of this tree.						Protected (significant size)
119	Aesculus spp Horsechestnut Species Client Tree	31		8.0	2.1	2.71	4.00	4	3	4	72% - Good Interior decay.	Construction activities (including access) do not encroach upon the protected root zone, or crown of this tree.						Protected (significant size)

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
120	Aesculus spp Horsechestnut Species Client Tree	31		8.0	2.1	2.71	4.00	4	4	4	80% - Good Within zone of construction - Volleyball Court	Volleyball Court Totals:	0.0 100.0%	92.8% 92.8%	50.0% 50.0%	92.8% 92.8%	Remove (within zone of construction)	
121	Gleditsia triacanthos var inermis Thornless Honey Locust Client Tree	38		14.0	2.3	2.78	7.00	4	4	4	80% - Good Within zone of construction - Volleyball Court	Volleyball Court Totals:	0.0 100.0%	69.1% 69.1%	50.0% 50.0%	69.1% 69.1%	Remove (within zone of construction)	
122	Gleditsia triacanthos var inermis Thornless Honey Locust Client Tree	37		10.0	2.3	2.77	5.00	4	4	4	80% - Good Critically impacted by construction of proposed residences and volleyball area. To be removed	Student Residence Volleyball Court Totals:	1.2 1.2	24.4% 11.4%	35.5% 17.2%	24.4% 5.7%	35.5% 17.2%	Remove (within zone of construction)
123	Pseudotsuga spp Douglas Fir Species Client Tree	36		6.0	2.2	2.76	3.00	3	3	3	60% - Fair Adjacent tree (west) is dead. Minimal encroachment to mtpz extent from walkway installation.	Student Residence Totals:	2.9 0.0%	0.9% 0.9%	0.0% 0.0%	0.9% 0.9%	Injured (minor encroachment on BTPZ)	
124	Pseudotsuga spp Douglas Fir Species Client Tree	45		8.0	2.5	3.45	4.00	3	2	2	45% - Fair Rear twin stem is broken off and decayed. Very chlorotic Recommended for removal due to structural condition.	Rear Courtyard Student Residence Totals:	3.6 2.9	1.7% 1.4%	3.3% 3.3%	1.4% 1.4%	0.0% 3.3%	Remove (health or soundness)
125	Pseudotsuga spp Douglas Fir Species Client Tree	40		10.0	2.4	2.80	5.00	3	3	3	60% - Fair Twin stems ~30cm each. Dieback.	Construction activities (including access) do not encroach upon the protected root zone, or crown of this tree.					Protected (significant size)	

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
126	Pseudotsuga spp Douglas Fir Species Client Tree	32		6.0	2.1	2.72	3.00	2	3	3	51% - Fair Dying back. Removal recommended due to poor condition.							Remove (health or soundness)
127	Tilia cordata Littleleaf Linden Client Tree	67		12.0	3.1	4.87	6.00	3	3	3	60% - Fair Within zone of construction - Student Residence Rear Walkway	Rear Courtyard Student Residence Totals:	0.0 4.6	85.3% 1.2% 86.5%	73.2% 7.2% 80.4%	85.3% 1.2% 86.5%	0.0% 7.2% 7.2%	Remove (within zone of construction)
128	Acer platanoides Norway Maple Client Tree	41		12.0	2.4	3.41	6.00	4	4	4	80% - Good Within zone of construction - Student Residence rear walkway.	Rear Courtyard Student Residence Totals:	0.0 1.8	80.9% 19.1% 100.0%	67.3% 32.2% 99.5%	80.9% 19.1% 100.0%	0.0% 32.2% 32.2%	Remove (within zone of construction)
129	Juglans nigra Black Walnut Client Tree	21		6.0	1.7	2.01	3.00	4	4	4	80% - Good Within construction envelope - proposed student residence	Rear Courtyard Student Residence Totals:	0.0 0.5	40.1% 59.9% 100.0%	34.9% 65.1% 100.0%	40.1% 59.9% 100.0%	0.0% 65.1% 65.1%	Remove (within zone of construction)
130	Pseudotsuga spp Douglas Fir Species Client Tree	38		8.0	2.3	2.78	4.00	4	4	4	80% - Good							Protected (significant size)
131	Pseudotsuga spp Douglas Fir Species Client Tree	37		8.0	2.3	2.77	4.00	3	3	3	60% - Fair Missing top.							Protected (significant size)
132	Liriodendron tulipifera Tuliptree Client Tree	33		8.0	2.1	2.73	4.00	4	2	3	55% - Fair Hollow. Within construction envelope - proposed student residence	Student Residence Totals:	0.0	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	Remove (within zone of construction)

