



Talbot Mackenzie & Associates

Consulting Arborists

# **208-240 Wilson St, Victoria**

## **Construction Impact Assessment & Tree Preservation Plan**

Prepared For: Citizen Design Build Inc.  
2785 Murray Drive  
Saanich, BC  
V9A 2S5

Prepared By: Talbot, Mackenzie & Associates  
Noah Borges – Consulting Arborist  
ISA Certified: #PN-8409A  
TRAQ – Qualified

Date of Issuance: March 14, 2019

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Jobsite Property: 208-240 Wilson Street, Victoria

Date of Site Visit: November 22, 2018

Site Conditions: Four residential lots (one empty). No ongoing construction activity.

**Summary:** Fourteen trees will require removal, including all trees on the subject property (#968-977) and four municipal trees on the Wilson St boulevard (NT1-NT4). Two non-by-law protected trees on neighbouring properties (Cherry NT5 and Cypress NT6) can be retained. We do not anticipate the health of these trees will be significantly impacted, though excavation should be limited to 2m outside the underground parkade footprint near Cherry NT5. The existing retaining wall east of Cypress NT6 will likely restrict root growth in the direction of excavation. Cypress NT6 will require clearance pruning from the proposed building, though we do not anticipate its health will be significantly impacted. We recommend the project arborist supervise all excavation within their CRZs.

### **Scope of Assignment:**

- Inventory the existing bylaw protected trees and any trees on municipal or neighbouring properties that could potentially be impacted by construction or that are within three metres of the property line
- Review the proposal to demolish the existing buildings and construct 22 new townhouses, an underground parkade, and new municipal sidewalks on Wilson St and Alston St
- Comment on how construction activity may impact existing trees
- Prepare a tree retention and construction damage mitigation plan for those trees deemed suitable to retain given the proposed impacts

**Methodology:** We visually examined the trees on the property and prepared an inventory in the attached Tree Resource Spreadsheet. Each by-law protected tree was identified using a numeric metal tag attached to its lower trunk. Municipal trees and neighbours' trees were not tagged. Information such as tree species, DBH (1.4m), crown spread, critical root zone (CRZ), health, structure, and relative tolerance to construction impacts were included in the inventory. The by-law protected trees with their identification numbers were labelled on the attached Site Plan. The conclusions reached were based on the information provided within the attached plans from Citizen Design Build Inc. (dated March 8, 2019).

**Limitations:** No exploratory excavations have been requested and thus the conclusions reached are based solely on critical root zone calculations and our best judgement using our experience and expertise. The location, size and density of roots are often difficult to predict without exploratory excavations and therefore the impacts to the trees may be more or less severe than we anticipate.

**Summary of Tree Resource:** Sixteen trees were in the inventory, including three by-law protected trees on the subject property. There are four municipal trees on the Wilson St frontage and two trees on neighbouring properties within 3m of the property boundary.

**Trees to be Removed:** Fourteen trees will require removal due to construction related impacts:

- **Trees #968-977** are located on the subject property within or immediately adjacent to the footprints of the proposed buildings or underground parkade.
- **Trees NT1-NT4** are located on the Wilson St boulevard and will require removal for construction of the new municipal sidewalk.

**Potential Impacts on Trees to be Retained and Mitigation Measures**

- **Trees to be Retained:** Only two non-by-law protected trees, located on adjacent properties to the north and west will be retained. The neighbours should be informed of the proposed impacts to their trees.
  - **Cherry NT5** (11 stems, ~5-20cm DBH) is growing north of property boundary on a slope surrounded by stones from a partially collapsed stone retaining wall. The attached plans show the underground parkade will be constructed 3.5m from the north property line. If excavation can be limited to 2m outside the parkade footprint (or approximately 1.5m from the base of the tree), we do not anticipate any health impacts to the tree. We recommend the project arborist supervise any excavation within the CRZ of this tree (2.5m) and prune any roots encountered back to sound tissue. This tree's crown overhangs the subject property 3m. We do not anticipate crown pruning will be required as the closest patio is approximately 5m away.
  - **Monterey Cypress NT6** (~40cm DBH) is growing near the fence line on the neighbouring property to the west. There is a retaining wall along the west property boundary that likely restricts root growth in the direction of the proposed building, which is approximately 3m away. Assuming excavation will occur 1m outside the building footprint, we do not anticipate the health of this tree will be significantly impacted. It has been topped and therefore, it will not pose a risk structurally, even if roots are encountered. We recommend the project arborist supervise any excavation within the CRZ of this tree (5m) in case roots are encountered growing underneath the retaining wall.

