

Arborist Report for Development

257 Belleville Street, Victoria

Date of Report: September 15, 2021

Date of Field Work: July 20, 2021

Client: Alan Lowe

#118-21 ERIE ST, VICTORIA, BC V8V 5A8

Email: <u>www.lowegroup.ca</u>

Phone: 250-360-2888

Prepared by Bill Stephen, BSc(F) ISA Certified Arborist # PN-0350A

Gye and Associates, Urban Forestry Consultants Ltd. Tel: (778) 222-0188

Email: bstephensooke@gmail.com



EXECUTIVE SUMMARY

Due to the permit application date, this report is subject to City of Victoria Tree Bylaw 05-106 (consolidated on November 22, 2019 up to Bylaw No.19-082).

The property at 257 Belleville Street is currently 'Admiral Inn' and will be rebuilt to become a multifamily residence with an underground parking garage.

There are no bylaw-protected trees currently growing on the site.

There are nine non-bylaw-protected trees on the site. They will be removed due to building construction requirements.

There are two large Municipal Trees located in the Cross Street boulevard, and three small stature Municipal Trees near the northern boundary of the property that will be protected.

Four trees located on the neighbouring property to the west will be protected.

There are no replacement trees proposed for this project because there are no bylaw-protected trees being removed. (The Minimum Tree Standard set forth in Bylaw 21-035 does not apply to this permit application.)

An overview of tree protection measures required for the protection of trees through each stage of the proposed redevelopment of the site is provided in this report and in the attached Tree Protection Plan drawing.

TREE STATUS	TOTAL TREES	To be RETAINED	To be REMOVED	2:1 REPLACMENT REQUIREMENT
On site trees, bylaw-protected	0	0	0	0
On site trees, not bylaw-protected	9	0	9	0
Municipal Trees	5	5	0	0
Adjacent trees	4	4	0	0
TOTAL	18	9	9	0



ASSIGNMENT

Gye and Associates (G&A) have been retained to prepare a tree protection plan drawing and report in support of the owner's building permit application, as well as on-site service upgrades during the construction and landscape phases of the project. This report has been prepared in accordance with the City's published Terms of Reference for Tree Preservation Plans.



Figure 1. Contextual map

METHODOLOGY

- A site visit was made to identify, measure and assess the condition of relevant trees.
- Biometric and tree condition assessment data were recorded and are presented in table format below (Table-1).
- Protected Root Zone (PRZ) radii were calculated for the subject trees. The PRZ was calculated using a method based upon the Methany & Clark method,¹ which considers the tree species' relative tolerance to disturbance, its biological age, and the diameter of the tree at chest height. G&A have modified this method to include tree health and soil depth and texture.
- Existing topographic survey and proposed design drawings were provided to the Project Arborist for review, relevant elements of which are incorporated within the attached Tree Preservation Plan drawing, including the location of existing trees, proposed buildings, underground services and landscape features.²
- The canopy and protected root zone (PRZ) of each tree was plotted to scale on the tree plan.
- The site plan was reviewed to identify site grading, servicing, building and landscape elements that may encroach within the PRZs of the trees. Relevant elements were plotted to scale on the tree plan.
- Site servicing was discussed with the applicant and preliminary lateral connections noted on the tree plan.
- Strategies to protect the root zones of two large Municipal Trees located on Cross Street are presented here. This area is indicated in the Tree Protection plan as a *Special Measures Zone*.

OBSERVATIONS

SITE DESCRIPTION

The property at 357 Belleville Avenue is a hospitality building (Admiral Inn) being converted to a multi-family residence. The property is located in the James Bay neighborhood. The terrain of the site is flat. A majority of the lot surface (70%+/-) is covered by impervious surface (building, hard landscaping or driveway). Vehicular access to the property is and will remain off Cross Street. The electrical services in the area are underground.

