DIAMOND HEAD
3559 Commercial Street
Vancouver, BC 604.733.4886

ARBORIST MEMO

July 23, 2018

Fauzia Suleman
UBC PROPERTIES TRUST
Suite 200 - 3313 Shrum Lane, Vancouver BC V6S 0C8

Re: Arborist reporting for tree management at UBC Lot 8 – Ivy on the Park.

Diamond Head Consulting Ltd. (DHC) was asked by Wall Financial to provide arborist consulting services for the proposed development at UBC Lot 8, known as 'Ivy on the Park'. We have previously prepared an arborist report, a tree management plan, and a tree transplantation plan.

On **July 23, 2018,** we have updated our arborist report and tree plan.

Updates include:

- The inclusion of 17 additional trees to our original submission; those that will be affected by the construction of an off-site, temporary access road north of the site.
- The arborist report and tree management plan have been harmonized to identify those trees which will be:
    - Removed (cut down)
    - Relocated permanently offsite
    - Relocated temporarily and returned to the site

Trees to be retained	12
Trees to be removed	7
Trees to be relocated permanently	23
Trees to be relocated temporarily	18
Total number of trees affect by the projects	60

Final remarks:

The majority of trees around the site will be affected by the construction of Ivy on Park, mostly due to the requirements of construction access, concrete pumping, and materials staging. Those trees that can be reasonably retained will be protected. Most trees that conflict with the project are relatively young and vigorous, and are well suited to being transplanted. The larger trees will be relocated permanently to minimize the stress of transplanting. The smaller individuals will be less sensitive and may tolerate being stored for a period and returned to the site. Note that storage locations, relocation efforts and replanting locations will be managed by others.

One mature tree to be retained has been added to the inventory. 8136 is a Western redcedar that was retained as part of the neighbouring development. The tree may have been damaged by past construction activities, but is one of the better individuals in an otherwise poor stand. Successful retention of this tree will require special protection efforts including: arborist supervision of access road preparation, protecting the root zone from traffic by placing a steel plate over 15-20cm of wood mulch, the installation of tree protection barriers, and the maintenance of irrigation to the greenway area.

Successful tree management on this project will require:

- A skilled and well-equipped tree mover
- Consistent follow-up and maintenance of relocated trees
- Installation of tree protection fencing and root zone protection where required
- See arborist report for additional tree retention details and recommendations.

Sincerely,

Project Staff:

Michael Harrhy, B.Sc., MSFM
ISA Certified Arborist (PN-8025A)
ISA Qualified Tree Risk Assessor (TRAQ)
Forester in Training
Biologist in Training

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Insurance Information:

WCB: # 657906 AQ (003)
General Liability: Northbridge General Insurance Corporation - Policy #CBC1935506, $10,000,000
Errors and Omissions: Lloyds Underwriters – Policy #1010615D, $1,000,000

Limiting Conditions:

1) Our investigation is based solely on visual inspection of the trees during our last site visit.
2) This report does not provide any estimates to implement the proposed recommendations provided in this report.
3) Unless expressly set out in this report or these Assumptions and Limiting Conditions, Diamond Head Consulting Ltd. ("Diamond Head") makes no guarantee, representation or warranty (express or implied) regarding this report, its findings, conclusions or recommendations contained herein, or the work referred to herein.
4) The work undertaken in connection with this report and preparation of this report have been conducted by Diamond Head for the "Client" as stated in the report above. It is intended for the sole and exclusive use by the Client for the purpose(s) set out in this report. Any use of, reliance on or decisions made based on this report by any person other than the Client, or by the Client for any purpose other than the purpose(s) set out in this report, is the sole responsibility of, and at the sole risk of, such other person or the Client, as the case may be. Diamond Head accepts no liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm (including without limitation financial or consequential effects on transactions or property values, and economic loss) that may be suffered or incurred by any person as a result of the use of or reliance on this report or the work referred to herein. The copying, distribution or publication of this report (except for the internal use of the Client) without the express written permission of Diamond Head (which consent may be withheld in Diamond Head's sole discretion) is prohibited. Diamond Head retains ownership of this report and all documents related thereto both generally and as instruments of professional service.
5) The findings, conclusions and recommendations made in this report reflect Diamond Head's best professional judgment given the information available at the time of preparation. This report has been prepared in a manner consistent with the level of care and skill normally exercised by arborists currently practicing under similar conditions in a similar geographic area and for specific application to the trees subject to this report on the date of this report. Except as expressly stated in this report, the findings, conclusions and recommendations it sets out are valid for the day on which the assessment leading to such findings, conclusions and recommendations was conducted. If generally accepted assessment techniques or prevailing professional standards and best practices change at a future date, modifications to the findings, conclusions, and recommendations in this report may be necessary. Diamond Head expressly excludes any duty to provide any such modification if generally accepted assessment techniques and prevailing professional standards and best practices change.
6) Conditions affecting the trees subject to this report (the "Conditions", include without limitation, structural defects, scars, decay, fungal fruiting bodies, evidence of insect attack, discoloured foliage, condition of root structures, the degree and direction of lean, the general condition of the tree(s) and the surrounding site, and the proximity of property and people) other than those expressly addressed in this report may exist. Unless otherwise stated information contained in this report covers only those Conditions and trees at the time of inspection. The inspection is limited to visual examination of such Conditions and trees without dissection, excavation, probing or coring. While

every effort has been made to ensure that any trees recommended for retention are both healthy and safe, no guarantees, representations or warranties are made (express or implied) that those trees will not be subject to structural failure or decline. The Client acknowledges that it is both professionally and practically impossible to predict with absolute certainty the behavior of any single tree, or groups of trees, in all given circumstances. Inevitably, a standing tree will always pose some risk. Most trees have the potential for failure and this risk can only be eliminated if the risk is removed. If Conditions change or if additional information becomes available at a future date, modifications to the findings, conclusions, and recommendations in this report may be necessary. Diamond Head expressly excludes any duty to provide any such modification of Conditions change or additional information becomes available.

7) Nothing in this report is intended to constitute or provide a legal opinion and Diamond Head expressly disclaims any responsibility for matters legal in nature (including, without limitation, matters relating to title and ownership of real or personal property and matters relating to cultural and heritage values). Diamond Head makes no guarantee, representation or warranty (express or implied) as to the requirements of or compliance with applicable laws, rules, regulations, or policies established by federal, provincial, local government or First Nations bodies (collectively, "Government Bodies") or as to the availability of licenses, permits or authorizations of any Government Body. Revisions to any regulatory standards (including by-laws, policies, guidelines an any similar directions of a Government Bodies in effect from time to time) referred to in this report may be expected over time. As a result, modifications to the findings, conclusions and recommendations in this report may be necessary. Diamond Head expressly excludes any duty to provide any such modification if any such regulatory standard is revised.

8) Diamond Head shall not be required to give testimony or to 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.

9) In preparing this report, Diamond Head has relied in good faith on information provided by certain persons, Government Bodies, government registries and agents and representatives of each of the foregoing, and Diamond Head assumes that such information is true, correct and accurate in all material respects. Diamond Head accepts no responsibility for any deficiency, misinterpretations or fraudulent acts of or information provided by such persons, bodies, registries, agents and representatives.

10) 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.

11) Loss or alteration of any part of this report invalidates the entire report.

