

ARBORIST REPORT

TREE MANAGEMENT FOR REZONING

ISSUANCE DATE: April 21, 2023

REVISION # **2 November 10, 2025**

ACL FILE: 23121

ISSUED FOR: **RZ Application**

PREPARED FOR:

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SUBJECT SITE:

**Rezoning for Proposed Multi-Family Development
3295 and 3333 Commercial Drive, Vancouver**

BACKGROUND

The subject site is comprised of an existing multi-family apartment building and adjacent single-family dwelling with related hardscape features and active landscape condition. We understand that the project is intended to consist of demolition of existing structure(s), retaining walls and construction of a new multi-family development, including an underground parking structure, related site preparation works, installation of infrastructure, amenities and landscape finishing. This office conducted a site investigation on April 13, 2023 to assess the site and the existing trees relative to the proposed development.

Figure 1. Aerial Photo of the Subject Site



This report has been prepared in accordance with provisions in the City of Vancouver Tree Protection Bylaw No. 9958.

The municipal development application and tree permit processes require that existing trees outside of an approved building envelope be considered for preservation within the development, and retained where possible and practical. In some cases, the municipality requires the design of the project to be altered in order to achieve that objective. It is also incumbent on the project to provide adequate protection for municipal owned trees in the street frontages as well as off-site private located in close proximity to the site. To assist the project in meeting the municipal requirements, we have compiled a record of trees required to be removed to accommodate the construction, and developed specifications for responsible tree retention, protection and removal.

As a condition of development approvals, the municipality requires proof of contract with the project arborist confirming that they are retained to direct tree protection compliance, implementation of measures and completion of prescribed treatments in the form of a Letter of Assurance. The municipality also requires our sign off at the end of the project confirming that those measures have been fully met before occupancy and/or release of any tree protection bonds or securities held by the municipality. The responsibilities of the owner and their contractors are outlined in the proof of contract document (see appendix E), which must be signed before submittal.

Reference Documents relied upon by the consultant in the preparation of this report:

- Topographic and Tree Location Survey source; JC Tam and Associates, dated March 20, 2023
- Architectural Design source; TKA+D, dated September 18, 2025
- Landscape Design source; Hapa Collaborative, dated September 19, 2025
- Civil Design source; To be provided when available.
- Excavation and Shoring Plan source; To be provided when available.

NOTE: This report, including appendices, is a living document that is only relevant to the version dates of the reference documents listed above. If any of those designs are advanced or revised beyond the noted version date, then this report is no longer valid. In order to ensure relevance to the applicable phase of the project, this report may require revision or updating to coordinate with the current designs. It is the responsibility of the client to provide this office with updated design drawings and/or any other project details that may affect our tree preservation findings as and when they become available, in order to maintain validity of our report.

METHODOLOGY

Our site and tree assessment included a review of site conditions and an assessment of the existing trees via direct visual inspection which includes tagging or assigning an identification number, collection of pertinent tree data such as species, size (i.e. trunk diameter, height and spread), the current condition (health and structure), the age class, the structural class, visual presence/absence of tree disease and site specific details.

We have assigned retention suitability rankings for tree preservation planning context. These rankings are notwithstanding the proposed design and site coverage of the project and are described as follows:

- **Priority 1** – denotes trees in good to excellent condition, are tolerant of indirect construction impacts, and deemed by the assessor as highly valued candidates for preservation. These trees are expected to have strong long-term prospects for survivorship if the project can reasonably accommodate the specified protection measures and treatments.
- **Priority 2** – denotes trees in fair condition with correctable or minor defects and/or with moderate aesthetic or functional impairments and/or have moderate tolerances for indirect construction impacts, and that present acceptable value for retention. These trees can reasonably be expected to survive the rigours of construction, conditional to compliance with protection measures and completing corrective treatments.
- **Low Priority** – denotes trees in poor or worse condition, have significant pre-existing health or structural impairments, and/or that are intolerant of the unavoidable indirect impacts from construction in their vicinity. These trees are predictably expected to pose risks of failure or mortality relative to the general site changes from the development and have nil retention suitability.

We have overlain the proposed design on our tree management drawing to develop specifications for tree retention, protection and removal. Our findings are summarized in report sections herein, and in the report appendices.

NOTE: This report is not intended as a tree risk report, however the structural form as well as the presence and severity of defects were factors in our tree assessment. Based on Tree Risk Assessor Qualification (**TRAQ**) Level 1 – Limited Visual Assessment methods protocols, if we observe any trees within the study area that are imminently posing risk to current targets in the existing land uses, they are brought to the attention of the owner for consideration of further assessment and/or action.

TREE PROTECTION PLANNING

Existing trees have been considered for retention. Trees in very poor condition and that are not expected to survive the construction are designated for removal. Trees located within the building envelope (including required construction work areas) that were not able to be practically accommodated by the project through design strategies are deemed to be in direct conflict with the construction and are also designated for removal. Viable condition trees located outside of the building envelope proposed for retention have been specified for retention. Our tree protection strategy encourages the project to implement tree protection barrier installation at the optimal tree protection zone (TPZ) setbacks, however where the project requires certain activities within the optimal setbacks, we are supportive of managed encroachments into the optimal TPZ via;

- applying best management practices to ensure that the proposed encroachment does not destabilize or mortally injure the tree, and so that the form, function and aesthetic value of the retained tree is preserved;
- implementing innovative strategies such as strategic design, arboricultural measures and/or selective use of certain construction methods and materials to limit impacts to the trees;
- conducting treatments or measures to enhance the growing environment to compensate for the loss of roots and changes to the growing space; and
- when those strategies are not able to be adequately achieved, specify removal of those trees as a last resort.

With managed encroachment into the optimal TPZ, there is an increased duty of care for the project to ensure implementation of the recommended protection measures.

Certain site and tree condition factors may also require other measures. For instance, existing structures or hardscapes that are located within the tree protection zone and the presence of underlying or interfacing roots and/or overhanging crowns may result in a need for low impact methods to remove them. Those areas may also be required to be converted to a productive growing environment (i.e. soft landscape condition). There may also need to be a phased implementation of tree protection barriers and measures as the project advances from site preparation phase – to construction phase – to the landscape finishing phase.

The main components of our tree protection prescription are as follows:

- ***Crown Protection Zone (CPZ):***
The protection of the crown is to the dripline extents, representing the current extents of the branches and foliage. Buildings should be designed so that the structure, as well as the operation of any equipment required to build and maintain the structure, do not require encroach into that aerial space. Planning for the access to construct the building, including installing building cladding and finishing, is necessary. Where possible, additional setback should be added to accommodate those needs as well as for future growth of the tree crown. In some cases, pruning can be implemented to enable construction access, for maintenance or to control the growth of the tree, but there are tree specific restrictions and limits on the scope of pruning that can be undertaken for those purposes. Any encroachments into the CPZ requires due consideration of the pruning scope required to accommodate those activities.
- ***Root Protection Zone (RPZ):***
Conditional to meeting CPZ requirements and any associated limitations on pruning, ground based disturbance may be tolerable to a reduced TPZ setback, and the tree protection barrier alignment for the construction phase can be aligned at the RPZ. An impact and mitigation analysis via detailed testing is required before confirming viability, and root mapping investigation may be needed to inform that analysis. There must be strong and defensible rationale for making such adjustments, and there are limits on the proximity to a tree relative to maintaining its health and stability. The proximity of root and soil disturbance toward a tree may differ on each side of a tree. When a setback is reduced on one side of a tree, the setbacks on other sides of the tree should be increased. Measures/treatments to enhance the soil gas exchange, percolation and fertility as well as to moderate soil desiccation, will be a component of their management. Other construction related encroachments into the RPZ, whether temporary or permanent, are not desirable. However, when absolutely necessary and unavoidable, temporary access may be able to be

accommodated via interim measures. We have a large tool box of cost effective solutions to consider in this regard.