¹ Nelda Matheny and James R. Clark, <u>Tree and Development, A Technical Guide to Preservation of Trees</u> <u>During Land Development</u> (International Society of Arboriculture, Champaign II. USA. 1998 P. 74)



TREE RESOURCE

There are no bylaw-protected trees currently growing on the site.

There are nine non-bylaw-protected trees on the site. They will be removed due to building construction requirements. Eight are individually situated juvenile trees, and the other is a Cedar hedge where the largest stem is < 30 cm.

There are two large Municipal Trees located on the Cross Street boulevard, one of which is in poor health. The City of Victoria requires that both trees be retained and protected. The root systems of these two trees extend into the developed property. There are also three small stature Municipal Trees on the greenbelt to the north that will be protected.

There are four trees located at 235 Cross Street, immediately adjacent to the subject property. A permanent fence separates them some distance from the proposed work. Three of these trees may be subject to root impacts during the redevelopment of this property.



Biophysical attributes for the above trees are presented in the following table:

Map reference #	Common Name	Bylaw status	DBH (cm)	PRZ radius (m)	Crown diameter (m)	Structural condition	Health	Location	Retention suitability	Comments	Recommendations
1	Green ash	MUNICIPAL TREE	53	8	10	FAIR	POOR	MUNICIPAL TREE	SUITABLE	Tree is in declining health. Resiliency to root loss will be low.	RETAIN
2	London plane	MUNICIPAL TREE	78	9	13	GOOD	GOOD	MUNICIPAL TREE	SUITABLE	Robust tree, resilient to some root disturbance.	RETAIN
3	Cedar hedge	NON BYLAW	Largest stem < 30 cm	4	2	GOOD	GOOD	ON-SITE	SUITABLE		REMOVE
4	Laurel bush	OFF-SITE	22	1	6	GOOD	GOOD	OFF-SITE	SUITABLE	Will not be impacted by proposed work.	RETAIN
5	Norway maple	OFF-SITE	32	3	7	GOOD	GOOD	OFF-SITE	SUITABLE	Protected by Special Meaures Zones.	RETAIN
6	European birch	OFF-SITE	14	2	5	FAIR	POOR	OFF-SITE	SUITABLE	Protected by Special Meaures Zones.	RETAIN
7	European birch	OFF-SITE	22	3	6	GOOD	GOOD	OFF-SITE	SUITABLE	Protected by Special Meaures Zones.	RETAIN
8	English hawthorn	MUNICIPAL TREE	38	5	6	POOR	GOOD	MUNICIPAL TREE	UNSUITABLE	Poor structure, Municipal tree inspection suggested. Readily protected by fencing.	RETAIN
9	Ginnala maple	MUNICIPAL TREE	7	1	3	GOOD	GOOD	MUNICIPAL TREE	SUITABLE	Readily protected by fencing.	RETAIN
10	English hawthorn	MUNICIPAL TREE	21	2	5	GOOD	GOOD	MUNICIPAL TREE	SUITABLE	Readily protected by fencing.	RETAIN
11	Honey locust	NON BYLAW	13	1	3	GOOD	GOOD	ON-SITE	SUITABLE		REMOVE
12	Paper birch	NON BYLAW	26	3	6	FAIR	FAIR	ON-SITE	SUITABLE		REMOVE
13	Honey locust	NON BYLAW	12	2	3	FAIR	POOR	ON-SITE	SUITABLE		REMOVE
14	Honey locust	NON BYLAW	10	1	3	FAIR	FAIR	ON-SITE	SUITABLE		REMOVE
15	Honey locust	NON BYLAW	12	2	3	FAIR	FAIR	ON-SITE	SUITABLE	Mutli stem calculation uses 2019 Bylaw method.	REMOVE
16	Honey locust	NON BYLAW	9	1	3	FAIR	POOR	ON-SITE	SUITABLE		REMOVE
17	Honey locust	NON BYLAW	12	2	3	FAIR	FAIR	ON-SITE	SUITABLE		REMOVE
18	Honey locust	NON BYLAW	9	1	3	FAIR	POOR	ON-SITE	SUITABLE		REMOVE

Table-1 Tree inventory data



TR 1, a Green ash, showing early stages of decline in July 2021





Tree TR 2 (London plane) and TR 3 (Cedar hedge)





Pendray Street front garden, to be rebuilt





PROPOSED DEVELOPMENT

Redevelopment of this property is proposed, including demolition of the existing structure, and the construction of a new multi-unit building with above and below ground parking. Driveway access to the parking will be from Cross Street. The driveway and a sidewalk encroach into the protected area of Municipal Tree Nos. 1 and 2.