Arboricultural Inventory and Report

For:
Wall Financial Corporation

Site Location:
Lot 8 UBC South Campus

To be submitted with Tree Retention and Removal Plan dated: July 23, 2018

Submitted to:
Edmund Siqueira, P.Eng.
Head of Construction

Date: December 18, 2017; revised March 7, 2018; June 6, 2018; July 23, 2018

Submitted by:

DIAMOND HEAD
3559 Commercial Street
Vancouver, BC 604.733.4886

SAFE CERTIFIED

The following Diamond Head Consulting staff either performed the site visit and/or reviewed the report.

All general and professional liability insurance and individual accreditations have been provided below for reference.

Supervisor:

Trevor Cox, MCIP

ISA Certified Arborist (PN-1920A)

ISA Qualified Tree Risk Assessor (TRAQ)

Project Staff:

Michael Harrhy, B.Sc., MSFM

ISA Certified Arborist (PN-8025A)

ISA Qualified Tree Risk Assessor (TRAQ)

If there are any questions or concerns about the contents of this report, please contact us at any time.

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Errors and Omissions: Lloyds Underwriters – Policy #1010615D, $1,000,000

Scope of Assignment:

Diamond Head Consulting Ltd. (DHC) was retained to complete an arboricultural assessment to supplement the proposed development application for Lot 8 in UBC's south campus community. This report contains an inventory of protected on and off-site trees and summarizes management recommendations with respect to future development plans and construction activities. As per development guidelines, trees greater than 15cm DBH and replacement trees were inventoried. Off-site trees are included because pursuant to municipal by-laws, site owners must include the management of off-site trees that are within the scope of the development. This report is produced with the following primary limitations, detailed limitations specified in Appendix 7:

1) Our investigation is based solely on visual inspection of the trees during our last site visit. This inspection is conducted from ground level. We do not conduct aerial inspections, soil tests or below grade root examinations to assess the condition of tree root systems unless specifically contracted to do so.

2) Unless otherwise stated, tree risk assessments in this report are limited to trees with a *high* or *extreme* risk rating in their current condition, and in context of their surrounding land use at the time of assessment.

3) The scope of work is primarily determined by site boundaries and local tree-related bylaws. Only trees specified in the scope of work were assessed.

4) Beyond six months from the date of this report, the client must contact DHC to confirm its validity because site base plans and tree conditions may change beyond the original report's scope. Additional site visits and report revisions may be required after this point to ensure report accuracy for the municipality's development permit application process. Site visits and reporting required after the first submission are not included within the original proposal fee and will be charged to the client at an additional cost.

The client is responsible for:

- Reviewing this report to understand and implement all tree removal and protection requirements related to the project.
- Obtaining a tree removal permit from the relevant municipal authority prior to any tree cutting.
- Obtaining relevant permission from adjacent property owners before removing off-site trees and vegetation.
- Obtaining a timber mark if logs are being transported offsite.
- Ensuring the project is compliant with the tree permit conditions.
- Constructing and maintaining tree protection fencing.
- Ensuring an arborist is present onsite to supervise any works in or near tree protection zones.

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Introduction

1.1 Site Overview

The subject site is located at the intersection of Binning Road and Birney Avenue in UBC's south campus neighborhood. The site is currently a treeless lot being used as a temporary parking area for construction. All trees inventoried are found off-site along the margins of the proposed development.

Inventoried trees are predominantly young, vigorous replacement trees found on the boulevard and within the landscaped areas of adjacent developments. Species include Katsura (*Cercidiphyllum japonicum*), along Binning road; red maples (*Acer rubrum*) along Birney Ave; and a mix of Douglas fir (*Pseudotsuga menziesii*), Western redcedar (*Thuja plicata*), and *Magnolia* within adjacent developments. A stand of retained western redcedar found within the greenway north of the subject site was identified and found to be in very poor condition due to past construction impacts.

1.2 Proposed Land Use Changes

The proposed development at Lot 8 includes a high-rise tower and a townhome development. An underground parking garage will occupy almost the entire footprint of the site. A sidewalk will be constructed on Birney Ave. A temporary construction access road will be constructed north of the subject site.

1.3 Report Objective

This report has been prepared to ensure the proposed development is compliant with UBC's development guidelines. It outlines the existing condition of the trees on and adjacent to the property, summarizes the proposed tree retention and removal, and suggests guidelines for protecting retained trees during the construction process.

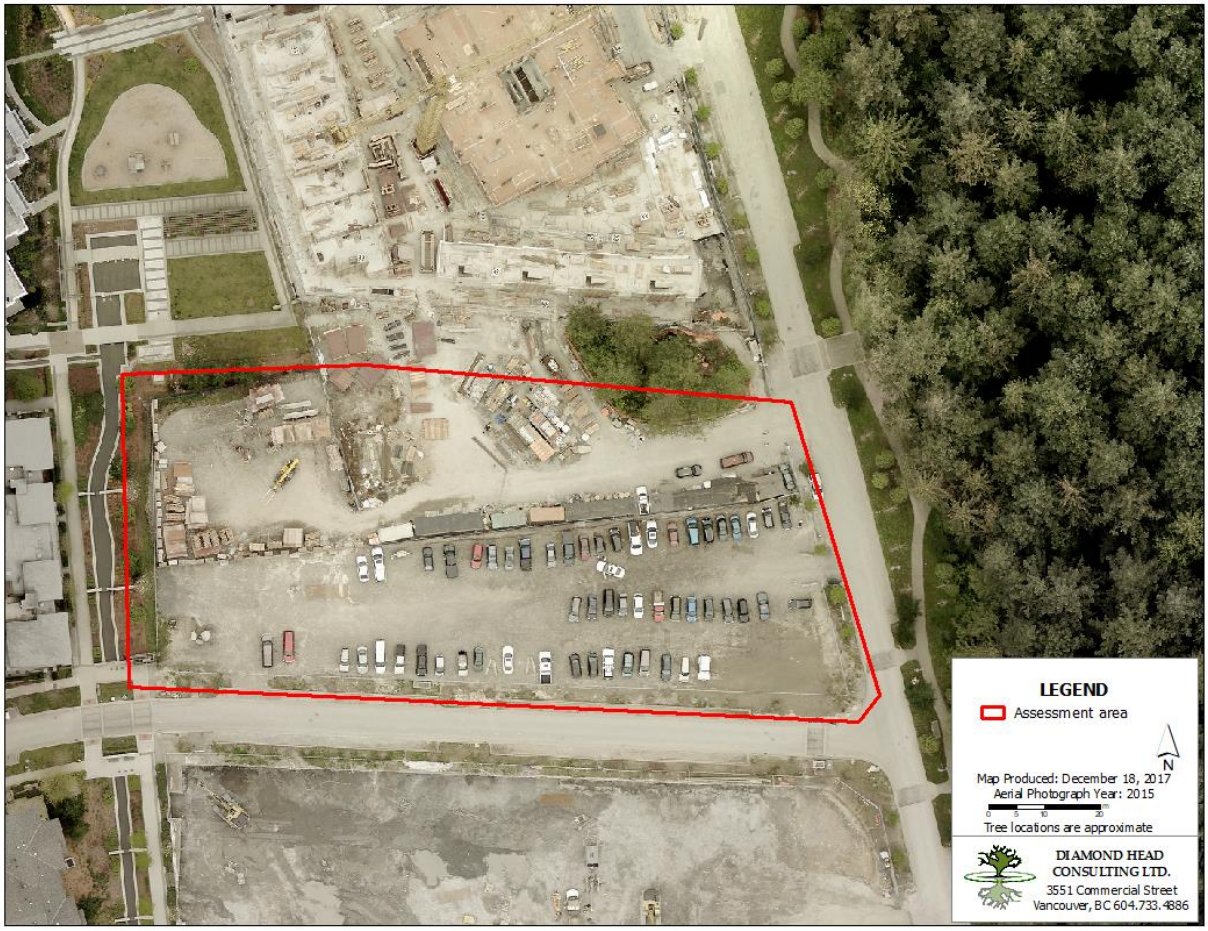


Figure 1. UBC Lot 8 in context of the surrounding landscape and infrastructure.

