



Talbot Mackenzie & Associates

Consulting Arborists

910 McClure Street, Victoria

Construction Impact Assessment &

Tree Preservation Plan

PREPARED FOR: Barry Cosgrave
NumberTEN Architectural Group
200 – 1619 Store Street
Victoria, BC
V8W 3K3

PREPARED BY: Talbot, Mackenzie & Associates
Noah Borges – Consulting Arborist
ISA Certified # PN-8409A

DATE OF ISSUANCE: February 19, 2018

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Jobsite Property: 910 McClure Street, Victoria
Date of Site Visit: February 5, 2018
Site Conditions: Residential lot. No construction activity present. Gradually increasing in elevation south to north.

Summary: The proposed construction will require the removal of a 100cm DBH Elm stump (by-law protected), located in the backyard of the property and possibly under shared ownership with the north neighbour. We do not anticipate excavation for construction of the parking area will significantly impact the health of neighbouring trees NT6-NT11. Western Hemlock NT2 can be retained if our recommended mitigation measures are followed. Excavation within the tree's critical root zone should be performed under the supervision of the project arborist and the final grades of the surrounding landscape area should accommodate the preservation of critical roots.

Scope of Assignment: To inventory the existing by-law protected trees and any trees on neighbouring properties that could be potentially impacted by construction or that are within three meters of the property line. Review the proposal to demolish the existing building at 910 McClure St. and construct a new building as part of Abigail's Hotel. 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. 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 site plans from Number 10 Architectural Group and landscape plans from Keith N. Grant Landscape Architecture Ltd. dated February 9, 2018.

Summary of Tree Resource: Eleven trees were inventoried. There is only one by-law protected tree: an English elm stump (NT5).

Trees to be Removed:

- **English Elm NT5** is located in the footprint of the proposed parking area.
- **Western Hemlocks NT3 and NT4** are each within 2m of both the outdoor patio and external ramp to be located between the existing hotel and new building. A large number of structural roots are expected to be encountered during excavation, which we anticipate will result in

significant health impacts. Hemlocks typically exhibit poor tolerance to root disturbance and we do not anticipate they will recover from the impacts of the proposed excavation.

Potential Impacts on Trees to be Retained and Mitigation Measures

- **Western Hemlock NT2:** It is our understanding that this tree is to be incorporated into landscape plans so that it may be retained. The retaining wall and driveway adjacent to the tree are to be removed and the grade on the subject property reduced to more closely match the existing grade to the west of the tree. Depending on the depth of the retaining wall, roots may extend underneath the wall and may be encountered before the desired grade is reached.

To mitigate impacts to the tree's roots, we recommend the project arborist supervise any excavation within the CRZ as well as the removal of the existing retaining wall and driveway. Final grades may have to be determined at the time of excavation to accommodate the preservation of the tree's critical roots if it is to be retained.

- **Trees NT6-NT11:** The critical root zones of these trees overlap with the footprint of the proposed parking lot, which is located approximately 1.5m west of the property line. Excavation to bearing soil will likely encounter roots from the trees, but we do not anticipate that their health or stability will be significantly impacted. Elms NT7-NT11 may not have been planted but developed as root suckers of the Elm stump on the subject property (NT5). The neighbour should be notified of any potential impacts to their trees.
- **Service Connections:** It is our understanding that water, storm, and sewer connections are to be installed near the east property boundary. If any excavation for servicing is to be conducted within the critical root zone of municipal Mountain Ash NT1 an arborist should be on site to supervise and prune roots to the edge of excavation where appropriate. Depending on the proximity to the base of the tree, alternative excavation methods may be recommended (e.g. hydro-vac or air spade).
- **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.
- **Arborist Supervision:** All excavation occurring within the critical root zones of protected trees should be completed under supervision by the project arborist. Any roots encountered 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:

- Any excavation for service connections that occurs within the critical root zones of trees to be retained (e.g. Mountain Ash NT1)
- Any excavation within the critical root zone of Hemlock NT2, as well as removal of the existing retaining wall and asphalt driveway slab
- **Methods to avoid 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.
- **Demolition of the existing building:** The demolition of the existing house and any services that must be removed or abandoned, must take the critical root zone of the trees to be retained into account. If any excavation or machine access is required within the critical root zones of trees to be retained, it must be completed under the supervision and direction of the project arborist. If temporarily removed for demolition, barrier fencing must be erected immediately after the supervised demolition.
- **Mulching:** Mulching is an important proactive step to maintaining the health of the trees to be retained 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. As much of the area within two times the dripline of the tree should be mulched, both inside and outside of the critical root zone. No mulch should be touching the trunk of the tree. See “methods to avoid soil compaction” if the area is to have heavy traffic.
- **Irrigation Systems:** 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

Talbot Mackenzie & Associates

- 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 demolition, site clearing or other construction activity occurs.