Existing water, storm and sewer servicing to the lot will be upgraded. All laterals will feed onto Pendray Street and will not be near any retained trees. The alignment of these services is indicated on the attached Tree Protection Plan drawing. Underground utilities will also be grouped with these services at appropriate off-sets.

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

ANTICIPATED IMPACTS TO RETAINED TREES

This Tree Management Plan indicates the two large boulevard trees on Cross Street (TR 1 - Green ash, TR 2 - London plane) to be retained and protected.

TR 1 is of low vigor, with indicators that its decline has been fairly recent, over the last three to four years. While as a species it is relatively tolerant of soil disturbance, it is intolerant of having its large woody roots severed. A turfgrass area behind the sidewalk, approximately 40 sq m, has functioned as rooting habitat. It will be converted to permeable hard surfacing that will continue to provide rooting habitat, but to a lesser extent. It is not clear whether this non-vigorous tree will be able to survive the stresses associated with even the best practices described below in the *Special Measures Zones* section.

TR 2 is a large London plane with a robust stem and indicators of high vigour. This species is generally tolerant of development related disturbances. The rooting habitat is presently mostly the grass boulevard, an open hedge, and asphalt parking. If the parking is resurfaced with permeable hardscape then the overall rooting habitat will be modestly improved. The tree protection measures described in this report will be adequate to preserve this tree in good health, provided the best practices described in the *Special Measures Zones* section below are implemented.

OS 5 and OS 6 are juvenile, healthy off-site trees whose roots have started to encroach upon the current hardscape. These trees with be protected with tree barrier fencing and arborist supervision of works within their PRZs. (See *Special Measures Zones* section below.)

OS 4, OS 7, M 9 and M 10 are healthy off-site trees that can be readily protected by fencing.

M 8 has serious structural defects which the municipality should inspect. It is of small stature and is located within the municipal greenbelt. Tree barrier fencing shall be erected to protect this tree, as indicated on the attached Tree Plan drawing.

TR 11 through to TR 18 are non-bylaw-protected trees. They are within the building footprint, and are recommended for removal.

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SPECIAL MEASURES ZONES (SMZ)

The protected root zone of some trees (TR 1, TR 2, OS 5 and OS 6) are shown on the plan as being 'Special Measures Zones'. Work within those zones will require a higher level of planning and supervision. The protective fencing will need to be let down at prescribed times to allow arborist supervised construction activities within these areas.

The following will be required of the Project Manager:

Installation of tree protection fencing prior to the commencement of site disturbance, and maintenance of this fencing in its original position until project completion. See the attached Tree Management Plan for details.

Contact with the Project Arborist at least three working days in advance, to arrange supervision whenever work inside the fencing is necessary.

The portions of the driveway and sidewalk that lie inside the protected root zones of Municipal Tree Nos. 1 and 2 will require a modified sub-base and base preparation. Sub-grading will be limited to soils above the upper tree root horizon (generally found between 100 and 150mm below existing grade). The organic soils exposed by the sub-grading *shall not be compacted*. A geotechnical product known as *Combi-GridTM* will provide a reinforced subgrade upon which a modified base preparation for the driveway and sidewalk may be emplaced (see x-section driveway detail on the attached Tree Plan drawing and sidewalk detail attached to this report).

All required works must also be acceptable to the Project Manager.