2.0 Process and Methods

Michael Harrhy of DHC visited the site on December 18, 2017, and again on June 2, 2018. The following standards and methodologies are used throughout the development of this report.

2.1 Tree Inventory Methods

Trees on the site and trees shared with adjacent properties were marked with a numbered tag and assessed for attributes including: species, diameter at breast height (dbh) measured to the nearest 1 cm at 1.4 m above grade, and height to the nearest meter. The general health and structural integrity of each tree was assessed visually. Based on this assessment trees were assigned to one of five categories: *excellent, good, moderate, poor, or dying/dead*. Descriptions of the health and structure rating criteria can be found in Appendix 3.

2.2 Tree Risk Assessment Methods

Tree risk assessments were completed following methods of the ISA Tree Risk Assessment Manual[1] published in 2013 by the International Society of Arboriculture, which is the current industry standard for assessing tree risk. This methodology assigns risk based on the likelihood of failure, the likelihood of impact and the severity of consequence if a failure occurs. Only on-site hazard trees that had *high* or *extreme* risk ratings in their current condition and in context of their surrounding land use were identified and reported in section 3.2. Appendix 5 gives the likelihood and risk rating matrices used to categorize tree risk. DHC recommends that on-site trees be re-assessed for risk after the site conditions change (e.g. after damaging weather events, site disturbance from construction, creation of new targets during construction or in the final developed landscape).

2.3 Tree Retention and Replacement

Retention suitability ratings categorized as *high, medium, low, or nil* were assigned to each tree or group of trees, based on their health and structure rating and potential longevity in a developed environment. Descriptions of the retention suitability ratings can be found in Appendix 4. Recommendations for tree retention or removal were determined by taking in to account a tree's retention suitability rating, its location in relation to proposed building envelopes and development infrastructure. Critical root zones were calculated for each tree based on 6 times the diameter of the tree at breast height.

[1] Dunster, J.A., Smiley, E.T., Matheny, N. and Lilly, S. (2013). Tree Risk Assessment Manual. *International Society of Arboriculture*. Champaign, Illinois.

3.0 Findings: Tree Inventory and Risk Assessment

3.1 Tree Inventory

A total of 60 trees were identified in the tree inventory. 38 of those were found off-site, within the landscaped areas of adjacent developments. 22 are recently-planted street trees. With a couple of exceptions, especially the 6 mature cedars north of the subject site, trees within landscaped areas appear very vigorous and in good condition due to good soils and irrigation. Katsuras on Binning Ave are well established in the boulevard. Red maples on Birney Ave are incompletely planted; the boulevard lacks topsoil and the existing soils are very poor and compacted. Because of exposed root balls and roots, these trees are vulnerable to drought.

Table 1: Summary of the tree inventory from UBC Lot 8 containing the number of trees categorized by species and the recommended number to be retained or removed. The complete tree inventory is given in Appendix 1.

	Existing	Remove	Retain	Relocate-Permanently	Relocate Temporarily
Deciduous					
Katsura	7		5	2	
Magnolia	6		1	2	3
Red Maple	20		1	8	11
Japanese maple	2			1	1
Vine maple	2				2
Beech	1				1
Coniferous					
Douglas-fir	6	1	1	4	
Western Redcedar	16	6	4	6	
Total	**60**	**7**	**12**	**23**	**18**

Tree Risk Assessment

Table 2: Summary of hazard trees that posed a *high* or *extreme* risk **at the time of assessment**. These had a probable or imminent likelihood of failure and can impact an existing target with significant or severe consequences. Their risk rating, recommended remedial actions and residual risk ratings are given.

Tree		Target		Likelihood			Consequences	Risk Rating	Action	Residual Risk
Number	Defect of Concern	Code	Proximity to tree base (m)	Failure	Impact	Failure & Impact				
8123	Root plate failure / Uncorrected lean	1	~15	Probable	High	Likely	Significant	High	Remove tree	None
8123	Root plate failure / Uncorrected lean	2	~15	Possible	Low	Unlikely	Severe	Low		

Target Codes

1 Vehicles within temporary parking lot: frequent occupancy

2 Persons within parking lot: occasional occupancy

4.0 Tree Removal and Retention

A group of five cedars north of the subject site are recommended for removal based on their condition and conflicts with the proposed project. 52 of the 60 trees within the scope of work of trees will need to be removed or relocated. 8 can be retained.

Successful retention or protected trees will require a tree protection barrier to be constructed along the western property line of the site.

Tree 8136, a mature cedar north of the work area can be retained if its root zone is adequately protected from traffic using the temporary access road. Use of a steel plate over 10-15cm of wood mulch across the entire root zone is ideal.

5.0 Summary and Conclusions

The majority of inventoried trees will require removal or relocation to accommodate construction staging and a temporary access road to the north of the site. Except for a group of mature cedars northeast of the site and several other trees in poor health, most trees on the site are suitable for relocation.

Larger trees that can be relocated but which are less tolerant of disturbance that will be moved offsite permanently. Those smaller trees that are more tolerant of transplanting stress will be relocated temporarily and brought back to the site.

Arborist supervision is required during excavation/ shoring of the western wall, and to ensure the roots of tree 8136 are adequately protected from the proposed access road.

Appendices

Appendix 1 Complete Tree Inventory Table

The complete tree inventory below contains information on tree attributes and recommendations for removal or retention. Tree ownership in this inventory table is not definitive, its determination here is based on information available from the legal site survey, GPS locations, and field assessment during site visits. Critical root zones are measured from the outer edge of a tree's stem. If using these measurements for mapping the critical root zone, ½ the tree's diameter must be added to the distance to accommodate a survey point at the tree's center.

Tree #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Health and Condition Rating	Comments	Retention Value Rating	Retain/ Remove	Tree Retention Comments	CRZ
164	Magnolia	*Magnolia sp.*	7	5	Normal	Young tree. Good condition. Great candidate for relocation.	High	Relocate temporarily	In conflict with temporary site access.	1
164	Magnolia	*Magnolia sp.*	7	5	Normal	Young tree. Good condition. Great candidate for relocation.	High	Relocate temporarily	In conflict with temporary site access.	1
165	Beech	*Fagus sylvatica*	5	6	Normal	Young tree. Good condition. Great candidate for relocation.	High	Relocate temporarily	In conflict with temporary site access.	1
166	Red Maple	*Acer rubrum*	19	14	Moderate	Fastigiate form. Chlorotic foliage. Root collar buried with excessive mulch.	High	Relocate permanently	In conflict with temporary site access.	2
167	Western Redcedar	*Thuja plicata*	13	6	Moderate	Open grown. Conical form. Better vigour than 168, but does not appear to be thriving. Root collar buried.	Medium	Relocate permanently	In conflict with temporary site access.	2
168	Western Redcedar	*Thuja plicata*	13	6	Poor	Thin, stressed crown. Cause unknown. Lacks vigour required to tolerate relocation.	Low	Remove	In conflict with temporary site access.	2