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status	
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown		
133	Tilia cordata Littleleaf Linden Client Tree	27		6.0	1.9	2.07	3.00	4	4	4	80% - Good	Student Residence	0.0	80.7%	77.1%	80.7%	77.1%	Remove (within zone of construction)	
												Totals:		80.7%	77.1%	80.7%	77.1%		
												Within construction envelope - proposed student residence							
134	Juglans nigra Black Walnut Client Tree	16		6.0	1.5	1.96	3.00	4	4	4	80% - Good	Student Residence	0.0	100.0%	100.0%	100.0%	100.0%	Remove (within zone of construction)	
												Totals:		100.0%	100.0%	100.0%	100.0%		
												Within construction envelope - proposed student residence							
135	Juglans nigra Black Walnut Client Tree	100		22.0	3.7	7.00	11.00	4	3	3	65% - Good Should be cabled.	Rear Courtyard	6.2	2.6%	15.0%	2.6%	0.0%	Injured (minor encroachment on BTPZ)	
												Student Residence	7.8		2.6%		2.6%		
												Totals:		2.6%	17.7%	2.6%	2.6%		
												Minor encroachment on mTPZ at Student Residence rear walkway.							
136	Pseudotsuga spp Douglas Fir Species Client Tree	25		4.0	1.9	2.05	2.00	3	3	3	60% - Fair	Student Residence	1.7	5.3%	4.5%	5.3%	4.5%	Remove (within zone of construction)	
												Totals:		5.3%	4.5%	5.3%	4.5%		
												Minor encroachment due to Student Residence. This tree is part of a row which is to be removed. Removal recommended. Defer to Landscape Architect re injure/remove.							
137	Pseudotsuga spp Douglas Fir Species Client Tree	23		4.0	1.8	2.03	2.00	2	2	2	40% - Poor Topped.	Construction activities (including access) do not encroach upon the protected root zone, or crown of this tree.					Remove (health or soundness)		
												Removal recommended due to poor form and condition from topping.							
138	Pseudotsuga spp Douglas Fir Species Client Tree	33		6.0	2.1	2.73	3.00	2	3	2	45% - Fair Dying back	Construction activities (including access) do not encroach upon the protected root zone, or crown of this tree.					Remove (health or soundness)		
												Removal recommended due to condition.							

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
139	Pseudotsuga spp Douglas Fir Species Client Tree	29		4.0	2.0	2.09	2.00	2	3	2	45% - Fair Only top still alive. Removal recommended due to condition.							Remove (health or soundness)
140	Pseudotsuga spp Douglas Fir Species Client Tree	20		4.0	1.7	2.00	2.00	3	2	2	45% - Fair Vine wrapped and twisted Removal recommended due to poor form. Part of row to be removed for condition or construction. Removal recommended.							Remove (aesthetic)
141	Pseudotsuga spp Douglas Fir Species Client Tree	34		8.0	2.2	2.74	4.00	4	3	4	72% - Good Trunk bifurcates at 2m. Part of a row of trees which are to be removed due to condition or construction conflict. Removal recommended.	Student Residence Walkway - Parking Area Totals:	3.9 3.1 0.0%		0.6% 4.7% 5.3%		0.6% 2.4% 2.9%	Remove (aesthetic)
142	Pseudotsuga spp Douglas Fir Species Client Tree	47		8.0	2.6	3.47	4.00	3	3	3	60% - Fair Trunk bifurcation at 2m Part of a row of trees which are to be removed due to condition or construction conflict. Removal recommended.	Student Residence Walkway - Parking Area Totals:	3.7 1.9 21.6%		1.4% 26.4% 27.7%		1.4% 10.8% 14.5%	Remove (aesthetic)
143	Pseudotsuga spp Douglas Fir Species Client Tree	40		6.0	2.4	2.80	3.00	3	3	3	60% - Fair Trunk bifurcation at 2m Within zone of construction - Tower Lane Parking Area Walkway	Walkway - Parking Area Totals:	0.1 47.9%		48.3% 48.3%		24.0% 24.1% 24.0% 24.1%	Remove (within zone of construction)