This tree's crown overhangs the subject property by 3m and pruning will be required. If 1m of clearance is desired from the building, we do not anticipate the tree's health will be significantly impacted. We recommend all pruning be performed by an ISA Certified Arborist to ANSI A300 pruning standards.

- **Underground Services:** No trees to be retained will be impacted by the installation of underground services.

- **Arborist Supervision:** All excavation occurring within the critical root zones of protected trees should be completed under supervision by the project arborist. Any severed roots must be pruned back to sound tissue to reduce wound surface area and encourage rapid compartmentalization of the wound. In particular, the following activities should be completed under the direction of the project arborist:
  - Excavation within the CRZs of neighbours' trees NT5 and NT6
- **Barrier fencing:** The areas surrounding the trees to be retained should be isolated from the construction activity by erecting protective barrier fencing. Where possible, the fencing should be erected at the perimeter of the critical root zones. The barrier fencing must be a minimum of 4 feet in height, of solid frame construction that is attached to wooden or metal posts. A solid board or rail must run between the posts at the top and the bottom of the fencing. This solid frame can then be covered with plywood, or flexible snow fencing. The fencing must be erected prior to the start of any construction activity on site (i.e. demolition, excavation, construction), and remain in place through completion of the project. Signs should be posted around the protection zone to declare it off limits to all construction related activity. The project arborist must be consulted before this fencing is removed or moved for any purpose.
- **Minimizing Soil Compaction:** In areas where construction traffic must encroach into the critical root zones of trees to be retained, efforts must be made to reduce soil compaction where possible by displacing the weight of machinery and foot traffic. This can be achieved by one of the following methods:
  - Installing a layer of hog fuel or coarse wood chips at least 20 cm in depth and maintaining it in good condition until construction is complete.
  - Placing medium weight geotextile cloth over the area to be used and installing a layer of crushed rock to a depth of 15 cm over top.
  - Placing two layers of 19mm plywood.
  - Placing steel plates.
- **Mulching:** Mulching can be an important proactive step in maintaining the health of trees and mitigating construction related impacts and overall stress. Mulch should be made from a natural material such as wood chips or bark pieces and be 5-8cm deep. No mulch should be touching the trunk of the tree. See "methods to avoid soil compaction" if the area is to have heavy traffic.
- **Blasting:** Care must be taken to ensure that the area of blasting does not extend beyond the necessary footprints and into the critical root zones of surrounding trees. The use of small low-concussion charges and multiple small charges designed to pre-shear the rock face will reduce fracturing, ground vibration, and overall impact on the surrounding environment. Only explosives of low phytotoxicity and techniques that minimize tree damage should be used. Provisions must be made to ensure that blasted rock and debris are stored away from the critical root zones of trees.