Tree #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Health and Condition Rating	Comments	Retention Value Rating	Retain/ Remove	Tree Retention Comments	CRZ
169	Western Redcedar	*Thuja plicata*	20	6	Normal	Open grown. Conical form. Vigorous	High	Relocate permanently	In conflict with temporary site access.	2
170	Red Maple	*Acer rubrum*	17	14	Moderate	Fastigiate form. Appears vigorous . Root collar buried with excessive mulch.	High	Relocate permanently	In conflict with temporary site access.	2
171	Red Maple	*Acer rubrum*	17	14	Moderate	Fastigiate form. Appears vigorous . Root collar buried with excessive mulch.	High	Relocate permanently	In conflict with temporary site access.	2
172	Red Maple	*Acer rubrum*	17	14	Moderate	Fastigiate form. Appears vigorous . Root collar buried with excessive mulch.	High	Relocate permanently	In conflict with temporary site access.	2
173	Western Redcedar	*Thuja plicata*	16	6	Normal	Open grown. Conical form. Vigorous	High	Relocate permanently	In conflict with temporary site access.	2
174	Western Redcedar	*Thuja plicata*	14	6	Normal	Open grown. Conical form. Vigorous	High	Relocate permanently	In conflict with temporary site access.	2
175	Western Redcedar	*Thuja plicata*	15	6	Normal	Open grown. Conical form. Vigorous	High	Relocate permanently	In conflict with temporary site access.	2
176	Japanese maple	*Acer palmatum*	10	3	Normal	DBH estimated. Recently planted and somewhat well established tree. Good candidate for relocation.	High	Relocate temporarily	In conflict with temporary site access.	1
177	Vine maple	*Acer circinatum*	7	3	Normal	DBH estimated. Recently planted and somewhat well established tree. Good candidate for relocation.	High	Relocate temporarily	In conflict with temporary site access.	1
178	Vine maple	*Acer circinatum*	7	3	Normal	DBH estimated. Recently planted and somewhat well established tree. Good candidate for relocation.	High	Relocate temporarily	In conflict with temporary site access.	1

Tree #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Health and Condition Rating	Comments	Retention Value Rating	Retain/ Remove	Tree Retention Comments	CRZ
179	Western Redcedar	*Thuja plicata*	14	6	Normal	Open grown. Conical form. Vigorous	High	Relocate permanently	In conflict with temporary site access.	2
180	Magnolia	*Magnolia sp.*	8	5	Normal	Young tree. Good condition. Great candidate for relocation.	High	Relocate temporarily	In conflict with temporary site access.	2
453	Western Redcedar	*Thuja plicata*	36	12	Poor	Smaller intermediate. Stressed crown. Root zone paved to north. Irrigation and mulch, the standard treatment prescriptions, have already been installed. Monitoring or removal are the only options. Questionable stability if retained alone.	Low	Remove	This tree is in decline and lacks the structure to tolerate being retained alone following removal of larger cedars adjacent.	2.2
454	Western Redcedar	*Thuja plicata*	45	16	Poor	Asymmetrical crown to the southeast. Decent form. Stressed crown suggest construction damage. New plantings and irrigation in root zone. Irrigation and mulch, the standard treatment prescriptions, have already been installed. Monitoring or removal are the only options.	Low	Remove	This tree is in decline and lacks the structure to tolerate being retained alone following removal of larger cedars adjacent.	2.7
455	Katsura	*Cercidiphyllum japonicum*	12	5	Normal	The northernmost street tree. Typical form, good vigour. Wide boulevard. Appears to have utility lines and conduit within root zone. NOT RECOMMENDED FOR TRANSPLANT due to risk of damaging underground infrastructure.	High	Relocate permanently	In conflict with proposed entrance to parkade.	2
456	Katsura	*Cercidiphyllum japonicum*	11	5	Normal	New street tree. Typical form, good vigour. Wide boulevard. Has transplant potential.	High	Relocate permanently	In conflict with proposed entrance to parkade.	2
457	Katsura	*Cercidiphyllum japonicum*	10	5	Normal	New street tree. Typical form, good vigour. Narrow boulevard. Has transplant potential.	High	Retain	Protect with tree protection fencing as per attached plan. Soil moisture can be maintained with a tree gator.	2

Tree #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Health and Condition Rating	Comments	Retention Value Rating	Retain/ Remove	Tree Retention Comments	CRZ
458	Katsura	*Cercidiphyllum japonicum*	10	5	Normal	New street tree. Typical form, good vigour. Narrow boulevard. Has transplant potential.	High	Retain	Protect with tree protection fencing as per attached plan. Soil moisture can be maintained with a tree gator.	2
459	Katsura	*Cercidiphyllum japonicum*	11	5	Normal	New street tree. Typical form, good vigour. Wide boulevard. Has transplant potential.	High	Retain	Protect with tree protection fencing as per attached plan. Soil moisture can be maintained with a tree gator.	2
460	Katsura	*Cercidiphyllum japonicum*	11	5	Normal	New street tree. Typical form, good vigour. Wide boulevard. Has transplant potential.	High	Retain	Protect with tree protection fencing as per attached plan. Soil moisture can be maintained with a tree gator.	2
461	Katsura	*Cercidiphyllum japonicum*	11	5	Normal	New street tree. On corner of Binning and Birney. Typical form, good vigour. Wide boulevard. Has transplant potential.	High	Retain	Protect with tree protection fencing as per attached plan. Soil moisture can be maintained with a tree gator.	2
462	Red Maple	*Acer rubrum*	8	4	Moderate	Recently planted street tree. Planted "proud", though root collar appears level with top of curb. Some exposed roots. Vulnerable to desiccation in summer	High	Relocate temporarily	In conflict with concrete pour and pump setup, construction staging.	1
463	Red Maple	*Acer rubrum*	8	4	Moderate	Recently planted street tree. Planted "proud", though root collar appears level with top of curb. Some exposed roots. Vulnerable to desiccation in summer	High	Relocate temporarily	In conflict with concrete pour and pump setup, construction staging.	1
464	Red Maple	*Acer rubrum*	7	4	Moderate	Recently planted street tree. Planted "proud", though root collar appears level with top of curb. Some exposed roots. Vulnerable to desiccation in summer	Medium	Relocate temporarily	In conflict with concrete pour and pump setup, construction staging.	1
465	Red Maple	*Acer rubrum*	7	4	Moderate	Recently planted street tree. Planted "proud", though root collar appears level with top of curb. Some exposed roots. Vulnerable to desiccation in summer	Medium	Relocate permanently	In conflict with concrete pour and pump setup, construction staging, and curb-let downs for drop-off.	1
466	Red Maple	*Acer rubrum*	7	4	Moderate	Recently planted street tree. Planted "proud", though root collar appears level with top of curb. Some exposed roots. Vulnerable to desiccation in summer	Medium	Relocate permanently	In conflict with concrete pour and pump setup, construction staging, and curb-let downs for drop-off.	1