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
144	Pseudotsuga spp Douglas Fir Species Client Tree	42		8.0	2.4	3.42	4.00	3	3	3	60% - Fair Within zone of construction - Tower Lane Parking Area Walkway.	Driveway and Parking - Tower Lane Student Residence Walkway - Parking Area Totals:	2.8 3.6 0.0	4.1% 1.9% 74.2% 78.2%	7.4% 1.9% 66.4% 75.7%	3.0% 37.1% 33.2% 40.1%	0.0% 1.9% 33.2% 35.1%	Remove (within zone of construction)
145	Pseudotsuga spp Douglas Fir Species Client Tree	20		4.0	1.7	2.00	2.00	3	3	3	60% - Fair Crowded. Bent. Within zone construction - Tower Lane Parking Area Walkway	Driveway and Parking - Tower Lane Walkway - Parking Area Totals:	1.1 0.0	18.2% 81.8% 100.0%	18.2% 81.8% 100.0%	13.6% 40.9% 54.5%	0.0% 40.9% 40.9%	Remove (within zone of construction)
146	Pseudotsuga spp Douglas Fir Species Client Tree	28		6.0	2.0	2.08	3.00	3	3	3	60% - Fair Within zone of construction - Tower Lane Parking Area	Driveway and Parking - Tower Lane Walkway - Parking Area Totals:	0.0 0.9	69.2% 30.8% 100.0%	54.5% 45.5% 100.0%	51.9% 15.4% 67.3%	0.0% 22.7% 22.7%	Remove (within zone of construction)
147	Pseudotsuga spp Douglas Fir Species Client Tree	41		6.0	2.4	3.41	3.00	1	3	3	36% - Poor All but dead. Within zone of construction - Tower Lane Parking Area. Also almost dead. Recommended for removal due to condition regardless of construction	Driveway and Parking - Tower Lane Walkway - Parking Area Totals:	0.0 1.6	77.4% 22.6% 100.0%	80.8% 19.2% 100.0%	58.0% 11.3% 69.3%	0.0% 9.6% 9.6%	Remove (health or soundness)
148	Liriodendron tulipifera Tuliptree Client Tree	45		14.0	2.5	3.45	7.00	4	4	4	80% - Good Within construction envelope - proposed student residence	Student Residence Totals:	0.0	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	Remove (within zone of construction)
149	Aesculus spp Horsechestnut Species Client Tree	56		10.0	2.8	4.16	5.00	4	4	4	80% - Good Within construction envelope - proposed student residence	Student Residence Walkway - Parking Area Totals:	0.0 4.0	99.5% 0.6% 100.1%	94.7% 3.7% 98.3%	99.5% 0.3% 99.8%	94.7% 1.8% 96.5%	Remove (within zone of construction)

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
150	Aesculus spp Horsechestnut Species Client Tree	58		10.0	2.8	4.18	5.00	4	4	4	80% - Good Within construction envelope - proposed student residence	Student Residence 0.0 Totals:	100.0% 100.0% 100.0%	100.0% 100.0% 100.0%	100.0% 100.0% 100.0%	100.0% 100.0% 100.0%	Remove (within zone of construction)	
151	Aesculus spp Horsechestnut Species Client Tree	41		8.0	2.4	3.41	4.00	4	4	4	80% - Good Within construction envelope - proposed student residence	Student Residence 0.0 Totals:	100.0% 100.0% 100.0%	100.0% 100.0% 100.0%	100.0% 100.0% 100.0%	100.0% 100.0% 100.0%	Remove (within zone of construction)	
152	Aesculus spp Horsechestnut Species Client Tree	22		10.0	1.8	2.02	5.00	4	4	4	80% - Good Within construction envelope - proposed student residence	Student Residence 0.0 Totals:	100.0% 100.0% 100.0%	100.0% 100.0% 100.0%	100.0% 100.0% 100.0%	100.0% 100.0% 100.0%	Remove (within zone of construction)	
153	Quercus rubra Northern Red Oak Client Tree	18		8.0	1.6	1.98	4.00	4	4	4	80% - Good Within construction envelope - Student Residence	Student Residence 0.0 Totals:	100.0% 100.0% 100.0%	100.0% 100.0% 100.0%	100.0% 100.0% 100.0%	100.0% 100.0% 100.0%	Remove (within zone of construction)	
154	Celtis occidentalis Common Hackberry Client Tree	24		6.0	1.8	2.04	3.00	4	4	4	80% - Good Within construction envelope - proposed student residence	Student Residence 0.0 Totals:	100.0% 100.0% 100.0%	100.0% 100.0% 100.0%	100.0% 100.0% 100.0%	100.0% 100.0% 100.0%	Remove (within zone of construction)	
155	Juglans nigra Black Walnut Client Tree	68		20.0	3.1	4.88	10.00	4	4	4	80% - Good Impact of parking area construction (incl walkway) will present severe root impact with plan as proposed. Not expected to tolerate impact proposed.	Driveway and Parking - Tower Lane Walkway - Parking Area Totals:	3.5 1.2 41.7 %	9.5% 32.2 % 53.2 %	36.2 17.0 % 23.2 %	7.1% 16.1 % 8.5% %	0.0% 8.5% %	Remove (within zone of construction)

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
156	Pseudotsuga spp Douglas Fir Species Client Tree	26		6.0	1.9	2.06	3.00	3	3	2	51% - Fair Leaning heavily to south. Within construction envelope - proposed student residence	Student Residence Totals:	0.0	100.0%	100.0%	100.0%	100.0%	Remove (within zone of construction)
157	Pseudotsuga spp Douglas Fir Species Client Tree	18		2.0	1.6	1.98	1.00	0	3	0	0% - Dead/Dying Dead DEAD TREE Within construction envelope - proposed student residence.	Student Residence Totals:	0.0	100.0%	100.0%	100.0%	100.0%	Remove (dead tree)
158	Pseudotsuga spp Douglas Fir Species Client Tree	32		6.0	2.1	2.72	3.00	2	3	3	51% - Fair Dieback lower branches. Within construction envelope - proposed student residence	Student Residence Totals:	0.0	100.0%	100.0%	100.0%	100.0%	Remove (within zone of construction)
159	Pseudotsuga spp Douglas Fir Species Client Tree	31		6.0	2.1	2.71	3.00	3	3	3	60% - Fair Within construction envelope - proposed student residence	Student Residence Totals:	0.0	100.0%	100.0%	100.0%	100.0%	Remove (within zone of construction)
160	Pseudotsuga spp Douglas Fir Species Client Tree	26		6.0	1.9	2.06	3.00	3	3	2	51% - Fair Crooked to south. Within construction envelope - proposed student residence	Student Residence Totals:	0.0	100.0%	100.0%	100.0%	100.0%	Remove (within zone of construction)
161	Pseudotsuga spp Douglas Fir Species Client Tree	16		4.0	1.5	1.96	2.00	3	3	3	60% - Fair Within construction envelope - proposed student residence	Student Residence Totals:	0.0	100.0%	100.0%	100.0%	100.0%	Remove (within zone of construction)