- **Scaffolding:** This assessment has not included impacts from potential scaffolding including canopy clearance pruning requirements. If scaffolding is necessary and this will require clearance pruning of retained trees, the project arborist should be consulted. Depending on the extent of pruning required, the project arborist may recommend that alternatives to full scaffolding be considered such as hydraulic lifts, ladders or platforms. Methods to avoid soil compaction may also be recommended (see "Minimizing Soil Compaction" section).
- **Landscaping and Irrigation Systems:** The planting of new trees and shrubs should not damage the roots of retained trees. The installation of any in-ground irrigation system must take into account the critical root zones of the trees to be retained. Prior to installation, we recommend the irrigation technician consult with the project arborist about the most suitable locations for the irrigation lines and how best to mitigate the impacts on the trees to be retained. This may require the project arborist supervise the excavations associated with installing the irrigation system. Excessive frequent irrigation and irrigation which wets the trunks of trees can have a detrimental impact on tree health and can lead to root and trunk decay.
- **Arborist Role:** It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:
  - Locating the barrier fencing
  - Reviewing the report with the project foreman or site supervisor
  - Locating work zones, where required
  - Supervising any excavation within the critical root zones of trees to be retained
  - Reviewing and advising of any pruning requirements for machine clearances
- **Review and site meeting:** Once the project receives approval, it is important that the project arborist meet with the principals involved in the project to review the information contained herein. It is also important that the arborist meet with the site foreman or supervisor before any site clearing, tree removal, demolition, or other construction activity occurs and to confirm the locations of the tree protection barrier fencing.

Please do not hesitate to call us at (250) 479-8733 should you have any further questions.

Thank you,



Noah Borges  
ISA Certified #PN-8409A  
TRAQ – Qualified

Talbot Mackenzie & Associates  
ISA Certified Consulting Arborists

Encl. 2-page tree resource spreadsheet, 1-page site plan with trees, 4-page building plans, 1-page site servicing plan, 1-page barrier fencing specifications, 2-page tree resource spreadsheet methodology and definitions

**Disclosure Statement**

Arborists are professionals who examine trees and use their training, knowledge and experience to recommend techniques and procedures that will improve their health and structure or to mitigate associated risks.

Trees are living organisms, whose health and structure change, and are influenced by age, continued growth, climate, weather conditions, and insect and disease pathogens. Indicators of structural weakness and disease are often hidden within the tree structure or beneath the ground. It is not possible for an Arborist to identify every flaw or condition that could result in failure or can he/she guarantee that the tree will remain healthy and free of risk.

Remedial care and mitigation measures recommended are based on the visible and detectable indicators present at the time of the examination and cannot be guaranteed to alleviate all symptoms or to mitigate all risk posed.



Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations	By-Law Protected	Retention Status
968	Western Red Cedar	<i>Thuja plicata</i>	78, 78	12	18.5	Poor	Fair/poor	Poor	Codominant union with included bark, separation in union, large tear-out wound on east stem, declining tops	Y	X
969	Western Red Cedar	<i>Thuja plicata</i>	60	10	9.0	Poor	Fair/poor	Fair/poor	Declining tops	Y	X
970	Atlas Cedar	<i>Cedrus atlantica</i>	59	10	7.0	Moderate	Good	Fair	Multiple tops	N	X
971	Red Maple	<i>Acer rubrum</i>	37	5	4.5	Moderate	Fair	Fair	Ivy, codominant union at 2m	N	X
972	Red Maple	<i>Acer rubrum</i>	Multistem	6	6.0	Moderate	Fair	Fair/poor	Included bark between some stems (2x25cm, 7x17cm DBH stems)	Y	X
973	Norway Spruce	<i>Picea abies</i>	33	5	4.0	Moderate	Good	Good		N	X
974	Pear	<i>Pyrus spp.</i>	37	5	4.5	Moderate	Good	Fair		N	X
975	Apple	<i>Malus spp.</i>	15	3	2.0	Moderate	Good	Fair		N	X
976	Crabapple	<i>Malus spp.</i>	40	6	5.0	Moderate	Good	Fair		N	X
977	Cherry	<i>Prunus spp.</i>	17, 17	5	3.5	Moderate	Good	Fair		N	X
NT1	Mountain Ash	<i>Sorbus aucuparia</i>	19	5	3.0	Poor	Good	Good	Municipal tree (ID 29992)	N (municipal)	X
NT2	European White Birch	<i>Betula pendula</i>	27	8	3.0	Moderate	Fair	Fair	Municipal tree (ID 29991), pruned from utility lines	N (municipal)	X
NT3	Mountain Ash	<i>Sorbus aucuparia</i>	24	5	3.5	Poor	Fair	Fair/poor	Municipal tree (ID 29990), topped for utility line clearance	N (municipal)	X
NT4	European White Birch	<i>Betula pendula</i>	32	5	4.0	Moderate	Good	Fair	Municipal tree (29989), leaning away from road	N (municipal)	X