- ***Cautionary Zone – Working Space Setback (WSS):***

Tree roots can extend many metres beyond the dripline of a tree. Any construction activity that will disturb the soil adjacent to a specified RPZ requires the on-site supervision by our staff to implement appropriate measures that will minimize risks that root damage will extend into the RPZ. These measures include proactive root pruning either in advance of the planned construction activities or concurrent with those works. This WSS is applicable to all aspects of the site preparation, construction and landscape finishing for the project, however once root pruning is completed along the RPZ interface, no further limitations in the WSS are required (notwithstanding CPZ requirements).

Tree protection setbacks, barriers and restrictions are specified in the Tree Management Drawing (see appendix C), Tree Protection Specifications (see appendix D) and Letter of Assurance/Undertaking (see appendix E). On-site field services or supervision by the project arborist from this office are required as specified on those documents.

To avoid non-compliance issues with city bylaws, and to ensure that a favourable final sign-off can be issued by this office, the client is responsible to ensure coordination of our specifications with all contractors and trades working on the site. Strong communication protocols between the client, the general contractor and this office is vital in order to keep the arborist apprised of progress on the site and to ensure advance notice to schedule attendance at specific times and project milestones.

The fees associated with implementing tree protection measures and treatments and for our construction phase inspections, supervision, site review reports, and final sign off are the responsibility of the client.

TREE PRESERVATION ANALYSIS AND FINDINGS

Considering our tree condition findings, and after careful review of the supplied project design, we have used our experience and knowledge to anticipate the construction impacts. From this process we have developed a proposed tree retention and removal scheme including tree protection setbacks and measures. Refer to the report appendices for additional details, tree location reference, and additional specifications.

The subject trees consist of predominantly ornamental deciduous and coniferous trees growing in the active landscape related to the current land use. Large native coniferous species trees are observed on neighbouring private lands deemed within influencing distance from the subject site. We also consider informal City-owned street trees located within the road frontage of the subject site between the existing sidewalk and property line.

The proposed development includes the demolition of existing structures and hardscapes and the construction of a new multi-family development with related underground parking structure, service connections and landscape amenities.

The proposed treatment of trees subject trees is as summarized by location as described below.

ON-SITE TREES:

Proposed Retention of 0 On-Site Trees:

- In context to the current site plan, there are no on-site trees which are in a suitable condition and viable location to achieve preservation.

Proposed Removal of 12 On-Site Trees:

- Tree Tag/IDs of on-site trees proposed for removal:
- 720, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, and N23
- See appendices for removal tree Tag/ID's and locations.
- Any removal trees which are shared ownership (i.e. trunks straddle the property line) will require a letter of consent from the joint tree owner(s) before the municipality considers issuing a tree cutting permit, and the municipality usually wants this resolved before issuing development approvals.
 - Shared Tree 722 and 724 – Seek approval from the Parks board arborist to remove these trees due to their pre-existing poor condition as well as direct conflict with pedestrian access pathways and installation of related hardscape features.

CITY TREES:

Proposed Removal of 1 City Trees:

- Due to certain project related construction needs, the following trees are proposed to be removed.
 - City Tree 721 – Seek approval from the Parks board arborist to remove this informal street tree due to its pre-existing poor condition as well as direct conflict with pedestrian access pathways and installation of related hardscape features.

NEIGHBOUR TREES:

Proposed Retention of 19 Neighbour Trees:

- Tree Tag/IDs: N01, N02, N03, N04, N06, N07, N08, N09, N10, N11, N12, N13, N14, N15, N16, N17, N18, N19, and N22
- Retained trees will require protection measures implemented as specified for the duration of construction.
- Coordination with this office is required for any contemplated access within tree protection zones for direction and recommendations from the project arborist.
- The project arborist must be on-site prior to commencing with and during any scope of soil disturbance within 1.5 m of the root protection zone – as detailed and dimensioned on the Tree Management Drawing to direct low impact methods, undertake root pruning and make recommendations in accordance with arboricultural best management practices.

Proposed Removal of 5 Neighbour Trees:

- Due to certain project related construction needs, the following trees are proposed to be removed.
 - 3281 Commercial Drive
 - Neighbour Tree 732, and N23: Seek approval from the neighbouring owner to remove these trees due to impacts which will result from excavation for the underground parking structure as well as preparation for installation of the pedestrian pathway aligned with the north property line.
 - 1665 East 18 Avenue:
 - Neighbour Tree N05: Seek approval from the neighbouring owner to remove this tree due to excessive and destabilizing root loss which will result from demolition of the existing concrete retaining wall, and excavation for the underground parking structure.
 - 3306 Flemming Street:
 - Neighbour Tree N20, and N21: Seek approval from the neighbouring owner to remove these trees due to their pre-existing very poor (dead) condition.

TREE RETENTION AND REMOVAL SUMMARY

Table1. Tree Retention/Removal by Ownership

Ownership:	SubTotal:	Remove:	Retain:
<i>On-Site Trees</i>	11	11	0
<i>City Street Trees</i>	1	1	0
<i>Neighbour Trees</i>	24	5	19
TOTALS	36	17	18

Table 2. Tree Retention/Removal of On-Site Trees by Priority Ranking

Priority Ranking:	SubTotal:	Remove:	Retain:
1	0	0	0
2	1	1	0
Low	10	10	0
TOTALS	11	11	0

Table 3. Tree Retention/Removal of On-Site Trees by Species

Species:	SubTotal:	Remove:	Retain:
Grand fir (<i>Abies grandis</i>)	1	1	0
Japanese maple (<i>Acer palmatum</i>)	1	1	0
Common horsechestnut (<i>Aesculus hippocastanum</i>)	1	1	0
Katsuratree (<i>Cercidiphyllum japonicum</i>)	1	1	0
Hazelnut (<i>Corylus sp.</i>)	1	1	0
Apple (<i>Malus sp.</i>)	2	2	0
Cherry plum (<i>Prunus cerasifera</i>)	1	1	0
Cherry (<i>Prunus sp.</i>)	2	2	0
Eastern white cedar (<i>Thuja occidentalis</i>)	1	1	0
TOTALS	11	11	0

TREE REPLACEMENT

Tree replacement requirements will be confirmed by the municipality in relation to their policies. The municipality requires one or two replacement trees for each bylaw tree to be removed (1:1 or 2:1 quota), depending on the species selected for replacement. We recommend limiting the quantity of trees to an appropriate quantity relative to the available space for planting and meeting arboricultural best management practices. The replacement trees must meet city requirements for minimum size at planting (i.e. 6 cm calliper for deciduous species and 3.5 m height for coniferous species) and other criteria. Tree replacement requirements will be confirmed by the municipality in relation to their policies. Design and specifications for the replacement trees will be provided by the project landscape architect.

STANDARDS OF WORK FOR TREE TREATMENTS

The methods to undertake any **Tree Work** (i.e. cutting/removal and rigging operations, pruning, hardware installation, lightning protection, IPM, etc) should conform to ANSI A300 and ANSI Z133 standards and best management practices, as well as applicable WorksafeBC regulations and standards. The scope and specifications for all tree work is to be directed by the project arborist from this office and undertaken by a **Qualified Tree Worker** who is an ISA Certified Arborist, TRAQ qualified and who is competent in assessing the structural soundness of the tree relative to the proposed tree work activities. The tree worker should also be well experienced with spurless climbing and technical rigging techniques that are being utilized. Operational decisions to be made in the performance of tree work are at the sole discretion of the tree service worker



to carry out those works properly and meeting the required standards for safety.

Where overhead power lines are near to the subject tree(s), the tree worker must consider the safety setbacks and protocols related to the conductors, as specified by the power utility company. If applicable, consult with that utility in advance to determine whether a Certified Utility Arborist (CUA) is required to direct the planned tree work and/or any other measures.