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
162	Pseudotsuga spp Douglas Fir Species Client Tree	29		6.0	2.0	2.09	3.00	3	3	3	60% - Fair Dieback lower and north side. Within construction envelope - proposed student residence	Student Residence Totals:	0.0	100.0%	100.0%	100.0%	100.0%	Remove (within zone of construction)
163	Pseudotsuga spp Douglas Fir Species Client Tree	32		8.0	2.1	2.72	4.00	3	3	3	60% - Fair Within construction envelope - proposed student residence	Student Residence Totals:	0.0	100.0%	100.0%	100.0%	100.0%	Remove (within zone of construction)
164	Pseudotsuga spp Douglas Fir Species Municipal tree on Municipal Road Allowance	29		8.0	2.0	2.09	4.00	3	3	3	60% - Fair Dieback on south side.	Construction activities (including access) do not encroach upon the protected root zone, or crown of this tree.						Protected (significant size)
165	Pseudotsuga spp Douglas Fir Species Municipal tree on Municipal Road Allowance	26		6.0	1.9	2.06	3.00	3	3	3	60% - Fair Crook at 1.2m some dieback. Utility line conflict.	Construction activities (including access) do not encroach upon the protected root zone, or crown of this tree.						Protected (significant size)
166	Pseudotsuga spp Douglas Fir Species Municipal tree on Municipal Road Allowance	17		4.0	1.5	1.97	2.00	3	3	3	60% - Fair Occluded	Construction activities (including access) do not encroach upon the protected root zone, or crown of this tree.						Protected (significant size)
167	Pseudotsuga spp Douglas Fir Species Municipal tree on Municipal Road Allowance	28		6.0	2.0	2.08	3.00	3	3	3	60% - Fair Group of 3 trees. Tree gis is centroid of triangle.	Construction activities (including access) do not encroach upon the protected root zone, or crown of this tree.						Protected (significant size)

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
168	Pseudotsuga spp Douglas Fir Species Municipal tree on Municipal Road Allowance	25		6.0	1.9	2.05	3.00	3	3	3	60% - Fair							Protected (significant size)
169	Pseudotsuga spp Douglas Fir Species Municipal tree on Municipal Road Allowance	18		4.0	1.6	1.98	2.00	3	3	3	60% - Fair Suppressed							Protected (significant size)
170	Pseudotsuga spp Douglas Fir Species Municipal tree on Municipal Road Allowance	27		8.0	1.9	2.07	4.00	3	3	2	51% - Fair Very suppressed. Dieback.							Protected (significant size)
171	Pseudotsuga spp Douglas Fir Species Municipal tree on Municipal Road Allowance	28		6.0	2.0	2.08	3.00	3	3	3	60% - Fair							Protected (significant size)
172	Pseudotsuga spp Douglas Fir Species Municipal tree on Municipal Road Allowance	29		8.0	2.0	2.09	4.00	3	3	3	60% - Fair							Protected (significant size)
173	Pseudotsuga spp Douglas Fir Species Municipal tree on Municipal Road Allowance	18		6.0	1.6	1.98	3.00	3	3	3	60% - Fair							Protected (significant size)

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
174	Pseudotsuga spp Douglas Fir Species Municipal tree on Municipal Road Allowance	41		10.0	2.4	3.41	5.00	4	3	4	72% - Good Conflict with utility lines.							Protected (significant size)
175	Pseudotsuga spp Douglas Fir Species Municipal tree on Municipal Road Allowance	25		6.0	1.9	2.05	3.00	3	3	3	60% - Fair							Protected (significant size)
176	Pseudotsuga spp Douglas Fir Species Municipal tree on Municipal Road Allowance	23		4.0	1.8	2.03	2.00	1	3	1	26% - Poor Mostly dead Remove for condition.							Remove (health or soundness)
177	Pseudotsuga spp Douglas Fir Species Municipal tree on Municipal Road Allowance	35		8.0	2.2	2.75	4.00	3	3	3	60% - Fair Straddles boundary line - i.d. as spruce in london gis. Adjacent construction of Richmond/University Walkway Removal recommended.	Walkway - Richmond_University Totals:	0.3 	32.6% 32.6%	28.4% 28.4%	16.3% 16.3%	14.2% 14.2%	Remove (within zone of construction)
178	Pseudotsuga spp Douglas Fir Species Client Tree	38		8.0	2.3	2.78	4.00	2	3	2	45% - Fair Some lower dieback in stem 1 trunk 2 is dead. declining Remove due to condition.	Student Residence Walkway - Richmond_University Totals:	1.6 0.0 	4.9% 81.3% 86.2%	8.6% 56.8% 65.4%	4.9% 40.6% 45.5%	8.6% 28.4% 37.0%	Remove (health or soundness)
179	Syringa reticulata Japanese Tree Lilac Client Tree	29		8.0	2.0	2.09	4.00	4	4	4	80% - Good							Protected (significant size)