Tree #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Health and Condition Rating	Comments	Retention Value Rating	Retain/ Remove	Tree Retention Comments	CRZ
467	Red Maple	*Acer rubrum*	7	4	Moderate	Recently planted street tree. Planted "proud", though root collar appears level with top of curb. Some exposed roots. Vulnerable to desiccation in summer	Medium	Relocate temporarily	In conflict with concrete pour and pump setup, construction staging.	1
468	Red Maple	*Acer rubrum*	8	4	Moderate	Recently planted street tree. Planted "proud", though root collar appears level with top of curb. Some exposed roots. Vulnerable to desiccation in summer	High	Relocate permanently	In conflict with concrete pour and pump setup, construction staging, and curb-let downs for drop-off.	1
469	Red Maple	*Acer rubrum*	8	4	Moderate	Recently planted street tree. Planted "proud", though root collar appears level with top of curb. Some exposed roots. Vulnerable to desiccation in summer	High	Relocate temporarily	In conflict with concrete pour and pump setup, construction staging.	1
470	Red Maple	*Acer rubrum*	8	4	Moderate	Recently planted street tree. Planted "proud", though root collar appears level with top of curb. Some exposed roots. Vulnerable to desiccation in summer	High	Relocate temporarily	In conflict with concrete pour and pump setup, construction staging.	1
471	Red Maple	*Acer rubrum*	9	4	Moderate	Recently planted street tree. Planted "proud", though root collar appears level with top of curb. Some exposed roots. Vulnerable to desiccation in summer	High	Relocate temporarily	In conflict with concrete pour and pump setup, construction staging.	1
565	Red Maple	*Acer rubrum*	9	4	Moderate	Recently planted street tree. Planted "proud", though root collar appears level with top of curb. Some exposed roots. Vulnerable to desiccation in summer	High	Relocate temporarily	In conflict with concrete pour and pump setup, construction staging.	1
566	Red Maple	*Acer rubrum*	9	4	Moderate	Recently planted street tree. Planted "proud", though root collar appears level with top of curb. Some exposed roots. Vulnerable to desiccation in summer	High	Relocate temporarily	In conflict with concrete pour and pump setup, construction staging.	1
567	Red Maple	*Acer rubrum*	9	4	Moderate	Recently planted street tree. Planted "proud", though root collar appears level with top of curb. Some exposed roots. Vulnerable to desiccation in summer	High	Relocate temporarily	In conflict with concrete pour and pump setup, construction staging.	1
568	Red Maple	*Acer rubrum*	9	4	Moderate	Recently planted street tree. Planted "proud", though root collar appears level with top of curb. Some exposed roots. Vulnerable to desiccation in summer	High	Relocate temporarily	In conflict with concrete pour and pump setup, construction staging.	1

Tree #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Health and Condition Rating	Comments	Retention Value Rating	Retain/ Remove	Tree Retention Comments	CRZ
569	Red Maple	*Acer rubrum*	9	4	Moderate	Recently planted street tree. Planted "proud", though root collar appears level with top of curb. Some exposed roots. Vulnerable to desiccation in summer	High	Retain	Successful retention requires boulevard improvements - see tree retention discussion. Protect with tree protection fencing as per attached plan. Maintain soil moisture with use of Tree Gator.	1
570	Western Redcedar	*Thuja plicata var."Excelsa"*	33	9	Normal	Excelsa with good, conical form. In maintained garden	High	Retain	Conflicts with proposed project not expected if fences built to plan and TPZ respected.	2
571	Magnolia	*Magnolia sp.*	12	5	Normal	Open grown and vigorous. In maintained garden	High	Relocate temporarily	Shoring excavations to encroach within root zone.	2
572	Douglas-fir	*Pseudotsuga menziesii*	21	9	Normal	Good, conical form. Very vigorous. In maintained garden	High	Retain	Conflicts with proposed project not expected if fences built to plan and TPZ respected.	2
573	Western Redcedar	*Thuja plicata var."Excelsa"*	29	9	Normal	Excelsa with good, conical form. In maintained garden	High	Retain	Conflicts with proposed project not expected if fences built to plan and TPZ respected.	2
574	Magnolia	*Magnolia sp.*	10	5	Normal	Open grown and vigorous. In maintained garden	High	Retain	This tree has a small root zone and is expected to tolerate excavations to property line.	1
575	Douglas-fir	*Pseudotsuga menziesii*	22	9	Dying	Very stressed appearance. Leaning north from base. Root plate may be failing.	Low	Remove	This tree is dying and should be removed	2

Tree #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Health and Condition Rating	Comments	Retention Value Rating	Retain/ Remove	Tree Retention Comments	CRZ
576	Douglas-fir	*Pseudotsuga menziesii*	21	9	Normal	Good, conical form. Very vigorous. In maintained garden	High	Relocate permanently	In conflict with excavation for underground parking. This tree has good transplant potential - If there are no encumbrances such as underground utilities. Please refer to section 4.0 for a discussion of transplant methodology.	2
577	Magnolia	*Magnolia sp.*	5	5	Normal	Small tree close to fence line of parking lot. Relatively small and in poor soil.	High	Relocate permanently	Within footprint of proposed underground parking. This tree has good transplant potential - If there are no encumbrances such as underground utilities. Please refer to section 4.0 for a discussion of transplant methodology.	1
578	Western Redcedar	*Thuja plicata var."Excelsa"*	25	9	Normal	Excelsa with good, conical form. In maintained garden	High	Retain	Conflicts with proposed project not expected if fences built to plan and TPZ respected.	2
579	Magnolia	*Magnolia sp.*	5	5	Medium	Small tree close to fence line of parking lot. Relatively small and in poor soil.	High	Relocate permanently	In conflict with excavation for underground parking. This tree has good transplant potential - If there are no encumbrances such as underground utilities. Please refer to section 4.0 for a discussion of transplant methodology.	2

Tree #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Health and Condition Rating	Comments	Retention Value Rating	Retain/ Remove	Tree Retention Comments	CRZ
580	Douglas-fir	*Pseudotsuga menziesii*	32	9	Normal	Good, conical form. Very vigorous. In maintained garden	High	Relocate permanently	In conflict with excavation for underground parking. This tree has good transplant potential - If there are no encumbrances such as underground utilities. Please refer to section 4.0 for a discussion of transplant methodology.	2
581	Douglas-fir	*Pseudotsuga menziesii*	25	9	Normal	Good, conical form. Very vigorous. In maintained garden	High	Relocate permanently	In conflict with temporary site access.	2
582	Douglas-fir	*Pseudotsuga menziesii*	27	9	Normal	Good, conical form. Very vigorous. In maintained garden	High	Relocate permanently	In conflict with temporary site access.	2
583	Coral bark Japanese maple	*Acer palmatum 'Sango Kaku'*	15	3	Normal	Multi stem from base.	High	Relocate permanently	In conflict with temporary site access.	2
584	Red Maple	*Acer rubrum*	17	8	Normal	Vigorous young tree in garden bed.	High	Relocate permanently	In conflict with temporary site access.	2
8123	Western Redcedar	*Thuja plicata*	51	16	Dead/Dying	This tree is dead. Probably as a result of construction damage and grading of the parking lot to the south	Nil	Remove	This tree is dead and is recommended for removal.	3.1
8135	Western Redcedar	*Thuja plicata*	86	25	Poor	Largest tree in small retention group. Thin crown typical of construction damage. New plantings and irrigation system in root zone. 10 degree, uncorrected lean south is concerning given obvious construction impacts to this group. Lean has developed since 1/30/2015. Targets temporary parking lot, south.	Low	Remove	Given this tree's lean and poor crown condition, it is not expected to tolerate encroachment into root zone from parkade excavations. Likelihood of long-term survival is low.	5.2

