



RATHBURN ARBORIST CONSULTING INC.

TREE RETENTION ASSESSMENT:

Rathburn Arborist Consulting Inc. has been asked to complete an assessment of the trees on and adjacent to the following proposed project:

Civic address:	2700 West Broadway Vancouver BC
Report Date:	December 17, 2017; Updated March 5, 2018
Client name:	Beng Gunn, 2700 West Broadway Holdings Inc.
Date of site visit:	December 6, 2017
Weather during visit:	Dry and clear

The objective of this report is to ensure the proposed development is in compliance with the City of Vancouver Protection of Trees By-Law No. 9958. The bylaw trees at the site were assessed, including: species, diameter at breast height (dbh) measured to the nearest 1 cm at 1.4 m above natural grade (tree's base), estimated height and general health and defects. Critical root zones were calculated for each of the trees with the potential for development impacts. Tree hazards were assessed according to International Society of Arboriculture and WCB standards. Suitability for tree retention was evaluated based on the health of the trees and their location in relation to the proposed building envelopes and infrastructure. This report outlines the existing condition of the trees on and adjacent to the property, summarizes the proposed tree removals and retention trees as well as suggested guidelines for protecting the remaining trees during the construction process.

This study reports the existing condition of on-site trees and any trees adjacent to the property. In addition this study reports on the retention viability of the trees in context with the proposed development plans, and outlines guidelines to ensure the remaining trees are adequately protected during construction.

Scope of Assignment

- Our investigation is based solely on our visual inspection of the trees on our last site visit.
- Our inspection was conducted from ground level; aerial inspections have not been undertaken unless otherwise stated.
- We did not conduct soil tests or below grade, root examinations to assess the condition of the root system of the trees.
- Only the trees specified in the scope of work were assessed and assessments were performed within the limitations specified.



Figure 1. Location of subject site – 2700 West Broadway Street Vancouver BC

Project Overview

The subject area is comprised of one commercial building that covers the site. It is my understanding the existing building will be demolished and a new commercial building will be built with a similar footprint, although the foundation will be setback more to the west than the current foundation.

There are no on-site trees, and only one City owned tree within the scope of this project. This tree will be retained and protected. This will require Tree Protection Fencing as specified within and on the Tree Retention Plan as well as special measures to ensure no harm comes to the City owned tree.

Tree attributes, critical root zones and recommendations for the retained tree is listed below in **Table 1**.

Tree Inventory

The following is an inventory of assessed trees, each of which was marked with a numbered tag as is required by the Corporation Tree Bylaw. Tree species, characteristics, comments, recommendations and required root protection zones have been suggested (Table 1). Their locations are illustrated on the accompanying map.

Overall Health and Structure Rating

- **Excellent** = Tree of possible specimen quality, unique species or size with no discernible defects, or heritage tree.
- **Normal** = Tree is in good condition with no significant structural weaknesses or health concerns, considering its growing environment and species.
- **Moderate** = Tree has noted health and/or minor structural weaknesses, however, treatments may be recommended to improve the health or structural condition of the tree.
- **Poor** = Tree is in serious decline from its typical growth habits and has multiple very definable health and/or structural weaknesses. These trees may have difficulty adapting to land use changes.
- **Dead/Dying** = Tree was found to be dead, and/or has severe defects and is in severe decline.

Tree Retention Value Rating

This rating provides guidance for tree retention planning and takes into account the tree's species profile and its growing conditions.

- **High** = Trees are worthy of consideration for retention. This includes dominant trees in a stand as well as open grown individual trees would be typically included in this category.
- **Medium** = Trees may be considered for retention with limitations and/or treatments. This may include trees growing within groves or stands, recently exposed trees or trees with minor structural defects that can be mitigated through pruning,
- **Low** = Trees with structural/health defects that are not currently high risk or imminent for failure. Trees should not be considered for retention if within striking distance of a high value target. These includes poor species profiles* for long term viability. Trees growing in poor locations such as tightly spaced stands of trees with high height to diameter ratios, recently exposed edge trees or areas with high water tables leading to shallow constricted rooting.
- **Nil** = Trees should not be considered for retention due to high risk condition or extenuating circumstances that have led to the tree being at high risk of failing and dead or dying trees.