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

Yours truly,
Talbot Mackenzie & Associates
ISA Certified Consulting Arborists

Encl. 1-page tree resource spreadsheet, 1-page site survey with trees, 1-page building plans, 1-page landscape plans, 1-page barrier fencing specifications

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.

February 5, 2018

910 McClure St
Tree Resource

Tag	Common Name	Latin Name	DBH (cm)	CRZ (m)	Crown Spread (m)	Health	Structure	Relative Tolerance	Remarks and Recommendations
NT1	Mountain Ash	<i>Sorbus intermedia</i>	30	4.5	6.0	Good	Good	Poor	Municipal
NT2	Western Hemlock	<i>Tsuga heterophylla</i>	42	6.5	8.0	Fair	Fair	Poor	Shared. Minor dieback
NT3	Western Hemlock	<i>Tsuga heterophylla</i>	37	5.5	8.0	Fair	Fair	Poor	Shared. Uplifting driveway. Dieback. Included codominant stem
NT4	Western Hemlock	<i>Tsuga heterophylla</i>	39	6.0	8.0	Fair	Fair	Poor	Shared. Dieback. Small trunk wound at 1m AGL
NT5	English Elm	<i>Ulmus minor</i>	100	12.0	3.0	Fair	Poor	Moderate	Shared with neighbour. Shoots growing from old stump
NT6	Cherry	<i>Prunus spp.</i>	~30, 20, 15	6.0	6.0	Good	Fair	Moderate	Neighbour's. 1.5m from fence. Overhangs 2m
NT7	English Elm	<i>Ulmus minor</i>	-10	1.0	4.0	Good	Fair	Moderate	Neighbour's. Likely a root sucker of NT5. 0.5m from fence. Overhangs 2m
NT8	English Elm	<i>Ulmus minor</i>	-7	1.0	3.0	Good	Fair	Moderate	Neighbour's. Likely a root sucker of NT5. Adjacent to fence. Leaning over subject property 3m
NT9	English Elm	<i>Ulmus minor</i>	-6	0.5	2.0	Good	Fair	Moderate	Neighbour's. Likely a root sucker of NT5. 1m from fence
NT10	English Elm	<i>Ulmus minor</i>	-10, 3, 3	1.5	4.0	Good	Fair/poor	Moderate	Neighbour's. Likely a root sucker of NT5. Adjacent to fence. Overhangs 3m
NT11	English Elm	<i>Ulmus minor</i>	-7, 5, 3	1.5	3.0	Good	Fair/poor	Moderate	Neighbour's. Likely a root sucker of NT5. Adjacent to fence. Overhangs 2m

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**B.C. LAND SURVEYOR'S
TOPOGRAPHIC SURVEY OF:
LOT 23, BLOCK 6, CHRIST CHURCH
TRUST ESTATE, VICTORIA CITY, PLAN
35**

SCALE:
0 1:250 10

All distances are in metres.
The intended plot size of this plan is 432mm in width by
300mm in height (8 size) when plotted at a scale of 1:250

Parcel Identification Number (PID)