Storm-water pavers are recommended to facilitate rainwater infiltration to the soils and root habitat beneath the driveway area. Provided the porous pavers are maintained free of detritus, these design enhancements will allow water infiltration and gaseous exchange of CO2 and oxygen to the tree roots.



GENERAL TREE PROTECTION MEASURES

Tree protection measures to limit impacts from the construction of the foundation, driveway, in-ground services and landscape include the following:

- **Pre-demolition and construction meetings:** Prior to the release of a demolition or building permit by the City, the applicant and the applicant's General Contractor are required to meet on site with the Project Arborist to review the Tree Preservation Plan in detail. The purpose of the meeting is to systematically review the objectives of the plan and the measures required to protect trees designated for retention during the demolition, site preparation, construction and landscape phases of the project. Areas for material storage and on site trades parking (if any) shall be identified. The tree protection fencing shall be laid out and standards for fencing and signage confirmed. The meeting also provides an opportunity to address any logistical constraints and to answer questions.
- Tree Protection Fencing: All tree protection areas (TPAs) shall be fenced to prevent soil compaction, rutting and other forms of disturbance within the PRZ. If more working room inside the TPAs is required, the Project Arborist shall be consulted. If the Project Arborist authorizes fencing to be altered in order to facilitate more working room, the exposed portion of the root zone (now) outside the fencing must be protected to prevent soil disturbance. Acceptable soil-protection materials include steel plates or 200mm of compacted road base on top of geo-textile cloth or two-layers of ³/₄" plywood.
- On site Supervision: All excavation, trenching or rock removal (including blasting) within
 or adjacent to TPAs shall be supervised by the Project Arborist, including trenching for both
 municipal service connections and extension of these underground services to the house.
 Where considered necessary by the Project Arborist, hand-digging and pneumatic or
 hydraulic excavation techniques shall be used in place of mechanical excavation.
- **Tree Pruning:** The Project Arborist shall prune any tree roots or branches damaged during any phase of the project.
- **Pre-construction meeting for the landscape phase:** Landscaping activities, such as trenching for irrigation or lighting, grubbing of vegetation, distribution of soils and other landscape materials, are a significant potential source of damage to the sensitive soils and root systems of protected trees. Prior to any site preparation or construction activity for landscaping, the Project Manager and other professionals involved shall meet with the Project Arborist to review the Tree Protection Plan and measures associated with landscaping.
- The Project Arborist shall supervise all landscape activity within the tree protection areas.
- At completion of the redevelopment, the Project Arborist shall ensure that any tree
 protection or restoration deficiencies are addressed by the owner and building contractor.
 Once all deficiencies have been repaired, the Project Arborist shall prepare a letter to the
 City of Victoria confirming successful completion of the project, including resolution of any
 deficiencies.

Additional detail is provided on the attached tree plan. If diligently implemented, the tree protection measures specified in the Tree Management Plan and this report will

GYE + ASSOCIATES Consultants in Urban Forestry and Arboriculture effectively preserve Municipal Trees and both on and off site trees for the long term benefit of the homeowner and community.

ROLE OF THE PROJECT ARBORIST

In addition to assisting with tree preservation planning during the design and permit application phases of the project, the responsibilities of the Project Arborist during the construction and landscape phases of the project are described below:

The main role of the Project Arborist is to assist the contractor to successfully preserve all trees, on and off site, designated for retention as a condition of the building permit. **The owner's building contractor is responsible for coordinating with the arborist for all required on site work.** Following is a summary of the key interventions required by the Project Arborist (G&A):

- 1. Pre-construction meeting
- 2. On site supervision when working around PRSs and SMZs
- 3. Pre-landscape workplan meeting
- 4. Periodic site monitoring to ensure ongoing compliance with tree protection measures
- 5. Post-construction inspection and report to the City of Victoria.

End report

Prepared and submitted on behalf of Gye and Associates, Urban Forestry Consultants Ltd.