Tree #	Common Name	Botanical Name	DBH (cm)	Ht (m)	Health and Condition Rating	Comments	Retention Value Rating	Retain/ Remove	Tree Retention Comments	CRZ
8136	Western Redcedar	*Thuja plicata*	54	35	Moderate	One of the few cedars retained during the construction of adjacent property. Crown appears stressed. Asphalt path 1.2m south. Concrete sidewalk 1.2m north. This tree may have been damaged by past construction, but better vigour than other cedars in group is evidence that it may adapt to the new hardscape	High	Retain	If removing asphalt path, do so under arborist supervision. Plates or other ground protection required if construction access encroaches into tpz. Install tree protection fencing as per attached plan.	7
8137	Western Redcedar	*Thuja plicata*	45	16	Poor	Good form and broad crown. Very stressed appearance, dead top. New plantings and irrigation in root zone. Irrigation and mulch, the standard treatment prescriptions, have already been installed. Monitoring or removal are the only options.	Low	Remove	This tree is in decline and lacks the structure to tolerate being retained alone following removal of larger cedars adjacent.	2.7

Appendix 2 Site Photographs

Photo 1. Viewing mature cedars to the north of the site.

Photo 2. Trees 8123, 8135, 8137, 453, and 454. Note lean of 8135, the tallest tree.

Photo 3. Tree 462 is a red maple street tree. Note standing water in boulevard indicating very compacted soil and poor drainage.

Photo 4. Street trees on Birney Ave have been planted proud. There is good opportunity to improve growing conditions in the boulevard.

Photo 5. Cedars 173, 174, 175.

Photo 6: Cedars 168 and 167 appear to be stressed and may not be good candidates for relocation.

Appendix 3 Tree Health and Structure Rating Criteria

The tree health and structure ratings used by Diamond Head Consulting summarize each tree based on both positive and negative attributes using five stratified categories. These ratings indicate health and structural conditions that influence a tree's ability to withstand local site disturbance during the construction process (assuming appropriate tree protection) and benefit a future urban landscape.

Excellent: Tree of possible specimen quality, unique species or size with no discernible defects.

Good: Tree has no significant structural defects or health concerns, considering its growing environment and species.

Moderate: Tree has noted health and/or minor to moderate structural defects. This tree can be retained, but may need mitigation (e.g., pruning or bracing) and monitoring post-development. A moderate tree may be suitable for retention within a stand or group, but not suitable on its own.

Poor: Tree is in serious decline from previous growth habit or stature, has multiple defined health or structural weaknesses. It is unlikely to acclimate to future site use change. This tree is not suitable for retention within striking distance of most targets.

Dead/Dying: Tree was found to be dead, in severe decline and/or has severe defects.

Appendix 4 Tree Retention Value Rating Criteria

The tree retention value ratings used by Diamond Head Consulting provide guidance for tree retention planning. Each tree in an inventory is assigned to one of four stratified categories that reflect its value as a future amenity and environmental asset in a developed landscape. Tree retention suitability ratings take in to account the health and structure rating, species profile*, growing conditions and potential longevity assuming a tree's growing environment is not compromised from its current state.

High: Tree suitable for retention. Has a good or excellent health and structure rating. Tree is open grown, an anchor tree on the edge of a stand or dominant within a stand or group. Species of *Populus, Alnus* and *Betula* are excluded from this category.

Medium: Tree suitable for retention with some caveats or suitable within a group**. Tree has moderate health and structure rating, but is likely to require remedial work to mitigate minor health or structural defects. Includes trees that are recently exposed, but wind firm, and trees grown on sites with poor rooting environments that may be ameliorated.

Low: Tree has marginal suitability for retention. Health and structure rating is moderate or poor; remedial work is unlikely to be viable. Trees within striking distance of a future site developments should be removed.

Nil: Tree is unsuitable for retention. It has a dead/dying or poor health and structure rating. It is likely that the tree will not survive, or it poses and unacceptable hazard in the context of future site developments.

* The species profile is based upon mature age and height/spread of the species, adaptability to land use changes and tree species susceptibility to diseases, pathogen and insect infestation.

** Trees that are 'suitable as a group' have grown in groups or stands that have a single, closed canopy. They have not developed the necessary trunk taper, branch and root structure that would allow then to be retained individually. These trees should only be retained in groups.

Appendix 5 Risk Rating Matrices

Trees with a *probable* or *imminent* likelihood of failure, a *medium* or *high* likelihood of impacting a specified target, and a *significant* or *severe* consequence of failure have been assessed for risk and included in this report (Section 3.2). These two risk rating matrices showing the categories used to assign risk are taken without modification to their content from the International Society of Arboriculture Tree Risk Assessment Qualification Manual.

Matrix 1: Likelihood

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	**Low**	**Medium**	**High**
Imminent	Unlikely	Somewhat Likely	Likely	Very Likely
Probable	Unlikely	Unlikely	Somewhat Likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat Likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Matrix 2: Risk Rating

Likelihood of Failure and Impact	Consequences of Failure			
	Negligible	**Minor**	**Significant**	**Severe**
Very Likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat Likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

Appendix 6 Construction Guidelines

Tree management recommendations in this report are made under the expectation that the following guidelines for risk mitigation and proper tree protection will be adhered to during construction.

Respecting these guidelines will prevent changes to the soil and rooting conditions, contamination due to spills and waste, or physical wounding of the trees. Any plans for construction work and activities that deviate from or contradict these guidelines should be discussed with the project arborist so that mitigation measures can be implemented.

Tree Protection Zones

Tree protection zones (TPZs) are fenced areas designed to protect a tree from the negative impacts of construction and development. Within a TPZ, no construction activity, including materials storage, grading or landscaping, may occur without project arborist approval. The size of a TPZ is determined by the extent of critical root zones according to local municipal bylaw specifications and may be modified based on professional judgement of the project arborist to accommodate species specific tolerances and site specific growing conditions.

Critical Root Zones

Critical root zones (CRZs) are specifically intended to protect a tree's roots from negative construction impacts. CRZs are required to retain good health and vigor of the tree during development and in the future landscape. The CRZ boundary is measured as a radius in all directions from the outer surface of the tree's stem.

The following are tree preservation guidelines for CRZs based on industry standards for best practice and local municipal requirements:

- No soil disturbance or stripping.
- Maintain the natural grade within the CRZ.
- No storage, dumping of materials, parking, underground utilities or fires within CRZs or tree driplines.
- Any planned construction and landscaping activities affecting trees should be reviewed and approved by a consulting arborist.

- Install specially designed foundations and paving when these structures are required within CRZs.
- Route utilities around CRZs.
- Excavation within the CRZs should be supervised by a consultant arborist.
- Surface drainage should not be altered in such a way that water is directed in or out of the CRZ.
- Site drainage improvements should be designed to maintain the natural water table levels within the CRZ.

Tree Protection Fences

Prior to any construction activity, tree protection fences must be constructed at the root protection zone perimeter. The protection barrier or temporary fencing must be at least 1.2 m in height and constructed of 2" by 4" lumber with orange plastic mesh screening. Tree protection fences must be constructed prior to tree removal, excavation or construction and remain intact throughout the entire duration of construction.

Tree Crown Protection and Pruning

All heavy machinery (excavators, cranes, dump trucks, etc.) working within five meters of a tree's crown should be made aware of their proximity to the tree. If there is to be a sustained period of machinery working within five meters of a tree's crown, a of line of colored flags should be suspended at eye-level of the machinery operator for the length of the protected tree area. Any concerns regarding the clearance required for machinery and workers within or immediately outside tree protection zones should be referred to the project arborist so that a zone surrounding the crowns can be established or pruning measures undertaken. Any wounds incurred to protected trees during construction should be reported to the project arborist immediately.