In the case of commercial land clearing operations the felling/handling of trees is required to be in conformance with WorksafeBC and other Provincial regulations that may be applicable to these operations. Recovery and transport of any commercial timber from a site will require that the land owner obtain a Timber Mark from the local BC Forest office in advance of transportation from the site. If any trees at the commercial land clearing site require specific treatments or methods of felling, for instance in order to protect retained trees, those treatments and removal operations must be undertaken by a qualified tree worker adhering with the standards for tree work as described above.

Removals of approved trees from within the municipal road frontage or any other municipal property may be required by the city to be undertaken by; municipal crews or by a tree service company pre-qualified by the municipality to perform such work within their lands.

If trees located within adjacent private property require specific treatments or methods of removal in order to protect retained trees, or for any reason, those treatments and removals must be undertaken by a tree worker adhering with the standards for tree work as described above. If stumps are requested to be removed, stump grinding or extraction by machinery with root cutting and other tactics may be considered. The project arborist from this office can provide additional advice in this regard on a tree by tree basis upon request.

Certified by;

Nick McMahon, Senior Consulting Arborist

Qualifications of the Author:

ISA Board Certified Master Arborist #PN-7136B

ISA Qualified Tree Risk Assessor (TRAQ)

PNWISA Certified Tree Risk Assessor #1763

BC Certified Wildlife Dangerous Tree Assessor (Parks) # P2519

Enclosures;

APPENDIX A – PHOTOS

APPENDIX B – TREE INVENTORY LIST

APPENDIX C – TREE MANAGEMENT DRAWING

APPENDIX D – TREE PROTECTION ZONE SPECIFICATIONS

APPENDIX E – ARBORISTS LETTER OF UNDERTAKING (LETTER OF ASSURANCE)

APPENDIX F – MUNICIPAL SUMMARY FORM

Assumptions and Limiting Conditions:

- This report was prepared for the client as addressed herein. Upon receipt of payment in full for our account, this report will become the property of the client. This report is intended for the exclusive use of our client in its entirety. Arbortech shall not accept any liability derived from partial, unintended, unauthorized or improper use of this report.
- This report is restricted only to the subject trees as detailed herein, and no other trees were inspected or assessed and our findings are not meant to infer that other trees are healthy and sound.
- The inner tissue of the trunk, stems, limbs and roots are hidden within the tree and the majority of a tree's root system is hidden below ground. Our tree assessments are limited to relying upon visual inspection of the tree parts and, where applicable, utilizing basic non-destructive testing methods such as probing and sounding to identify potential structural defects. Trees utilize adaptive growth strategies in response to their growing site conditions to sustain their structural integrity and their health and their response growth can compensate for structural impairments, however the results of those growth responses may mask defects from visual detection. Using our experience and training we carefully inspect the tree for indicators of internal defect. Where applicable, subject to the discretion of the client, we may have utilized advanced and minimally invasive testing methods to determine the severity of certain observed defects to the extent possible. Our defect analysis considers the mitigating effects of response growth and common weather conditions in the region when we are rating the probabilities for tree failure.
- The client is advised that not all defects can be detected or reliably assessed through available non-destructive or minimally invasive methods, and that the forces acting upon trees during extraordinary and extreme weather are unpredictable. During uncommon storm events any tree, healthy or not, has a risk of failure. For these reasons, we do not guarantee or warrant that an assessed tree is free of defect or that it will not fail.
- The ownership of trees is determined based on the location of the trunk where it emerges from the ground relative to the property line. If a part of the trunk at ground level crosses over a property line, then it is deemed to be jointly owned by those property owners. The client is advised that the accurate determination of tree ownership may require the advice from a duly qualified professional surveyor.



- Third party information may have been relied upon in the formation of the opinion of the consultant and in the preparation of this report. We have verified that information to a reasonable extent of our capabilities to assume it to be reliable, however we do not warrant that third party information to be true and correct.
- The use of maps, sketches and diagrams (figures) are intended for reference by the reader in understanding our findings, and are not intended as a representation of fact. These figures shall not be used in determining property lines, ownership or project layout.
- Permits, approvals or authorizations from a municipality and/or a regulatory agency may be required prior to carrying out treatments that may be proposed in this report. The client is responsible for the application, related fees and costs, and meeting all requirements and conditions for the issuance of such permits, approvals or authorizations. If a tree located on or partially within adjacent lands is proposed for treatment, consent from the tree owner is required.

APPENDIX A: PHOTOS

Photo 1. Tree # 720	Photo 2. Tree # 721
	
Photo 3. Tree # 722	Photo 4. Tree #738
	

Photo 5. Tree # 724



Photo 6. Tree #724 – Historic branch failure



Photo 7. Tree # 724 – Water-filled cavity



Photo 8. Tree #725

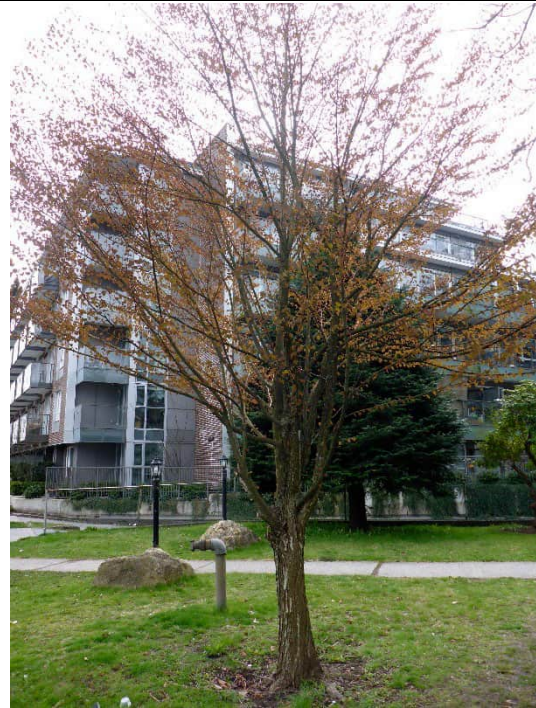


Photo 9. Tree # 726



Photo 10. Tree #727

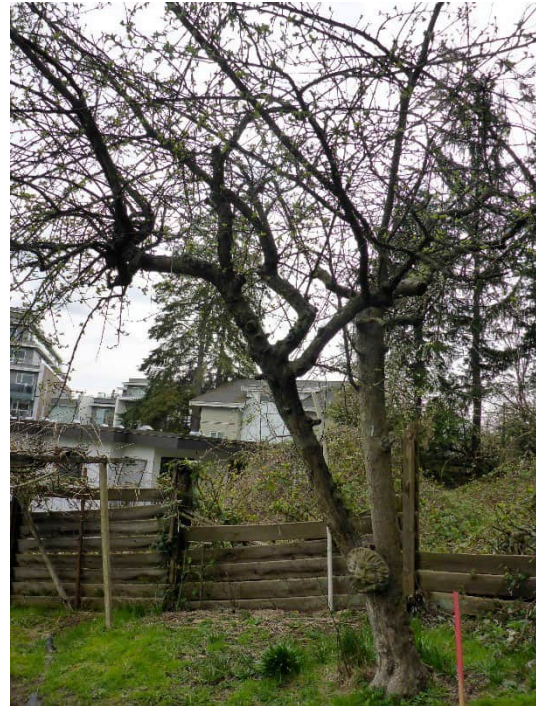


Photo 11. Tree # 728 – Dead, (N20, N21 background)



Photo 12. Tree #729



Photo 13. Tree # 730



Photo 14. Tree #730



Photo 15. Tree # 731



Photo 16. Tree #732



Photo 17. Trees N01 – N04 (left to right)