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
180	Syringa reticulata Japanese Tree Lilac Client Tree	27		6.0	1.9	2.07	3.00	4	4	4	80% - Good Encroachment on mTPZ due to Proposed Student Residence and walkway.	Student Residence Walkway - Richmond_University Totals:	1.2 0.0 100.0%	16.1% 83.9% 97.0%	25.9% 71.1% 58.1%	16.1% 41.9% 58.1%	25.9% 35.5% 61.4%	Remove (within zone of construction)
181	Magnolia spp Magnolia Species Client Tree	28		8.0	2.0	2.08	4.00	4	3	4	72% - Good Within construction envelope - proposed student residence	Student Residence Totals:	0.0 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	Remove (within zone of construction)
182	Magnolia spp Magnolia Species Client Tree	24		8.0	1.8	2.04	4.00	3	2	2	45% - Fair Hollow with decay, both stems. Within construction envelope - proposed student residence	Student Residence Totals:	0.0 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	Remove (within zone of construction)
183	Acer freemanii [rubrum x saccharinum] Freeman Maple Client Tree	70		14.0	3.1	4.90	7.00	4	2	4	60% - Fair Hollow at base. Tree has been lion-tailed. Within construction envelope - proposed student residence	Student Residence Walkway - Richmond_University Totals:	0.0 2.6 87.1%	81.8% 5.3% 77.1%	72.8% 4.3% 77.1%	81.8% 2.7% 84.4%	72.8% 2.2% 75.0%	Remove (within zone of construction)
184	Quercus alba White Oak Client Tree	21		6.0	1.7	2.01	3.00	4	4	4	80% - Good Within construction envelope - proposed student residence	Student Residence Totals:	0.0 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	Remove (within zone of construction)
185	Acer freemanii [rubrum x saccharinum] Freeman Maple Client Tree	68		16.0	3.1	4.88	8.00	3	2	3	51% - Fair Interior decay and hollows in all stems. Dieback. Within construction envelope - proposed student residence	Student Residence Totals:	0.0 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	Remove (within zone of construction)

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
186	Magnolia spp Magnolia Species Client Tree	25		8.0	1.9	2.05	4.00	4	3	3	65% - Good Hollow and decay. Within construction envelope - proposed student residence	Student Residence Totals:	0.0 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	Remove (within zone of construction)	
187	Magnolia spp Magnolia Species Client Tree	26		8.0	1.9	2.06	4.00	3	2	3	51% - Fair Hollows and decay throughout. Dieback. Within construction envelope - proposed student residence	Student Residence Totals:	0.0 100.0%	100.0% 100.0%	100.0% 100.0%	100.0% 100.0%	Remove (within zone of construction)	
188	Syringa reticulata Japanese Tree Lilac Client Tree	22		4.0	1.8	2.02	2.00	4	4	4	80% - Good Within construction envelope - proposed student residence	Student Residence Walkway - Richmond_University Totals:	0.0 1.6 100.0%	98.2% 1.8% 100.0%	98.4% 1.6% 100.0%	98.2% 0.9% 99.1%	98.4% 0.8% 99.2%	Remove (within zone of construction)
189	Syringa reticulata Japanese Tree Lilac Client Tree	18		4.0	1.6	1.98	2.00	4	4	3	72% - Good Poor taper. Adjacent walkway construction presents severe encroachment on mtpz. Removal recommended.	Walkway - Richmond_University Totals:	0.4 38.5%	38.5% 38.6%	19.3% 19.3%	19.3% 19.3%	Remove (within zone of construction)	
190	Pseudotsuga spp Douglas Fir Species Client Tree	32		4.0	2.1	2.72	2.00	2	2	2	40% - Poor Dieback, decay. Large wound on west side. Remove due to condition	Construction activities (including access) do not encroach upon the protected root zone, or crown of this tree.					Remove (health or soundness)	
191	Quercus rubra Northern Red Oak Client Tree	29		10.0	2.0	2.09	5.00	4	4	4	80% - Good	Construction activities (including access) do not encroach upon the protected root zone, or crown of this tree.					Protected (significant size)	
192	Quercus rubra Northern Red Oak Client Tree	51		10.0	2.7	4.11	5.00	4	4	4	80% - Good	Construction activities (including access) do not encroach upon the protected root zone, or crown of this tree.					Protected (significant size)	