Unsurveyed Trees

Unsurveyed trees identified by DHC in the Tree Retention Plan have been hand plotted for approximate location only using GPS coordinates and field observations. The location and ownership of unsurveyed trees cannot be confirmed without a legal surveyed. The property owner or project developer must ensure that all relevant on- and off-site trees are surveyed by a legally registered surveyor, whether they are identified by DHC or not.

Removal of logs from sites

Private timber marks are required to transport logs from privately-owned land in BC. It is property owner's responsibility to apply for a timber mark prior to removing any merchantable timber from the site. Additional information can be found at: http://www.for.gov.bc.ca/hth/private-timber-marks.htm

Regulation of Soil Moisture and Drainage

Excavation and construction activities adjacent to RPZs can influence the availability of moisture to protected trees. This is due to a reduction in the total root mass, changes in local drainage conditions, and changes in exposure including reflected heat from adjacent hard surfaces. To mitigate these concerns the following guidelines should be followed:

- Soil moisture conditions within the tree root protection zones should be monitored during hot and dry weather. When soil moisture is inadequate, supplemental irrigation should be provided that penetrates soil to the depth of the root system or a minimum of 30 cm.
- Any planned changes to surface grades within the RPZs, including the placement of mulch, should be designed so that any water will flow away from tree trunks.
- Excavations adjacent to trees can alter local soil hydrology by draining water more rapidly from RPZs more rapidly than it would prior to site changes. It is recommended that when excavating within 6 m of any tree, the site be irrigated more frequently to account for this.

Root Zone Enhancements and Fertilization

Root zone enhancements such as mulch, and fertilizer treatments may be recommended by the project arborist during any phase of the project if they deem it necessary to maintain tree health and future survival.

Paving Within and Adjacent to Critical Zones

If development plans propose the construction of paved areas and/or retaining walls close to critical root zone (CRZs), measures should be taken to minimize impacts. Construction of these features would raise concerns for proper soil aeration, drainage, irrigation and the available soil volume for adequate root growth. The following design and construction guidelines for paving and retaining walls are recommended to minimize the long-term impacts of construction on protected trees:

- Any excavation activities near or within the CRZ should be monitored by a certified arborist. Structures should be designed, and excavation activities undertaken to remove and disturb as little of the rooting zone as possible. All roots greater than 2 cm in diameter should be hand pruned.

- The natural grade of an CRZ should be maintained. Any retaining walls should be designed at heights that maintain the existing grade within 20 cm of its current level. If the grade is altered, it should be raised not reduced in height.
- Long-term tree health is directly dependent on the volume below ground growing space that is available. If the CRZ must be compromised, the planned distance of any excavations from a tree's trunk should not be closer than 50% of the CRZ on more than two sides of the tree.
- Compaction of sub grade materials can cause trees to develop shallow rooting systems. This can contribute to long-term pavement damage as roots grow. Minimizing the compaction of sub-grade materials by using structural soils and increasing the strength of the pavement reduces reliance on the sub-grade for strength.
- If it is not possible to minimize the compaction of sub-grade materials, subsurface barriers should be considered to help direct roots downward into the soil and prevent them from growing directly under the paved surfaces.

Plantings within TPZs

Any plans to landscape the ground within the TPZ should implement measures to minimize negative impacts on the above or below ground parts of a tree. Existing grass layer in TPZs should not be stripped because this will damage surface tree roots. Grass layer should be covered with mulch at the start of the project, which will gradually kill the grass while moderating soil moisture and temperatures. Topsoil should be mixed with the mulch prior to planting of shrubs, but new topsoil layer should not be greater than 20 cm deep on top of the original grade. Planting should take place within the newly placed topsoil mixture and should not disturb the original rooting zone of the trees. A two-meter radius around the base of each tree should be left unplanted and covered in mulch; a tree's root collar should remain free from any amendments that raise the surface grade.

Monitoring during construction

Ongoing monitoring by a consultant arborist should occur for the duration of a development project. Site visits should be more frequent during activities that are higher risk, including the first stages of construction when excavation occurs adjacent to the trees. Site visits will ensure contractors are respecting the recommended tree protection measures and will allow the arborist to identify any new concerns that may arise.

During each site visit the following measures will be assessed and reported on by a consulting arborist:

- Health and condition of protected trees, including damage to branches, trunks and roots that may have resulted from construction activities, as will the health of. Recommendations for remediation will follow.
- Integrity of the TPZ and fencing.

- Changes to TPZ conditions including overall maintenance, parking on roots, and storing or dumping of materials within TPZ. If failures to maintain and respect the TPZ are observed, suggestions will be made to ensure tree protection measures are remediated and upheld.
- Review and confirmation of recommended tree maintenance including root pruning, irrigation, mulching and branch pruning.
- Changes to soil moisture levels and drainage patterns; and
- Factors that may be detrimentally impact the trees.

Appendix 7 Report Assumptions and Limiting Conditions

1) Unless expressly set out in this report or these Assumptions and Limiting Conditions, Diamond Head Consulting Ltd. ("Diamond Head") makes no guarantee, representation or warranty (express or implied) regarding this report, its findings, conclusions or recommendations contained herein, or the work referred to herein.

2) The work undertaken in connection with this report and preparation of this report have been conducted by Diamond Head for the "Client" as stated in the report above. It is intended for the sole and exclusive use by the Client for the purpose(s) set out in this report. Any use of, reliance on or decisions made based on this report by any person other than the Client, or by the Client for any purpose other than the purpose(s) set out in this report, is the sole responsibility of, and at the sole risk of, such other person or the Client, as the case may be. Diamond Head accepts no liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm (including without limitation financial or consequential effects on transactions or property values, and economic loss) that may be suffered or incurred by any person as a result of the use of or reliance on this report or the work referred to herein. The copying, distribution or publication of this report (except for the internal use of the Client) without the express written permission of Diamond Head (which consent may be withheld in Diamond Head's sole discretion) is prohibited. Diamond Head retains ownership of this report and all documents related thereto both generally and as instruments of professional service.

3) The findings, conclusions and recommendations made in this report reflect Diamond Head's best professional judgment given the information available at the time of preparation. This report has been prepared in a manner consistent with the level of care and skill normally exercised by arborists currently practicing under similar conditions in a similar geographic area and for specific application to the trees subject to this report on the date of this report. Except as expressly stated in this report, the findings, conclusions and recommendations it sets out are valid for the day on which the assessment leading to such findings, conclusions and recommendations was conducted. If generally accepted assessment techniques or prevailing professional standards and best practices change at a future date, modifications to the findings, conclusions, and recommendations in this report may be necessary. Diamond Head expressly excludes any duty to provide any such modification if generally accepted assessment techniques and prevailing professional standards and best practices change.