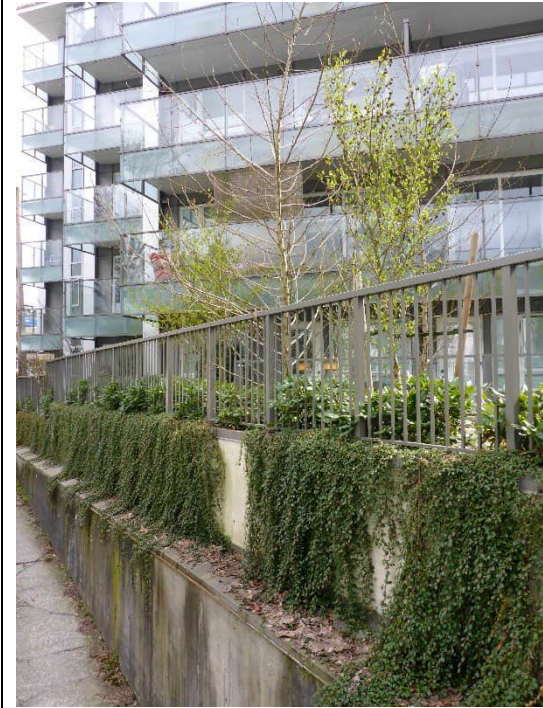


Photo 18. Trees N05, and N06 (left to right)

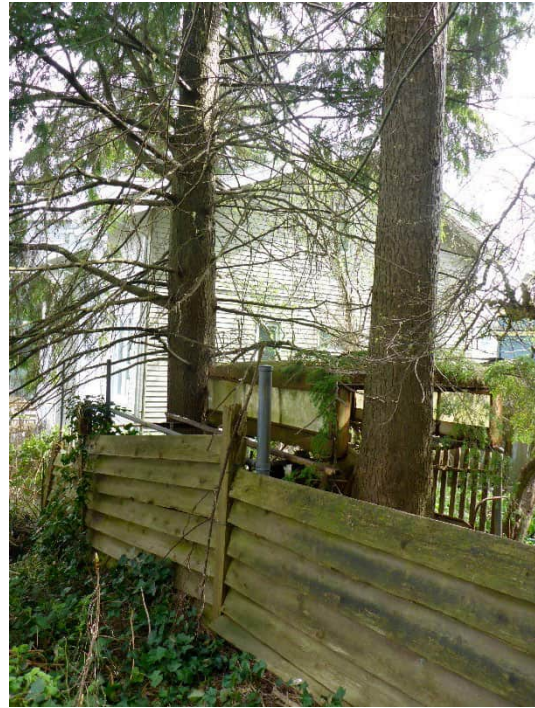


Photo 19. Trees N05, and N06 (left to right)

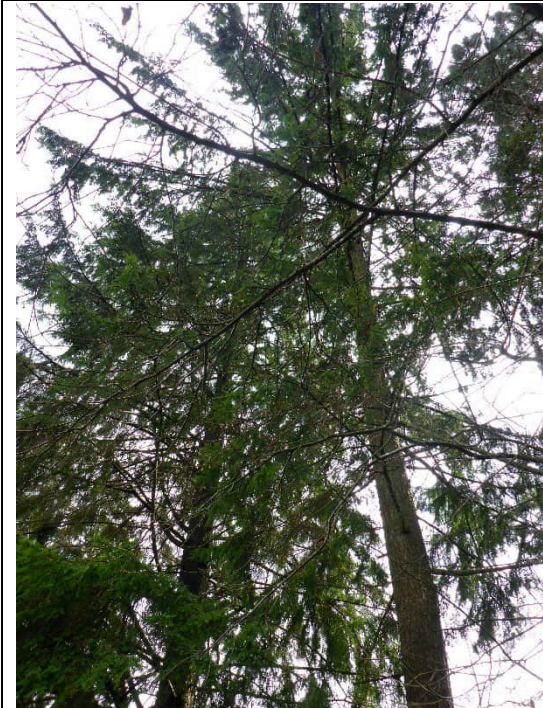


Photo 20. N07





Photo 21. Tree N08



Photo 22. Tree # N09

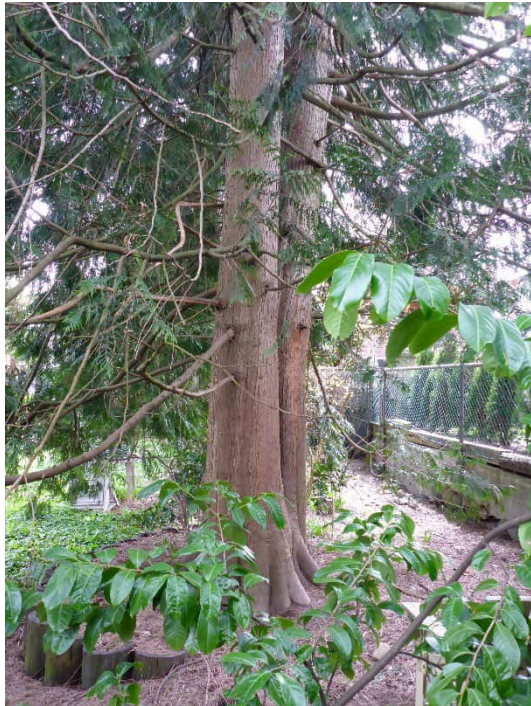


Photo 23. Tree N10 – Cavity and crack in stem at base, hardscape over root zone



Photo 24. Tree # N10



Photo 25. Tree N11 - Hedgerow



Photo 26. Tree #s N13 – N19



Photo 27. Tree N22



Photo 22. Tree # N32



APPENDIX B: TREE INVENTORY LIST: (all dimensions are metric)

Tag/ID denotes the arborist tag # or serial ID number as referenced in report and drawing documentation.

Survey denotes whether tree is shown on the tree and topographic survey provided by client (Y/N). If we are relying on survey tag #'s we include it for reference.

Loc denotes location as from survey; **ON** (on site), **SHARED** (straddling PL), **OFF** (off site private), **CITY** (road frontage or other), **ESA** (environmentally sensitive area), **PARK** (city)

DBH denotes the diameter(s) of the main stems of the subject tree as measured by the arborist in accordance with arboricultural best management practices.

- This data supersedes any other data (including surveyor dimensions).

DIA BYLAW: denotes the diameter of a tree calculated by the project arborist based on municipal bylaw definitions and provisions.

DIA TPZ: denotes the diameter of a tree calculated by the project arborist using arboricultural standards and using the CTLA trunk area method to determine a single stem equivalent.

- This diameter is the basis for consideration by the project arborist in determining the tree protection setback (RPZ in particular). Measurements be estimated based on

Ht denotes the height of the tree in metres as measured or estimated by the assessor.

Spr denotes the spread RADIUS of the branches and foliage (dripline) in metres as measured or estimated by the assessor.

LCR denotes the live crown ratio based on percent of live crown observed in relation to a tree of normal form and with a full crown.

Class denotes the structural class of a tree. **Landscape Trees;** considers exposure: **O** denotes open, **G** denotes Grove, **E** denotes Edge, **W** denotes Windrow

Priority denotes preservation ranking for consideration in tree retention planning considering multiple factors including; condition, value rating, age, species, etc.

Priority rankings; 1, 2 and L (Low). NOTE: Individual trees within forest stands are generally deemed LOW priority for selective retention except when sufficiently large stands are

Assessment Findings includes; our summary of overt defects, noteworthy growing condition factors, preservation and protection considerations and treatment rationale.

Action denotes proposed treatment in context to the project design; **RETAIN, REMOVE or PROTECT**. Removal of Shared and Off-Site trees **require owner consent**.

CPZ and **RPZ;** arborist setbacks for Crown and Root protection (measured from centre of trunk). A **WSS** (working space setback) is additional to the RPZ (see drawing). All 3 form

Reference Bylaw: VANCOUVER PROTECTION OF TREES BYLAW NO. 9958, AMENDED JUNE 2022

Minimum Bylaw Protected Tree Size: 20 cm DBH ; and Multi-stem trees with a cumulative diameter of the largest three stems equal to or > 20 cm.