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
193	Quercus rubra Northern Red Oak Client Tree	55		10.0	2.8	4.15	5.00	4	4	4	80% - Good Encroachment on mTPZ from layby area modifications.	Layby Extension Walkway - Principal Entrance Totals:	1.3 4.0	11.6% 0.8%	9.9% 4.3%	8.7% 0.4%	9.9% 2.2%	Injured (minor encroachment on BTPZ)
194	Quercus rubra Northern Red Oak Client Tree	58		12.0	2.8	4.18	6.00	4	4	4	80% - Good Wound at base, south side. Encroachment on mTPZ from layby area modifications.	Layby Extension Walkway - Principal Entrance Totals:	1.3 3.9	11.3% 1.3%	8.2% 12.1%	8.4% 0.6%	8.2% 6.1%	Injured (minor encroachment on BTPZ)
195	Quercus rubra Northern Red Oak Client Tree	51		12.0	2.7	4.11	6.00	4	4	4	80% - Good Encroachment on mTPZ from layby area modifications.	Layby Extension Walkway - Principal Entrance Totals:	1.1 5.8	11.1% 0.6%	7.9% 0.3%	8.4% 0.3%	7.9% 8.2%	Injured (minor encroachment on BTPZ)
196	Quercus rubra Northern Red Oak Client Tree	36		8.0	2.2	2.76	4.00	3	2	3	51% - Fair Large wound with decay on northwest side. Sulphur fungus. Encroachment on mTPZ from layby area modifications.	Layby Extension Totals:	1.1	14.5%	11.1%	10.9%	11.1%	Injured (minor encroachment on BTPZ)
197	Quercus rubra Northern Red Oak Client Tree	36		10.0	2.2	2.76	5.00	4	4	4	80% - Good Encroachment on mTPZ from layby area modifications.	Layby Extension Totals:	1.1	26.5%	28.0%	19.9%	28.0%	Injured (minor encroachment on BTPZ)
198	Quercus rubra Northern Red Oak Client Tree	40		10.0	2.4	2.80	5.00	4	4	4	80% - Good Encroachment on mTPZ from layby area modifications.	Layby Extension Totals:	1.7	12.9%	24.6%	9.7%	24.6%	Injured (minor encroachment on BTPZ)

Tree Num	Botanical/ Common Name Owner	DBH (cm)	Trunk Lean and Direction	Canopy Diameter (M)	Critical Root Zone Radius (M)	TPZ Radius (M)		Condition			Comments – Condition Related Comments – Construction Related	Construction / Demolition / Access Phase	Minimum Distance From Phase (M)	TPZ Encroachment (Area/Area)		Anticipated Injury From Encroachment %		Status
						Base	Crown	Health (0-5)	Soundness (0-5)	Form (0-5)				Base	Crown	Base	Crown	
199	Quercus rubra Northern Red Oak Client Tree	45		12.0	2.5	3.45	6.00	4	4	4	80% - Good							Protected (significant size)

Summary Tables

Trees by Owner

All Trees

Ownership	Count
Client Tree	89
Municipal tree on Municipal Road Allowance	14
Total	103

Significant Trees Only

Ownership	Count
City of London Forestry DBH 5cm or greater	
Client Tree	89
Municipal tree on Municipal Road Allowance	14
Total	103

Summary of Trees by Status

Status	Count
Protected (significant size)	22
Injured (minor encroachment on BTPZ)	10
Remove (within zone of construction)	55
Remove (aesthetic)	3
Remove (health or soundness)	11
Remove (dead tree)	2
Total	103

APPENDIX II – ARBORIST’S DECLARATIONS

This report represents a fair and accurate assessment of the number, type, size, and condition of the tree(s) on the aforementioned property.

Certificate of Performance

I, Shayne Plowman, certify that:

- I have personally inspected the trees and the property referred to in this report and have stated my findings accurately. The extent of the evaluation or appraisal is stated in the attached report and the Terms of Assignment.
- I have no current or prospective interest in the vegetation or the property that is the subject of this report and have no personal interest or bias with respect to the parties involved.
- The analysis, opinions, and conclusions stated herein are my own and are based on current scientific procedures and facts.
- My analysis, opinions, and conclusions were developed, and this report has been prepared in accordance with commonly accepted arboricultural practices.
- No one provided significant professional assistance to me, except as indicated within this report.
- My compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.
- I further certify that I am a member in good standing of the International Society of Arboriculture, and that I carry the designation of ISA Certified Arborist ON-0425A I have been involved in the field of Arboriculture in a full-time capacity for a period of more than 30 years.