Photos



Photo 1: Looking at the subject site frontage.



Photo 2 and 3 showing the subject City owned tree, east of the existing building.

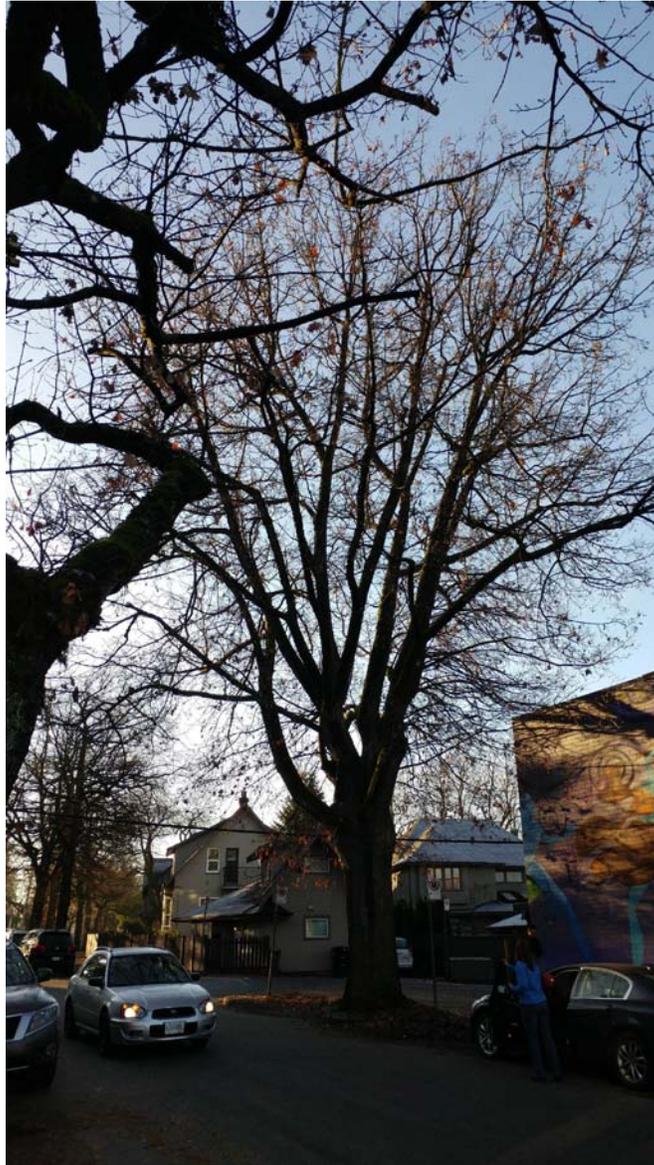


Photo 4: Looking at the subject City owned tree, showing that the side towards the existing building has been previously pruned to reduce the extent of the crow over the building.

Table 1. On-site Tree Suitability Summary.

Note: tree suitability takes the overall tree health condition, tree retention value and proposed plans into consideration to ensure the retained trees can adapt to the proposed site changes.

Quantity	Suitability	Description
0	Unsuitable	A tree that is unsuitable for retention in the proposed land use due to advanced health decline or presence of significant structural defects. Unsuitable tree is not considered for retention as there is a significant chance that these trees will not survive or may become a hazard given the proposed future land use. Note: trees with this rating may be in very poor in health and structural condition and / or rated to have a high or extreme risk of failure rating (CTRA).
0	Moderate	A tree that has moderate structural defects or health issues and may be considered to be in poor overall health condition. The retention of this class of trees is not always successful or viable due to their pre-existing structural defects or health issues; however these trees may be viable for retention with the use of special measures and / or if they or retained in groups of other (groves) trees.
0	Suitable	A tree in fair, good or excellent health and / or structural condition with no obvious or identifiable structural defects or health issues based on VTA, and are worthy of consideration for retention in the proposed development.
Total Trees	0	

Note: There were no on-site trees on the subject site.

Table 2. Tree Inventory Table

Note: off-site trees are not assessed for condition or suitability, dbh may be estimated.