Tag/ID	Survey ID	Loc	# of Trees	Common name, (<i>Botanical</i>)	DBH	DIA BYLAW	Bylaw Y/N	DIA TPZ (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Assessment Findings:
720	560	ON	1	Eastern white cedar (<i>Thuja occidentalis</i>)	15,13	28	Y	15	5	2.0	60	G	• DBH is representative of the largest of measured stems (15,13cmØ) at 1.4m above grade for protection setback calculation purposes. - Numerous dead limbs and historical top failure. RATIONALE: • DIRECT CONFLICT WITH FRONTYARD RE-GRADING AND INSTALLATION OF PEDESTRIAN ACCESS PATHWAYS.
721	559	CITY	1	Hazelnut (<i>Corylus</i> sp.)	15,15, 14	44	Y	15	10	6.0	80	G	• DBH is representative of the largest of measured stems (15,15,14cmØ) at 1.4m above grade for protection setback calculation purposes. - Approx. 25 stems (3cm - 15 cm dbh range). • Dead tops throughout crown with fungal fruiting bodies (<i>Tremetes</i> sp.) indicating dead woody tissue. RATIONALE: • DIRECT CONFLICT WITH FRONTYARD RE-GRADING AND INSTALLATION OF PEDESTRIAN ACCESS PATHWAYS.

Tag/ID	Survey ID	Loc	# of Trees	Common name, (<i>Botanical</i>)	DBH	DIA BYLAW	Bylaw Y/N	DIA TPZ (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Assessment Findings:
722	561	SHARED CITY	1	Hazelnut (Corylus sp.)	12,13, 15	40	Y	15	8	6.0	75	G	- DBH is representative of the largest of measured stems (12,13,15cmØ) at 1.4m above grade for protection setback calculation purposes. - Approx. 25 stems (3cm - 10 cm dbh range). - Multiple stems attach at root crown. RATIONALE: - DIRECT CONFLICT WITH FRONTYARD RE-GRADING AND INSTALLATION OF PEDESTRIAN ACCESS PATHWAYS.
723	683	ON	1	Japanese maple (Acer palmatum)	32	32	Y	32	9	7.0	0	O	- Fully dead. RATIONALE: - DIRECT CONFLICT WITH THE UNDERGROUND PARKING STRUCTURE.
724	567	SHARED CITY	1	Horsechestnut (Aesculus hippocastanum)	73+71	144	Y	102	19	8.0	90	O	- DBH of a single stem equivalent is calculated based on the area of measured stems (73+71cmØ) at 1.4m above grade for protection setback calculation purposes. 1 M large vertical crack on West Stem at 2M height, pruning stubs throughout, Large cavity in East stem holding water up to 15cm depth. - Excessive epicormic growth throughout the crown. - Historically topped at 15 m and pruned via heading cuts. RATIONALE: - EXCESSIVE IMPACTS WILL RESULT FROM EXCAVATION FOR THE UNDERGROUND PARKING STRUCTURE AND PRUNING TO MITIGATE AERIAL CONFLICT WITH THE BUILDING STRUCTURE AND RELATED CONSTRUCTION WORKING SPACE. - THIS TREE IS IN POOR PRE-EXISTING HEALTH WITH SIGNIFICANT STRUCTURAL DEFICIENCIES WHICH ARE EXPECTED TO CONTRIBUTE TO FAILURE AND PREMATURE MORTALITY. ASSESSMENT VIA TRAQ LEVEL 3 METHODS HAVE BEEN PROVIDED IN A SEPARATE REPORT TO INFORM MANAGEMENT DECISIONS FOR CONSIDERATION OF THE OWNER.

Tag/ID	Survey ID	Loc	# of Trees	Common name, (<i>Botanical</i>)	DBH	DIA BYLAW	Bylaw Y/N	DIA TPZ (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Assessment Findings:
725	570	ON	1	Katsuratree (Cercidiphyllum japonicum)	26	26	Y	26	10	4.0	90	0	- Recently pruned via heading cuts. - Deadwood in the crown and decayed old wounds. RATIONALE: - DIRECT CONFLICT WITH REGRADING OF FRONYARDS AND PREPARATION FOR INSTALLATION OF PEDESTRIAN ACCESS PATHWAYS AND
726	470	ON	1	Grand fir (Abies grandis)	41	41	Y	41	12	4.0	95	0	- Historically topped at 8.0 m above grade. Two replacement leaders attach at historic topping site, of which one is dominant. RATIONALE: - EXCESSIVE ROOT LOSS WILL RESULT FROM EXCAVATION FOR THE UNDERGROUND PARKING STRUCTURE.
727	800	ON	1	Apple (Malus sp.)	18+21	39	Y	28	6	5.0	75	0	- Topped at 3.0 m above grade, resulting in a decayed wound. RATIONALE: - EXCESSIVE ROOT LOSS WILL RESULT FROM PREPARATION FOR INSTALLATION OF PROPOSED PEDESTRIAN PATHWAYS AND RELATED RETAINING WALL.
728	810	ON	1	Cherry (Prunus sp.)	28	28	Y	28	8	3.0	40	0	- Fungal black knot disease throughout the crown . RATIONALE: - REMOVE DUE TO INFECTION WITH DIESEAE WHICH CANNOT BE REMEDIATED VIA SOUND ARBORICULTURAL PRACTICES.
729	814	ON	1	Cherry (Prunus sp.)	27	27	Y	27	4	3.0	30	0	- Very poor health and structure - dying and prone to failure. RATIONALE: - REMOVE TO DUE SEVERE PRE-EXISTING HEALTH AND STRUCTURAL DEFICIENCIES.
730	830	ON	1	Apple (Malus sp.)	45	45	Y	45	6	6.0	20	0	Very little live crown, trunk is cracked vertically in many locations and completley hollow. - Minimal shell wall thickness remains. This tree is prone to failure. RATIONALE: - DIRECT CONFLICT WITH EXCAVATION FOR THE UNDERGROUND PARKING STRUCTURE AND PEDESTRIAN ACCESS PATHWAY.

Tag/ID	Survey ID	Loc	# of Trees	Common name, (<i>Botanical</i>)	DBH	DIA BYLAW	Bylaw Y/N	DIA TPZ (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Assessment Findings:
731	673	ON	1	Cherry plum (<i>Prunus cerasifera</i>)	16+9	25	Y	18	9	6.0	70	0	- DBH of a single stem equivalent is calculated based on the area of measured stems (16+9cmØ) at 1.4m above grade for protection setback calculation purposes. RATIONALE: - SEEK APPROVAL FROM THE NEIGHBOURING OWNER TO REMOVE THIS TREE DUE TO EXCESSIVE ROOT LOSS WHICH WILL RESULT FROM PREPARATION FOR INSTALLATION OF THE REQUIRED PEDESTRIAN ACCESS PATHWAY.
732	668	OFF	1	Lilac (<i>Syringa reticulata</i>)	7,8,7	22	Y	8	6	3.0	80	0	
N01	616	OFF	1	Japanese stewartia (<i>Stewartia pseudocamellia</i>)	5	5	N	5	5	1.0	90	0	RATIONALE: GROWING ABOVE CONCRETE RETAINING WALL ON ADJACENT PROPERTY, BEYOND INFLUENCING DISTANCE FROM CONSTRUCTION. ROOT PROTECTION BARRIERS ARE NOT NECESSARY WITHIN THE SUBJECT SITE FOR THIS TREE.
N02	617	OFF	1	Japanese stewartia (<i>Stewartia pseudocamellia</i>)	7	7	N	7	8	3.0	90	0	RATIONALE: GROWING ABOVE CONCRETE RETAINING WALL ON ADJACENT PROPERTY, BEYOND INFLUENCING DISTANCE FROM CONSTRUCTION. ROOT PROTECTION BARRIERS ARE NOT NECESSARY WITHIN THE SUBJECT SITE FOR THIS TREE.
N03	622	OFF	1	Japanese stewartia (<i>Stewartia pseudocamellia</i>)	5	5	N	5	5	1.0	90	0	RATIONALE: GROWING ABOVE CONCRETE RETAINING WALL ON ADJACENT PROPERTY, BEYOND INFLUENCING DISTANCE FROM CONSTRUCTION. ROOT PROTECTION BARRIERS ARE NOT NECESSARY WITHIN THE SUBJECT SITE FOR THIS TREE.