Consulting Arborist: Bill Stephen, BSc(F)

ISA Certified Arborist (Certification No. PN-0350A) ISA Tree Risk Assessment Qualified (Current)

Reviewed by:

Jeremy Gye - Senior Consultant

Gye and Associates, Urban Forestry Consultants Ltd. Consulting Arborist (Diploma, American Society of Consulting Arborists, 1997) ISA Certified Arborist (Certification No. PN-0144A) ISA Certified Municipal Specialist (Certification No. PN-0144AM) ISA Tree Risk Assessment Qualified (Current)



ASSUMPTIONS AND LIMITING AND CONDITIONS

- This report and the opinions expressed within it have been prepared in good faith and to accepted arboricultural standards within the scope afforded by its terms of reference and the resources made available to the consultant. The report provides no undertakings regarding the future condition or behavior of the trees reviewed within it. Tree hazard and condition assessments are not an exact science. Both qualities can and do change over time and should be reappraised periodically.
- 2. Any legal description provided to the consultant/appraiser is assumed to be correct. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.
- 3. It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations.
- 4. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant/appraiser can neither guarantee nor be responsible for the information provided by others.
- 5. The consultant/appraiser 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.
- 6. Loss or alteration of any part of this report invalidates the entire report.
- 7. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant/appraiser.
- 8. This report and attached drawings remain the sole property of Gye and Associates, Urban Forestry Consultants Ltd., until all accounts have been paid in full.
- 9. Neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of the consultant/appraiser— particularly as to value conclusions, identity of the consultant/appraiser, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant/appraiser as stated in his qualifications.





	1	1	1	-1	1	1	<u>REE INV</u>	ENTORY TA	BLES				
G&A Tree ID	Common Name	DBH (cm)	PRZr (m)	Crown Diameter (m)	Tree Location/ Ownership	Health	Structural Condition	Retention suitabiltiy	Species tolerance to disturbance	Bylaw Status	Action	Tree Protection Zon	
M-1	Green ash	53	8	10	Municipal	POOR	FAIR	SUITABLE	GOOD	MUNICIPAL TREE	Retention required by the City of Victoria		
M-2	London plane	78	9	13	Municipal	GOOD	GOOD	SUITABLE	GOOD	MUNICIPAL TREE	Retention required by the City of Victoria		
3	Cedar hedge	Largest stem < 30 cm	4	2	On-site	GOOD	GOOD	SUITABLE	GOOD	UNPROTECTED	Remove	NO DUMPING NO STORAGE NO DIGGING	
OS-4	Laurel bush	16.4	1	6	Off-site	GOOD	GOOD	SUITABLE	GOOD	UNPROTECTED	Retain and protect	NO FILL NO EXCAVATIN	G
OS-5	Norway maple	32	3	7	Off-site	GOOD	GOOD	SUITABLE	GOOD	BYLAW-PROTECTED	Retain and protect	Project Arborist: Gye and Associates Ltd. 250.883.45	533
OS-6	European birch	14	2	5	Off-site	POOR	FAIR	SUITABLE	POOR	UNPROTECTED	Retain and protect		
OS-7	European birch	22	3	6	Off-site	GOOD	GOOD	SUITABLE	POOR	UNPROTECTED	Retain and protect		
M-8	English hawthorn	38	5	6	Municipal	GOOD	POOR	UNSUITABLE	GOOD	MUNICIPAL TREE	Retain and protect		# 05
M-9	Ginnala maple	7	1	3	Municipal	GOOD	GOOD	SUITABLE	GOOD	MUNICIPAL TREE	Retain and protect	CATEGORY	TREES
M-10	English hawthorn	21	2	5	Municipal	GOOD	GOOD	SUITABLE	GOOD	MUNICIPAL TREE	Retain and protect	Total number of trees indicated on Tree	
11	Honey locust	13	1	3	On-site	GOOD	GOOD	SUITABLE	FAIR	UNPROTECTED	Remove	Management Plan	18
12	Paper birch	32	3	6	On-site	FAIR	FAIR	SUITABLE	FAIR	UNPROTECTED	Remove	(Municipal Trees)	5
13	Honey locust	12	2	3	On-site	POOR	FAIR	SUITABLE	FAIR	UNPROTECTED	Remove	(Adjacent Off-site Trees)	4
14	Honey locust	10	1	3	On-site	FAIR	FAIR	SUITABLE	FAIR	UNPROTECTED	Remove	(On-site Inventoried Unprotected Trees)	9
15	Honey locust	12	2	3	On-site	FAIR	FAIR	SUITABLE	FAIR	UNPROTECTED	Remove	(On-site Bylaw-Protected Trees)	0
16	Honey locust	9	1	3	On-site	POOR	FAIR	SUITABLE	FAIR	UNPROTECTED	Remove	Requested Protected Tree Removals from site	0
17	Honey locust	12	2	3	On-site	FAIR	FAIR	SUITABLE	FAIR	UNPROTECTED	Remove	Requested Tree Removals from municipal property	0
18	Honey locust	9	1	3	On-site	POOR	FAIR	SUITABLE	FAIR	UNPROTECTED	Remove	Requested Tree Removals from adjacent properties	0
Note: Tree ta	n numbers in blue bay	ve been plotted in their a	nnrovim	ate locations by	, the arboriet			· ·				Total Residual Number of On-site Protected Trees	0
												Replacement Trees Required by Tree Bylaw	0