Tag #	Common Name	Botanical Name	DBH ¹ (cm)	Dripline ²	Overall Condition	Comments	Retain/ Remove	Tree Retention Comments	TPZ
City-1	English oak	Quercus robur	96	7.5m	Normal	This tree is growing in a concrete cut-out between the road and the sidewalk. The tree is 4.25m from the existing building. The root zone has been restricted by the concrete sidewalk and existing building foundation. The tree's crown appears to have been previously pruned to reduce the encroachment over the property line.	Retain	This tree will require protection (fencing) however the concrete side and adjacent road covers the majority of root zone.	5.82 Modified to allow for road and sidewalk.

RECOMMENDATIONS:

The following tree retention special measures will help ensure the tree is not harmed in relation to this project:

1. Pruning; the west side of the tree is growing slightly over the property line, and will require pruning to accommodate the new construction.
 - a) We have discussed the pruning with the Vancouver Board of Parks, and they have agreed to undertake the needed pruning. This pruning will be done by parks staff using their approved methods.
2. Existing building will be demolished under Project Arborist direction. Once the existing foundation is removed, the project arborist will inspect the subject trees root zone to determine if any root pruning is needed. The project arborist will undertake root pruning if needed.
3. Excavation for new foundation will be dug under on-site Project Arborist direction.

¹ Dbh is the tree's diameter measured in cm at the height of 1.4m above natural grade

² Dripline is the radius measurement in meters of the trees crown (width from center to end of farthest limb).

4. Any work to the sidewalk adjacent the tree must be approved by the Vancouver Board of Parks and be installed using low impact methods. Please note at this time, the plan shows the existing sidewalk to remain intact.
5. Tree Protection Fencing will be aligned to side walk cut out or specified by City

RECOMMENDATIONS AND CONCLUSIONS:

One City street tree was identified to be within the scope of this project. This tree has been growing with hardscape for many decades, this growing site and the building to the west will have restricted the root growth. The removal of the existing foundation and replacement of the new foundation should not have any significant impact on the tree's root system.

Since this tree has been previously pruned in the past only minor pruning treatments are recommended (and to be undertaken by City Parks), to mitigate encroachment on the building, and we can provide detailed pruning specifications if requested. Any new hardscaping or sidewalk renovation must be done under project arborist (at City Parks discretion) supervision.

If you require any further information, please call me directly at 604 363-2053 to discuss.

Regards,



Max Rathburn

ISA Certified Arborist (PN0599A)

ISA Qualified Tree Risk Assessor

Enclosures: Tree Retention Plan, Construction Guidelines for Protected Trees

Construction Guidelines for Protected Trees

Tree Retention Zones

Six to times the diameter was used in consideration to determine the optimal Tree Protection Zone (TPZ) setbacks, and adjusted to suit the specific needs of the tree and site conditions. The TPZ is the area around the tree that contains the tree's critical root zone, and these trees are crucial for stability. Please note that most trees will have root systems that extend outside of the TPZ setbacks and if excavation is to take place within 1.5 of the TPZ an arborist should be present to ensure the roots are properly inspected and pruned. The TPZ setback is an area which no grading or construction activity may occur without project arborist and / or Municipal approval.

The following are tree preservation guidelines and standards for the TPZs:

- No soil disturbance or stripping;
- The natural grade shall be maintained within the protection zone;
- No storage, dumping of materials, parking, underground utilities or fires;
- Any plan affecting trees should be reviewed by a consultant including demolition, erosion control, improvement, utility, drainage, grading, landscape, and irrigation;
- Special foundations, footings and paving designs are required if within the tree protection zone;
- Utilities should be routed around the TPZ;
- Excavation within the tree protection zone should be supervised by a consulting arborist;
- Surface drainage should not be altered so as to direct water into or out of the TPZ; and
- Site drainage improvements should be designed to maintain the natural water table levels within the TPZ.

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

Tree Protection Fences

Prior to any construction activity on site, tree protection fences must be constructed at the specified distance from the tree trunks. 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. This must be constructed prior to tree removal, excavation or construction and remain intact throughout the entire period of construction. Further standards for fencing construction can be found at:

<http://vancouver.ca/your-government/protection-of-trees-by-law.aspx>