Tag/ID	Survey ID	Loc	# of Trees	Common name, (<i>Botanical</i>)	DBH	DIA BYLAW	Bylaw Y/N	DIA TPZ (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Assessment Findings:
N04	625	OFF	1	Japanese stewartia (Stewartia pseudocamellia)	5	5	N	5	5	1.0	90	0	RATIONALE: GROWING ABOVE CONCRETE RETAINING WALL ON ADJACENT PROPERTY, BEYOND INFLUENCING DISTANCE FROM CONSTRUCTION. ROOT PROTECTION BARRIERS ARE NOT NECESSARY WITHIN THE SUBJECT SITE FOR THIS TREE.
N05	861	OFF	1	Western hemlock (Tsuga heterophylla)	55	55	Y	55	22	6.0	70	0	
N06	860	OFF	1	Western hemlock (Tsuga heterophylla)	50	50	Y	50	22	6.0	70	0	- High crown - suppressed due to proximity and shading from adjacent tree. MITIGATION: - Retention is conditional to maintaining existing grades within the root protection zone. Any hardscape feature requiring excavation fo install should be shifted outside the root protection zone.
N07	859	OFF	1	Hazelnut (Corylus sp.)	9+10+ 10	29	Y	17	8	9.0	50	0	- DBH of a single stem equivalent is calculated based on the area of measured stems (9+10+10cmø) at 1.4m above grade for protection setback calculation purposes. - Approx. 12 stems. - Multiple stems from the root crown with crown over hanging site by ~5.0 m MITIGATION: - Retention is conditional to maintaining existing grades within the root protection zone. Any hardscape feature requiring excavation fo install should be shifted outside the root protection zone.



Tag/ID	Survey ID	Loc	# of Trees	Common name, (<i>Botanical</i>)	DBH	DIA BYLAW	Bylaw Y/N	DIA TPZ (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Assessment Findings:
N08	858	OFF	1	Austrian pine (<i>Pinus nigra</i>)	75	75	Y	75	23	7.0	60	0	Asymmetrical crown to the south. - Co-dependent leaders narrowly attach at ~7.0 m with a bark inclusion. MITIGATION: - Retention is conditional to maintaining existing grades within the root protection zone. Any hardscape feature requiring excavation fo install should be shifted outside the root protection zone.
N09	857	OFF	1	Western redcedar (<i>Thuja plicata</i>)	45,55	100	Y	55	20	6.0	90	0	• DBH of a single stem equivalent is calculated based on the largest of measured stems (45, 55cmø) at 1.4m above grade for protection setback calculation purposes. • Embedded in the crown of adjacent trees, resulting in a sparsely foliated crown - dependent upon adjacent trees for for maintenance of favorable growing conditions. MITIGATION: Retention is conditional to maintaining existing grades within the root protection zone. Any hardscape feature requiring excavation fo install should be shifted outside the root protection zone.



Tag/ID	Survey ID	Loc	# of Trees	Common name, (<i>Botanical</i>)	DBH	DIA BYLAW	Bylaw Y/N	DIA TPZ (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Assessment Findings:
N10	856	OFF	1	Norway maple (<i>Acer platanoides</i>)	80	80	Y	80	16	8.0	90	0	Several historical pruning wounds near base - resulting in large water-filled cavities in the stem. • Bolt embedded in the stem at base. RATIONALE: • REFER CONDITION FINDINGS TO THE NEIGHBOURING OWNER FOR THEIR INFORMATION AND CONSIDERATION FOR FURTHER ASSESSMENT AND TREATMENT AT THE DISCRETION OF THE OWNER. MITIGATION: • Retention is conditional to maintaining existing grades within the root protection zone. Any hardscape feature requiring excavation fo install should be shifted outside the root protection zone.
N11	868-881	OFF	1	Western redcedar (<i>Thuja plicata</i>)	8 to 20	20	Y	20	8	4.0	90	W	• DBH is representative of the largest of measured stems (8 to 20cmø) at 1.4m above grade for protection setback calculation purposes. Crown's extends to a maximum of 4 M into the subject site from tree centre.
N12	882	OFF	1	Douglas-fir (<i>Pseudotsuga menziesii</i>)	75	75	Y	75	25	8.0	90	O	2-3 large branch failures from various heights. • Crown overhangs site by ~6.0 m MITIGATION: • Retention is conditional to maintaining existing grades within the root protection zone. Any hardscape feature requiring excavation fo install should be shifted outside the root protection zone.

Tag/ID	Survey ID	Loc	# of Trees	Common name, (<i>Botanical</i>)	DBH	DIA BYLAW	Bylaw Y/N	DIA TPZ (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Assessment Findings:
N13	N	OFF	1	Douglas-fir (<i>Pseudotsuga menziesii</i>)	100	100	Y	100	25	9.0	90	0	- Asymmetrical crown suppressed on the east side by adjacent trees. MITIGATION: - Retention is conditional to confirmation of tree location via updated topographic survey, and maintaining existing grades within the root protection zone. Any hardscape feature requiring excavation fo install should be shifted outside the root protection zone.
N14	803	OFF	1	Douglas-fir (<i>Pseudotsuga menziesii</i>)	50	50	Y	50	20	8.0	70	0	- lower crown dead, hangers present, asymmetrical crown. - Asymmetrical crown restricted from the west due to proximity and suppression from adjacent trees.
N15	804	OFF	1	Douglas-fir (<i>Pseudotsuga menziesii</i>)	10	10	N	10	8	3.0	90	W	Structurally co-dependent with adjacent trees and forms part of windrow (N15-N19)
N16	805	OFF	1	Douglas-fir (<i>Pseudotsuga menziesii</i>)	25	25	Y	25	20	3.0	90	W	Structurally co-dependent with adjacent trees and forms part of windrow (N15-N19)
N17	807	OFF	1	Douglas-fir (<i>Pseudotsuga menziesii</i>)	40	40	Y	40	20	8.0	90	W	Structurally co-dependent with adjacent trees and forms part of windrow (N15-N19)
N18	808	OFF	1	Douglas-fir (<i>Pseudotsuga menziesii</i>)	15	15	N	15	8	3.0	90	W	Structurally co-dependent with adjacent trees and forms part of windrow (N15-N19)
N19	811	OFF	1	Douglas-fir (<i>Pseudotsuga menziesii</i>)	28	28	Y	28	20	6.0	90	W	Structurally co-dependent with adjacent trees and forms part of windrow (N15-N19)



Tag/ID	Survey ID	Loc	# of Trees	Common name, (<i>Botanical</i>)	DBH	DIA BYLAW	Bylaw Y/N	DIA TPZ (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Assessment Findings:
N20	815	OFF	1	Cherry (Prunus sp.)	50	50	Y	50	5	2.0	0	0	- Fully dead, missing patches of bark and decaying. RATIONALE: - DEAD TREE. SEEK APPROVAL FROM THE NEIGHBOURING OWNER TO REMOVE THIS TREE FOR RISK MITIGATION PURPOSES TO ENABLE WORKER ACCESS DURING CONSTRUCTION.
N21	816	OFF	1	Cherry (Prunus sp.)	55	55	Y	55	4	2.0	0	0	- Fully dead, missing patches of bark and decaying. RATIONALE: - DEAD TREE. SEEK APPROVAL FROM THE NEIGHBOURING OWNER TO REMOVE THIS TREE FOR RISK MITIGATION PURPOSES TO ENABLE WORKER ACCESS DURING CONSTRUCTION.
N22	827	OFF	1	Cherry plum (Prunus cerasifera)	22	22	Y	22	5	5.0	90	0	Stem for is irregular at base with ribs.
N23	N	OFF	1	Lilac (Syringa reticulata)	5,5,5,8 ,8,8,5, 5,5,5,5	18	Y	8	5	5.0	60	0	- DBH is representative of the largest of measured stems (5,5,5,8,8,8,5,5,5,5,5cmø) at 1.4m above grade for protection setback calculation purposes. - Multistem from base. - Asymmetrical crown biased to the north. - Makeshift retaining wall along property line at base. RATIONALE: - SEEK APPROVAL FROM THE NEIGHBOURING OWNER TO REMOVE THIS TREE DUE TO ITS PRE-EXISTING VERY POOR HEALTH (DEAD) AND STRUCTURAL CONDITION FOR RISK MITIGATION PURPOSES.