Tree Protection

Modular steel pa secured to the g

16 x 24" all-weat For protected tre

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	TREE PF 1. Site meeting to review Tree Plan: Before site we the placement of fencing and other tree protection me a) The Project Arborist shall clearly mark the bour b) Access routes and areas for trade parking and	RESERVATION MEASURES ork begins, the owner and contractor shall me easures within this plan. Indaries of all areas to be fenced and protected materials storage will be identified with the co	eet with the arborist to review ed. ontractor.
	 2. Tree Fencing: a) Tree protection fencing shall be installed to the C demolition or building permit being issued (see fencin b) Tree protection fencing and armouring shall be m c) Requests to temporarily remove or move tree fend) The fencing can be adjusted under direction of the in blue on the tree inventory table). 	City of Victoria standards at the locations inding detail on plan). naintained in good condition throughout the duncing must be reviewed by the project arborist he Project Arborist after the removal of the a	icated on this drawing <u>prior to</u> uration of the project. t for approval. idjacent four trees (highlifhted
	 Temporary access to Tree Protection Areas: contractor shall notify the project arborist in advar measures prescribed by the arborist. 	If temporary access is required within a trend to a trend the access requirements a	ee protection area (TPA), the and any additional protective
	4. Soil armouring: If it is not possible to fence the e layers of overlapping 3/4" plywood (See drawing for r	entire PRZ, the unprotected portion of the PR recommended soil armouring locations.)	Z shall be armoured with two
	 5. Tree Management Plan posting: a) A full-sized weather-proof copy of this tree plan s b) The general contractor shall ensure that all relevant 	hall be posted in plain sight in the site office. ant sub-trades are familiar with the drawing a	nd tree protection measures.
	6. Site servicing and excavations: The project ar removal, site grading or blasting within, or adjacent to	borist shall be present to oversee excavat b, the tree protection areas (TPAs).	ion, service trenching, stump
	 7. Root & branch pruning and protection: a) Any tree roots or branches damaged during site v b) The vertical face of excavated cuts adjacent to project arborist to prevent soil desiccation and erosio 	work shall be pruned back to undamaged tiss o the TPAs shall be securely covered with m.	ue by the arborist. non-permeable fabric by the
	8. Irrigation: Retained tree M1001 must be watered (June - August).	according to the Project Arborists instruction	ns during the summer months
	9. Storage restrictions: No equipment, material PARTICULARLY INCLUDES HOARDING OF EX	ls or excavated soil shall be placed or s XCAVATED SOILS NEEDED FOR BACK	tored within the TPA. THIS (FILLING OF THE HOUSE
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