Shayne Plowman
ISA Certified Arborist: ON-0425A

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16 February 2024

Assumptions and Limiting Conditions

- Any legal description provided to the consultant is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as free and clear, under responsible ownership and competent management.
- Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant can neither guarantee nor be responsible for the accuracy of information provided by others.
- The consultant shall not be required to give testimony or attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.
- Loss or alteration of any part of this report invalidates the entire report.
- Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written consent or verbal consent of the consultant.
- Neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales, or other media, without the prior expressed written or verbal consent of the consultant particularly as to value conclusions, identity of the consultant, or any reference to any professional society or institute or to any initialed designations conferred upon the consultant as stated in his qualifications.
- This report and values expressed herein represent the opinion of the consultant, and the consultant's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.
- Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.
- Unless expressed otherwise:
 1. Information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and
 2. The inspection is limited to visual examination of accessible items without dissection, excavation, probing or cutting.
 3. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

Disclaimer

This report is based upon Land Survey drawings (with tree locations marked) provided by the client and prepared by a professional Land Surveyor. No grading information was provided at the time of preparation of this report.

The arborist is not a professional Land Surveyor, and as such can make no claim as to the accuracy of the provided drawings.

16 February 2024



Shayne Plowman
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APPENDIX III – METHODOLOGY

Location

Unless otherwise specified, this Tree Survey is based upon Land Survey drawings for tree locations. Where additional trees are located, by the arborist, the locations of these trees are approximate only, to within 30cm. This dilution of precision is sufficient for most Tree Preservation requirements but should not be used to determine ownership of the subject tree. Additionally, where additional trees are located by GPS positioning (GIS) although without use of Differential GPS equipment, positional accuracy is limited to 3-5m (not sufficient for most tree preservation calculations).

Measurements

DBH (D140/D150)

The Tree Survey (inventory and location) will encompass any trees on the client site having a DBH of 10cm or greater; trees of any size on adjacent municipal lands and situated within 6m of the client site, or zone of construction; trees having a DBH of 10cm or greater on adjacent private lands and situated within 6m of the client site. Trunk diameters are measured using a diameter tape and rounded upwards to the nearest centimeter. In the case of a multi-stemmed tree, nominal DBH will be calculated as the square root of the sum of the squares of the stem diameters. In the case of hedges, the nominal DBH will be considered to be the diameter of the largest tree.

Canopy

Canopy diameters are representative of the greatest distance from canopy edge to trunk, and should be accurate to ± 50 cm, unless otherwise specified. In the case of hedges, the nominal canopy radius will be considered to be the greatest extent perpendicular to the line of the hedge.

Other Measurements

Where applicable, Height (measured by clinometer and accounting for grade), Trunk Lean (measured by angle protractor), with compass direction, and Canopy Offset (distance and compass direction), may also be recorded for some or all subject trees.

Evaluation of Tree Condition

All trees are evaluated based on Health, Structure and Form. These individual ratings are then combined into one overall Condition Rating. All ratings are based on criteria as shown below.

RATING	HEALTH	STRUCTURE	FORM
0	Dead	Dead	Dead
1 (Very Poor)	Appears to be dying and in last stages of life. Little live foliage	Single or multiple severe defects. Failure is probable or imminent.	Visually unappealing. Provides little or no function in the landscape
2 (Poor)	Unhealthy and declining in appearance. Extensive twig or branch dieback.	Single serious or multiple significant defects. Recent changes in orientation. Uncorrectable. Failure may occur at any time.	Largely asymmetrical or abnormal. Detracts from intended use or aesthetics to a significant degree.
3 (Fair)	Reduced vigor. Damage due to insects or diseases may be significant, but unlikely to be fatal. Dieback, defoliation, or dead branches may comprise up to 50% of the crown.	Single defect of significant or multiple moderate defects. Defects are not practical to correct or would require multiple treatments over several years.	Major asymmetries or deviations from either species norms or intended use. Function or aesthetics are compromised.
4 (Good)	Normal vigor. No significant damage from insects or diseases. Twig dieback, defoliation or discoloration is minor.	Well-developed structure. Defects are minor and can be corrected.	Minor asymmetries or deviations from species norms. Mostly consistent with intended use. Function and aesthetics are not compromised.
5 (Excellent)	High vigor and nearly perfect health. Little or no twig dieback, defoliation, or discoloration.	Nearly ideal and free from defects.	Nearly ideal for the species. Consistent with intended use.
Unless otherwise specified, tree condition is determined by Limited Visual Assessment (ground based), and is determined on site, as separate Health, Structural, and Form score according to the above ratings as per Guide for Plant Appraisal 10 th Edition. Overall Condition Rating is calculated as the Harmonic Mean of the Health, Structure and Form Ratings.			

Appraisal

Where required, some or all of the inventoried trees will be Appraised (monetarily valued). All appraisals are conducted in accordance with the Guide for Plant Appraisal 10th Edition.