APPENDIX D: TREE PROTECTION SPECIFICATIONS

1. REFERENCE DOCUMENTS AND CONTACT INFORMATION:

A component of the reference documents includes a Letter of Assurance (LOA) or Letter of Undertaking (LOU) to meet city requirements for arborist supervision during site works, with a mandatory requirement for the owner and their contractor(s) to comply with tree protection measures and specifications. For clarifications and coordination regarding tree protection, please contact this office, acting as **Project Arborist (PA)** for this project:

ARBORTECH CONSULTING (a division of ACL Group) PHONE: 604 275 3484 EMAIL: trees@aclgroup.ca

The following should be read in conjunction with the rest of the reference documents in the most current version of the **Tree Management Report, Drawing, Construction Impact Assessment or other Documents** prepared by this office.

2. TREE PROTECTION PROTOCOLS FOR DESIGN, CONTRACT MANAGEMENT AND CONSTRUCTION MANAGEMENT:

All project consultants must remain updated with the current tree protection specifications as they may be revised from time to time. If project consultant drawings and designs are revised they should be forwarded to this office for review by the PA. Tendering, IFC drawings (architectural, civil, landscape, mechanical, geo-technical, etc.) and construction work plans for all phases of construction (i.e. enabling works, general access/egress, site office, hoarding installation, demolition, ESC, and all site works) should be planned and implemented in accordance with the tree protection specifications herein and as per the reference documents. Any areas or trees that are not identified in these documents and/or where potential conflicts with the TPZ's are identified by the Client will require additional review by the PA in advance of proceeding with those works.

3. TREE LOCATIONS:

Tree locations and other data presented on the tree management drawing (see Appendix C of the reference document) are derived from the project topographical survey. The locations of trees that are not surveyed (if any) may be approximated by the project arborist. Non-surveyed retained or protected trees should be accurately located before any design or construction activity is planned in their proximity.

4. TREE PROTECTION BARRIERS:

Temporary tree protection barriers (fences) must be erected for retained and protected trees as specified on our drawing or adjusted to suit field conditions as approved by the PA. The PA should direct the installation of the barriers to troubleshoot. The PA must inspect and provide a sign off report to meet LOU/LOA specifications (and is required by city where applicable). Where interim barriers are specified, the contractor should be prepared to realign the barrier when and as directed by the PA conditional to certain measures and treatments prescribed by the PA. Where the barrier is aligned with a property line or a proposed design element, the project may require a survey to stake those reference items in advance to enable accurate barrier installation. Signs stating "TREE PROTECTION ZONE - NO ENTRY" must be placed on the tree protection fence at a suitable frequency and as directed by the PA. The contractor, sub-contractors and trades should all be made aware of the tree protection zone restrictions (see below). The barriers must be maintained in good condition at those alignments, and may not be removed or realigned for any reason (including access for workers and especially for landscaping phase), except when prior approval from the PA is obtained.

5. TREE TREATMENT, ENHANCEMENT AND SPECIAL MEASURES:

Prior to or during the course of construction the project is responsible to complete or enable enhancement or remedial tree treatments, and proactive tree protection measures for retained and protected trees that may be specified by the PA from time to time, such as:

- Pruning for risk mitigation, crown restoration, form, building or overhead clearance, and/or sight lines,
- Pre-treatments such as root mapping, vertical aeration, advance root pruning, conversion to soft landscape, etc,
- Installation of soil amender (i.e. mulch) within the **RPZ** to mitigate soil desiccation and to improve soil fertility,
- Interim supplemental watering to compensate for soil hydrology changes,
- Low impact removal of plants or stumps located within a **TPZ** (i.e. stump grinding or cutting with PA supervision),
- Installation of drainage infrastructure along the perimeter of the TPZ to prevent storm water accumulation within,
- Windfirming treatments of new forest edges created by clearing of the development lands, including; re-assessment, tree removals, pruning, modification to wildlife tree, or other treatments as specified by the PA, and
- Installation of interim soil protection and load distribution measures for personnel or equipment access, where feasible.

Note that any PA authorized tree pruning will require on-site direction from the PA and must be completed by a tree service firm employing Arborists who are ISA Certified and TRAQ Qualified in compliance with ANSI A300 and ANSI Z133 Standards. Pruning to reduce the height or size of retained trees (topping or heading) and pruning to excessively raise the crown of a tree CANNOT be undertaken. Pruning of any city, shared or neighbour trees requires consent from tree owner.

6. RESTRICTIONS WITHIN TREE PROTECTION ZONES:

Retained and protected trees must have measures in place to prevent damage being incurred to those trees from site works during all phases of the project. Any access within a TPZ requires advance approval and on-site direction/supervision by the PA, and implementation of measures to be specified by the PA. Except where permitted by the PA, and conditional to certain measures being implement the project shall ensure that there is:

- No soil disturbance of any scope or to any depth, including; over-excavation for working space to construct a design element, cuts or fills for grade transitions, trenches for services/utilities, excavation of any scope including overburden stripping and

- deeper excavations (i.e. buildings, retaining walls, sidewalks, patios, planting holes for new trees or plants, etc),
- No passage or operation of equipment, machinery, trucks, vehicles of any size or type (whether on tracks or tires),
- No storage of materials, soil, gravel, construction supplies, materials, excavation spoil, waste, etc.,
- No accumulation of storm water or standing water conditions,
- No waste or washing of concrete, stucco, drywall, paint, or other chemicals or materials that are deleterious to soil or roots,
- No placement of temporary structures, services or utilities,
- No affixing lights, signs, cables or any other devices to tree parts (i.e. trunk or branches),
- No pruning or cutting of any part of a retained tree,
- No landscape finishing, except certain planned landscape works that have prior approval and scheduled supervision by the PA.

7. DEMOLITION OR PRE-CONSTRUCTION OPERATIONS:

Municipalities vary in whether they will approve tree removals at the demolition phase. In cases where a tree removal or cutting permit is not issued in conjunction with the demolition or other pre-construction site works, there may be a need to obtain an early tree permit to remove risk trees from pre-existing defects or that will be made high risk from unavoidable demolition impacts. Certain areas of work may require low impact methods of work by the contractor. Tree protection barriers may also need to be realigned after those works. The contractor must coordinate with the PA to review, plan and direct those works accordingly.

8. TREE REMOVAL/CLEARING OPERATIONS:

Tree removal or cutting permits (where applicable) including tree owner consent for city or neighbour trees, must be issued before commencing tree removal or clearing works. A copy of these documents must be provided to the PA for our review and reference. A pre-work meeting with the PA is strongly recommended to review their work plan, mark/identify retained trees, identify removal trees requiring low impact methods or measures, and to ensure contractor compliance with the tree protection specifications. Note that certain trees requiring removal may not be shown or referenced on the drawing or documents prepared by this office (i.e. undersize or non-bylaw trees or untagged trees assessed in groups in our documentation). For the removal of any trees that are located in proximity of overhead power lines, the contractor is required to retain a Certified Utility Arborist (CUA) to determine appropriate measures from the utility company.