4) Conditions affecting the trees subject to this report (the "Conditions", include without limitation, structural defects, scars, decay, fungal fruiting bodies, evidence of insect attack, discoloured foliage, condition of root structures, the degree and direction of lean, the general condition of the tree(s) and the surrounding site, and the proximity of property and people) other than those expressly addressed in this report may exist. Unless otherwise stated information contained in this report covers only those Conditions and trees at the time of inspection. The inspection is limited to visual

examination of such Conditions and trees without dissection, excavation, probing or coring. While every effort has been made to ensure that any trees recommended for retention are both healthy and safe, no guarantees, representations or warranties are made (express or implied) that those trees will not be subject to structural failure or decline. The Client acknowledges that it is both professionally and practically impossible to predict with absolute certainty the behavior of any single tree, or groups of trees, in all given circumstances. Inevitably, a standing tree will always pose some risk. Most trees have the potential for failure and this risk can only be eliminated if the risk is removed. If Conditions change or if additional information becomes available at a future date, modifications to the findings, conclusions, and recommendations in this report may be necessary. Diamond Head expressly excludes any duty to provide any such modification of Conditions change or additional information becomes available.

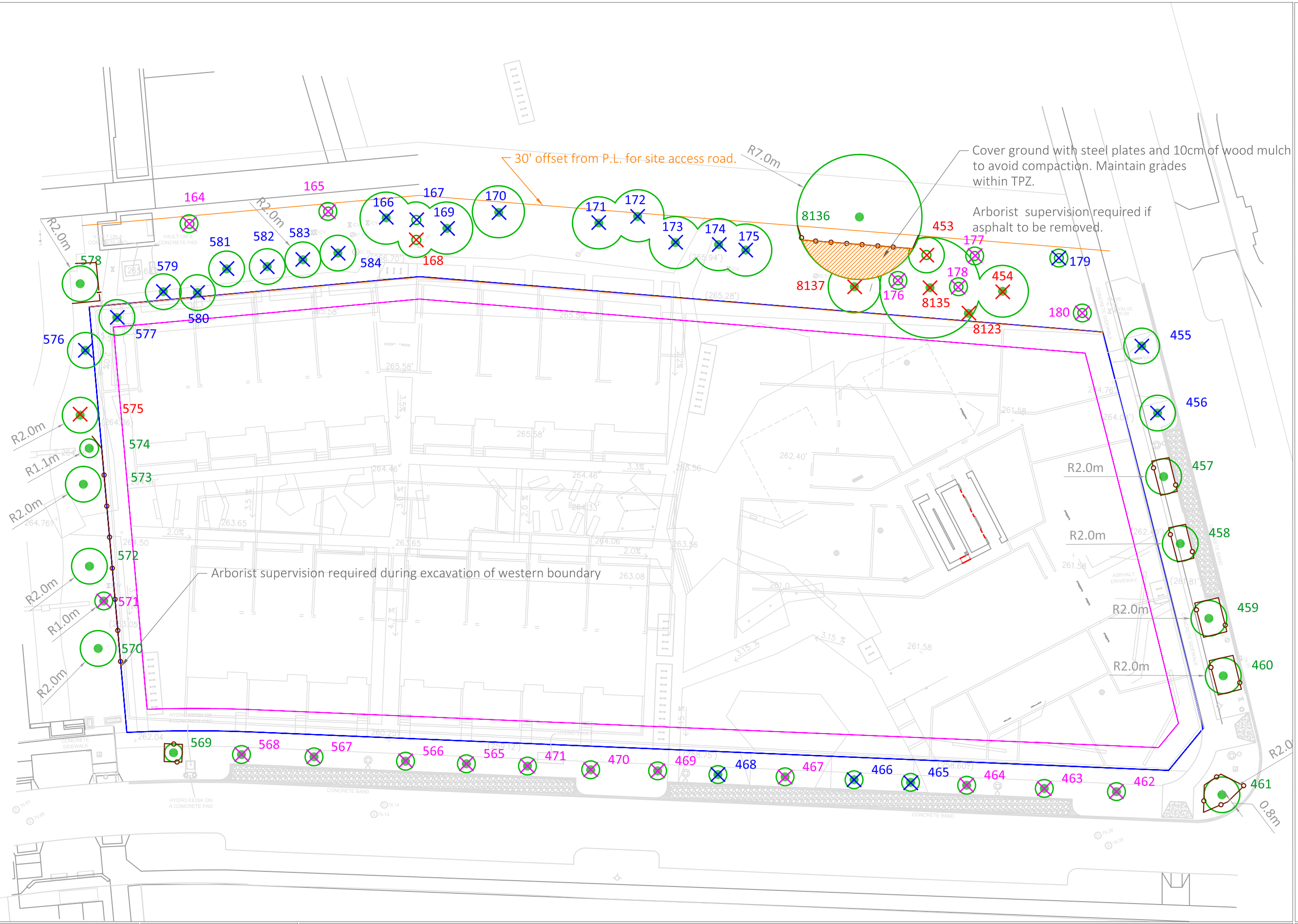
5) Nothing in this report is intended to constitute or provide a legal opinion and Diamond Head expressly disclaims any responsibility for matters legal in nature (including, without limitation, matters relating to title and ownership of real or personal property and matters relating to cultural and heritage values). Diamond Head makes no guarantee, representation or warranty (express or implied) as to the requirements of or compliance with applicable laws, rules, regulations, or policies established by federal, provincial, local government or First Nations bodies (collectively, "Government Bodies") or as to the availability of licenses, permits or authorizations of any Government Body. Revisions to any regulatory standards (including by-laws, policies, guidelines an any similar directions of a Government Bodies in effect from time to time) referred to in this report may be expected over time. As a result, modifications to the findings, conclusions and recommendations in this report may be necessary. Diamond Head expressly excludes any duty to provide any such modification if any such regulatory standard is revised.

6) Diamond Head shall not be required to give testimony or to 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.

7) In preparing this report, Diamond Head has relied in good faith on information provided by certain persons, Government Bodies, government registries and agents and representatives of each of the foregoing, and Diamond Head assumes that such information is true, correct and accurate in all material respects. Diamond Head accepts no responsibility for any deficiency, misinterpretations or fraudulent acts of or information provided by such persons, bodies, registries, agents and representatives.

8) 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.

9) Loss or alteration of any part of this report invalidates the entire report.



LEGEND

- TREE PROTECTION ZONE
- TREE PROTECTION FENCE
- TREE TO BE RETAINED
- UN-SURVEYED TREE
- TREE TO BE REMOVED
- TREE TO BE RELOCATED - PERMANENT
- TREE TO BE RELOCATED - TEMPORARY

NOTES

1. The location of un-surveyed trees on this plan is approximate. Their location and ownership cannot be confirmed without being surveyed by a Registered BC Land Surveyor.
2. All tree protection fencing must be built to the relevant municipal bylaw specifications.The dimensions shown are from the outer edge of the stem of the tree.
3. The tree protection zone shown is a graphical representation of the critical root zone, measured from the outer edge of the stem of the tree. (½ the trees diameter was added to the graphical tree protection circles to accommodate the survey point being in the center of the tree)
4. Any construction activities or grade changes within the Root Protection Zone must be approved by the project arborist.
5. This plan is based on a topographic and tree location survey provided by the owners' Registered British Columbia Land Surveyor (BCLS) and layout drawings provide by the owners' Engineer (P Eng).
6. This plan is provided for context only, and is not certified as to the accuracy of the location of features or dimensions that are shown on this plan. Please refer to the original survey plan and engineering plans.

REFERENCE DRAWINGS

1. Base Survey by:

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Drawing title: Tree Management Plan
Project address: Ivy on the Park, Binning Road at Birney Ave
Client:Wall Financial

Drawing No: 5
Date: 2018/07/23
Drawn by: MH
Page Size: TABLOID 11"x17"