Assessment of TPZ Encroachment and Anticipated Impact

All trees are evaluated for root impact potential where a TPZ encroachment is proposed. To provide an anticipated impact, the following assumptions are made:

1. Unless otherwise specified, root distribution on all sides of the tree is equal. For purposes of root assessment, the rooting area is assumed to be an equally distributed disc of rooting around the tree.
2. Unless otherwise specified, rooting profile depth is anticipated to be 1.2m. as is consistent with the rooting profile of trees in average soil profile conditions.
3. Encroachment is calculated using Area x Area method unless otherwise specified (such as for bisecting trenches).
4. Anticipated Root Impact takes in to account the area of encroachment, depth of excavations/fill required, and any mitigating factors (such as a limited rooting profile – e.g. foundation preventing rooting beyond wall extent) to determine an expected root mass injury to the tree

From the anticipated root mass impact, a designation regarding the impact to botanical health is assigned. This is separated in to four categories as follows:

1. **0.5% - 10% Anticipated Impact: Minimal Impact**
 - No Significant Dieback anticipated, however, some branch tip/branchlet dieback may occur in impacts approaching 10%
 - Minimal reduction in growth rate through recovery post impact (1-2 seasons)
 - Sensitive Species may have a minor increase in susceptibility to biotic/abiotic disorders (insect/disease/environmental)
 - No long-term detriment to the botanical health, or structural integrity of the tree. The tree is expected to fully recover from injury.
2. **11% - 19% Anticipated Impact: Moderate Impact**
 - Branch Dieback anticipated, however, it is expected to be minimal to moderate, affecting no greater than 15% of the total canopy area
 - Reduction in growth rate through recovery of post impact (2 - 5 seasons)
 - Reduced Canopy Density
 - Increase in susceptibility to biotic/abiotic disorders (insect/disease/environmental)
 - No significant detriment to the function of the tree anticipated long term, however, botanical health will receive impact for multiple seasons.
 - No Impact to structural integrity is expected
 - The tree is expected to recover from injury to its' pre construction impact health rating (approximately), however, monitoring is recommended post construction to provide treatment through recovery including (but not limited to): fertilization, treatment of disorders as may arise (abiotic/biotic), compaction alleviation (where applicable), maintenance pruning, etc.
3. **20% - 25% Anticipated Impact: Major Impact**
 - Branch Dieback anticipated to be major and significant but tolerable with after care, affecting no greater than 25% of the total canopy area
 - Significantly reduced growth rate through recovery post impact (>5 seasons)
 - Reduced Canopy Density
 - Increase in susceptibility to biotic/abiotic disorders (insect/disease/environmental)
 - Long term (>5yr) detriment to the function of the tree anticipated. Botanical health will receive impact for multiple seasons, if not be impacted permanently.
 - The tree is expected to recover from injury and tolerate the impact, however, it is expected that it will be reduced in botanical health as compared to its' pre construction impact health rating. Additionally, form will be permanently

impacted by either dieback or required pruning. Monitoring is recommended post construction to provide treatment through recovery and ensure survival including (but not limited to): fertilization, treatment of disorders as may arise (abiotic/biotic), compaction alleviation (where applicable), maintenance pruning/deadwood removal (as required), etc.

- Specialized fertilization or insect/disease treatments may be required due to total root mass injury through recovery, such as direct stem injection.

- Note: Where Major impact tree are to be preserved, no significant impact to stability of the root plate is expected to occur.

4. **> 25% Anticipated Impact or Stability Impact to Root Plate: Critical Impact – Tree to be Removed due to Construction Impact**

- Botanical impact not anticipated to be tolerable (Tree anticipated to have a 50% or less chance of survival from impact), or

- Impacted stability of root plate from construction

- Tree to be proposed for removal

APPENDIX IV – DRAWING REFERENCE

Based upon the information obtained in the tree survey, the trees are to be plotted, to scale. Depending on the intended use of the drawings, these will be overlaid on: Survey, Site Plan or Grading Plan provided by others. The arborist is not responsible for deficiencies in drawings prepared by others.

For most purposes, drawings will be published at a scale of 1:200 (metric) with dimensions in metric and imperial units, on a standard sheet size of Arch-D (24x36). Where permitted by the recipient, drawings may be produced at a scale of 1:250, or in a larger sheet size of Arch-E (36x48). Should multiple sheets be required, an index drawing (TPR-100) will be provided at a smaller scale (e.g., 1:500, 1:1000).

Drawing Indexing and Content

TPR-1xx series

- All surveyed trees, with Tree Number, Species, DBH, Minimum TPZ, and Canopy extents plotted.
- Any trees which are proposed to be removed.
- Trees which will potentially be subject to Injury because of the proposed site work are not uniquely identified.
- Hatching to clearly identify areas of Tree Protection Zone encroachment by the proposed construction. (*Hatching may be omitted for clarity*)
- Locations for prescribed Tree Protection Fencing.
- Minimization of Damage notes.
- Scale 1:100 (*small sites only*), 1:200, 1:250

TPR-9xx series (*on smaller sites, photos may be included in TPR-101 drawing*)

- Photo Reference Drawings, providing photo records of each tree.
- Photos are indexed by Tree and (*per tree*) Photo letter.
- Scale as listed above (*TPR-1xx series*)

If required, additional drawings may be rendered as follows:

- TPR-2xx – Section views
- TPR-3xx – Elevation views
- TPR-5xx – Detail views
- TPR-6xx – Schedules and/or Diagrams

APPENDIX V – DRAWINGS