9. CONSTRUCTION OPERATIONS:

The contractor (project manager/site superintendent and/or other key personnel) should be apprised of the LOA/LOU, and are encouraged to schedule a tree protection specific pre-construction meeting with the PA to; review IFC drawings, establish communication and procedural protocols, review responsibilities for tree protection measures at specific milestones of the project and identify and resolve any anticipated tree protection related constructability challenges. While we strive to be as comprehensive as possible in our tree protection planning, it is acknowledged that certain unpredictable construction conflicts with a TPZ may arise. Any proposed encroachment into a TPZ and/or changes to the tree retention scheme are subject to approval in advance by the PA and the municipality (where applicable). Certain measures required for tree protection compliance related to construction work in the **CPZ** or within an **RPZ** may be required in order to accommodate PA accepted and managed encroachments into a **TPZ**, such as but not limited to:

- Undertaking root mapping by the PA,
- Armouring the soil within the **RPZ** to accommodate temporary worker or equipment passage,
- Utilizing low impact trenching via air-vac or hydro-vac with air spade assistance, by the PA or with PA supervision, to accommodate underground services or utilities. Feasibility of these measures is limited based on PA review of; the intended scope of work, duration of encroachment, type of equipment or access, proximity to a tree, scope of pruning that may be necessary, width/depth of trenching and related shoring needs, tree species, site/soil conditions and other factors.

10. LANDSCAPING OPERATIONS:

A pre-landscape meeting between the landscape contractor and the PA is required to review their work plan relative to retained/protected trees in advance of the removal of the tree barriers. The operation of equipment of any size or type, the placement of growing medium, all grading and site preparation for permitted hard landscape features within a TPZ (i.e. sidewalks and patios), site preparation for retaining walls and footings, excavation for fences, signs and other landscape features, digging of planting holes for new plants and trees, the digging of trenches for irrigation, drainage and lighting infrastructure, and the placement of soft landscape finishing, are all activities that have high potential for causing damage to trees, roots or soil. Advance of PA attendance concurrent with certain activities, are necessary in order to avoid tree protection non-compliance and bylaw issues.



APPENDIX E: LETTER OF UNDERTAKING

PROOF OF CONTRACT FOR ARBORIST ASSISTANCE DURING CONSTRUCTION

ISSUANCE DATE: **July 14, 2023**

ACL FILE: **23121**

ISSUED TO: **Kiegan Scharnberg**

SUBJECT SITE: **3295, and 3333 Commercial Drive, Vancouver
Proposed Multi-Family Development**

REF DOC.'S: **Arborist Report (including all appendices) prepared by this office (most current version)**

Pursuant to city bylaws and/or policies; a duly executed copy of this Letter of Assurance (LOA) serves as confirmation that ACL Group Enterprises Ltd (the "Consultant"), is retained under contract to the **Owner** (the "Client") as **Project Arborists** (the "PA") to provide arboricultural consulting and field services for the duration of the site preparation and construction phase at the above noted project to assist the Client in remaining compliant with the tree protection requirements.

By signing below, the owner and their prime or general contractor agree to the responsibilities associated with fully implementing the Tree Protection Zones (TPZ) and related restrictions and measures, and to;

- furnish this office with IFC drawings and the construction logistics plan for pre-mobilization review,
- notify the PA of any mobilizations to the site with a minimum of two weeks advance notice,
- notify the PA in advance of any potential tree protection conflicts with construction work to resolve those proactively,
- ensure that the PA is provided 3 business days advance notice for attendance by the PA at required times,
- comply with any PA directed/supervised adjustments to the construction work, including implementing the use of low impact materials and methods, and conformance with arboricultural standards and best management practices,
- facilitate any remedial work or treatments that may be prescribed or required by the PA or the city,
- pay all costs associated with tree protection compliance measures or treatments, including any non-compliance penalties and remediation treatments required thereof,
- schedule an inspection by the PA at substantial completion of the project to enable final signoff of tree protection compliance (required for final or occupation permits to be issued by city and for tree protection bond release), and
- pay all fees of the Consultant at our current hourly rates, including portal to portal travel, on net 30 terms;

	Owner:	Prime or General Contractor:	Project Arborist:
Authorized Signature:			
Date Signed:			July 14, 2023
Name:			Nick McMahon
Company:			ACL Group
Phone:			General: 604-275-3484 ext 101
Email:			General: trees@aclgroup.ca

TREE PROTECTION – STANDARD SUPERVISION REQUIREMENTS:

The Client and their Contractor(s) are responsible to maintain the tree protection compliance through the entire construction



term, and to arrange attendance of the PA to the site prior to and during certain work activities, generally as follows:

A. Barrier Installation:

To direct and inspect the tree protection barrier installation to our specifications and provide a barrier sign-off report.

B. Pre-Treatment of Trees:

To undertake or direct tree treatments (i.e. pruning, enhancements to the growing site, interim watering program and special measures) to prepare the trees and assist them in sustaining and adapting to the rigours of construction.

C. Pre-Construction:

To meet with the contractor in advance of any mobilization to the site to plan our on-site assistance to direct/supervise pre-construction works in and around TPZ's, such as but not limited to:

- site access and egress and installation of temporary power, site hoarding, site office or other infrastructure,
- service and utility decommissioning,
- demolition of structures or hardscapes,
- installation of ESC or stormwater management infrastructure,
- invasive plant controls, treatments or management,
- site clearing and tree removal including identification of retention trees and direction of low impact removal of trees, vegetation and stumps within the TPZ's as well as to reinspect retained trees after clearing for condition,
- preloading or site grading (as applicable), and
- installation of site hoarding, site office and temporary power.

D. Construction Phase:

To attend and assist with specific activities within or in close proximity of a TPZ to review design details that the Client deems may present conflicts with a TPZ, to assist in resolving project constructability challenges, to direct or undertake low impact methods of certain planned works, to implement the use of low impact materials, and/or to perform root pruning and to direct tree and root protection, concurrent with the following:

- on a regular monthly schedule or at an interval determined by the PA relative to the construction progress and activities,
- at any time when access within a CRZ, RPZ or CPZ is planned or executed,
- site grading (cuts or fills),
- excavations,
- trenching or overhead works related to services and utility installation,
- forming and concrete placing,
- scaffolding, craning or manlift operation,
- framing and building envelope finishing,
- all landscape works (see below), and
- at certain times as identified in the Special Measures section (see below).

E. PRIOR TO REMOVING BARRIERS – Landscape Finishing:

To review landscape drawings and subcontractor work plan including TPZ related limitations on methods and materials in advance of commencing those works and to provide on-site direction and guidance for the associated preparation works and construction of PA approved hardscape and soft landscape elements including but not limited to:

- sidewalks/paths,
- patios/decks/benches,
- retaining walls,
- fencing,
- irrigation/electrical conduit
- soil placement/plantings and grass/turf installation.

Note that certain landscape features may be excluded, may require an arboricultural aeration system, or will be limited to specific materials and methods that meet tree and root protection requirements. Planting of any plants, shrubs or hedges within a TPZ is restricted to small pot sizes such as "4 inch" and "#1", but these may vary depending on tree species and proximity to the tree. The "pocket planting" standards will apply via minimizing planting hole size, limited digging into existing grade to avoid damage to woody roots, and backfilled with minimal addition of growing medium.

F. Documentation:

To provide site review reports at certain milestones issued to; the owner/developer, the general contractor and the prime consultant, during the construction phase. Note that if non-compliance is observed, the PA is required by the city to report the non-compliance to them in the form of an impact and mitigation assessment which may require investigative work by the PA. A final sign off at substantial completion of the project is required.

TREE PROTECTION – SPECIFIC MEASURES:

The following items within a TPZ require PA direction, treatment or supervision/monitoring. See the Tree Management



Drawing for additional references to locations where special measures are required.

1. Tree #s 728, N05, N06 – Tree Removal or Land Clearing Operations:
The tree removals, land clearing and/or stump removals within or in close proximity to a TPZ require on-site supervision and direction to ensure that the contractor implements low impacts methods for those operations, and to ensure retained trees are protected adequately.
2. TREE # N07, N08, N12, and N22 – Root Pruning for Site Excavation:
The PA must be on site concurrently with the excavation adjacent to the tree protection zone to identify tree roots, provide root protection measures and/or undertake root pruning treatments as necessary.