Prepared by:

Talbot Mackenzie &amp; Associates

ISA Certified and Consulting Arborists

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email: tmtreehelp@gmail.com

## Tree Resource Spreadsheet

Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations	By-Law Protected	Retention Status
NT5	Cherry	<i>Prunus spp.</i>	Multistem	8	2.5	Moderate	Good	Fair	Neighbour's tree, 3m from fence line, 11 stems 5-20cm DBH, overhangs 3m	N (neighbour's)	Retain
NT6	Monterey Cypress	<i>Cupressus macrocarpa</i>	~40	7	5.0	Moderate	Good	Fair	Neighbour's tree, next to fence, topped, overhangs 3m, separated by retaining wall	N (neighbour's)	Retain

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SITE PLAN OF LOT 1 PLAN 23713, AND LOT 74, AND LOT 75 PLAN 549,  
BLOCK L, SECTION 31, ESQUIMALT DISTRICT.

Civic Address: 220, 230 and 240 Wilson Street,  
Victoria, B.C.

PO: 002-025-183 Lot 75  
PO: 008-923-211 Lot 74  
PO: 003-141-497 Lot 1

Zoning: R-2

0 1.25 2.5 5 7.5 10 12.5

The intended plot size of this plan is 864mm in  
width by 550mm in height (D size) when plotted  
at a scale of 1:125.

NOTES:

All Distances and Elevations shown are in Metres.  
Geodetic Elevations (CGD28) are derived from Control  
Elevations 75.58.  
Lot dimensions are derived from Field Survey.  
Elevations are of natural grade unless noted otherwise.  
If this plan is used in digital form, J.E. Anderson &  
Associates will only assume responsibility for information  
correct when an original unaltered drawing  
This plan lies within the City of Victoria  
This plan lies within the Capital Regional District

LEGEND

- Devices Standard Iron Post Found
- Devices Inverse Station Set
- Devices Water Meter Manhole
- Devices Utility Pole
- Devices Utility Pole Anchor
- Devices Road Fence
- Devices Chain Link Fence
- Devices Concrete Foot
- Devices Concrete Post
- Tree Description: 1.44 (Species), 0.75 (Trunk Diameter)

JAMIE HUBICK

SURVEYOR: CMG  
H. SAL DATE: SEPT 17/18  
38 Layout: Site Plan

File: 30638-08 Drawings  
Survey: 30638.dwg

J.E. ANDERSON  
& ASSOCIATES  
SURVEYORS  
100-1100 BROADVIEW AVE  
VICTORIA, BRITISH COLUMBIA V8P 2G1



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**208-240 Wilson St  
Tree Resource Spreadsheet**

Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations	By-Law Protected
NT3	Mountain Ash	<i>Sorbus aucuparia</i>	24	5	3.5	Poor	Fair	Fair/poor	Municipal tree (ID 29990), topped for utility line clearance	N (municipal)
NT4	European White Birch	<i>Betula pendula</i>	32	5	4.0	Moderate	Good	Fair	Municipal tree (29989), leaning away from road	N (municipal)
NT5	Cherry	<i>Prunus spp.</i>	Multistem	8	2.0	Moderate	Good	Fair	Neighbour's tree, 3m from fence line	N (neighbour's)
NT6	Monterey Cypress	<i>Cupressus macrocarpa</i>	~40	7	5.0	Moderate	Good	Fair	Neighbour's tree, next to fence, topped	N (neighbour's)