009-332-065

SITE AREA

602.4m²

CIVIC ADDRESS

910 McCLURE STREET
VICTORIA, BC

ZONING

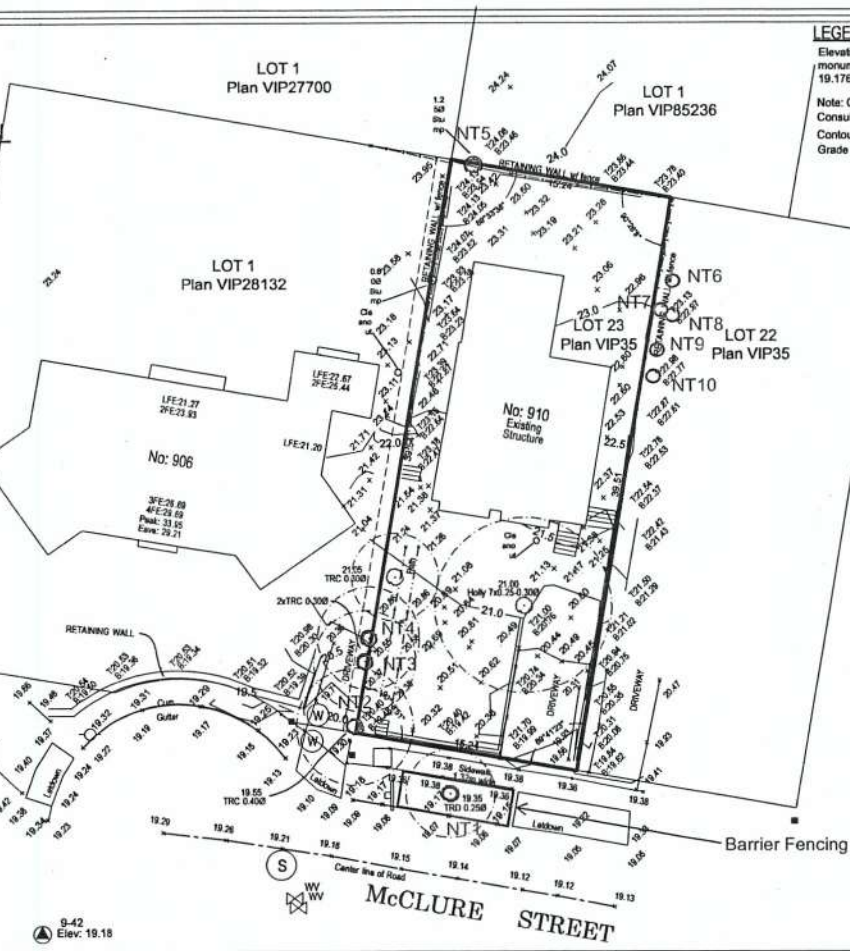
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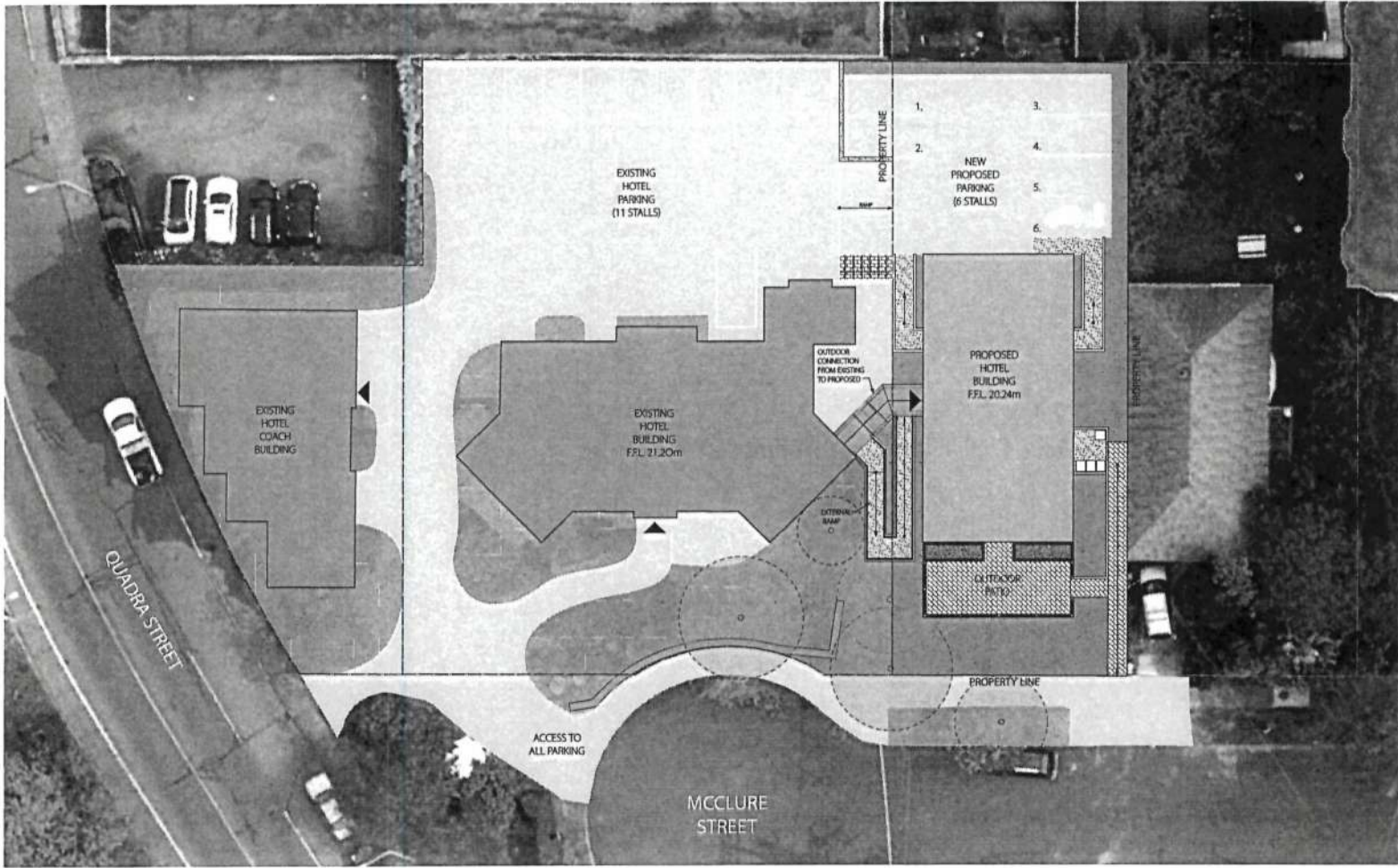
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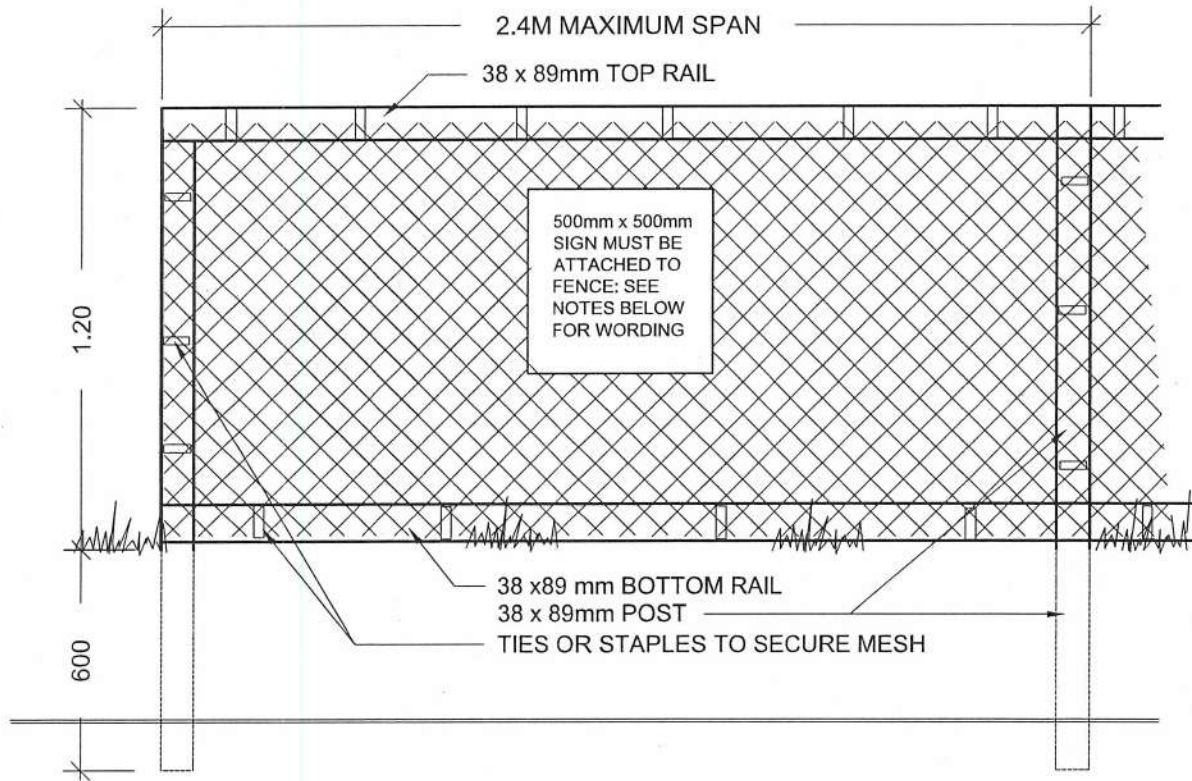
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It is based on Land Title Office records, and does not
represent a boundary survey. Critical lot dimensions
and areas must be confirmed by a proper cadastral survey.

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by a third party as a result of any decisions
made or actions taken based on this document.





ABIGAIL'S HOTEL EXPANSION - CONTEXT PLAN



TREE PROTECTION FENCING

NOTES:

1. FENCE WILL BE CONSTRUCTED USING 38 X 89 mm (2"X4") WOOD FRAME: TOP, BOTTOM AND POSTS. *
USE ORANGE SNOW-FENCING MESH AND SECURE TO THE WOOD FRAME WITH "ZIP" TIES OR GALVANIZED STAPLES.
2. ATTACH A 500mm x 500mm SIGN WITH THE FOLLOWING WORDING:
WARNING-HABITAT PROTECTION AREA. THIS SIGN MUST BE AFFIXED ON EVERY FENCE FACE OR AT LEAST EVERY 10 LINEAR METRES.

* IN ROCKY AREAS, METAL POSTS (T-BAR OR REBAR) DRILLED INTO ROCK WILL BE ACCEPTED



DETAIL NAME:

TREE PROTECTION FENCING

DATE: March/08
DRAWN: DM
APP'D: RR
SCALE: N.T.S.

H:\shared\parks\Tree Protection Fencing.pdf