

ROBERTS HEIGHTS
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September 2018

Mayor Barbara Desjardins and Councilors
1229 Esquimalt Road,
Esquimalt BC
V9A 3P1

Dear Mayor and Council;

Re: 636-638 and 640-642 Drake Ave, Esquimalt, BC - Roberts Heights (site)

We are happy to bring to Esquimalt our proposal in an effort to help grow and improve the community. We are pleased after consultation to advance our plans to develop the site of 636-638 and 640-642 Drake Ave. This site has a number of characteristics that provide some great opportunities for those in the area.

We have worked with the Esquimalt staff to develop the building to fit and be welcoming to all for many years to come.

The two units that face onto Drake Ave have new entries to enhance and fit into the surrounding neighbourhood. The front entries of the two units have been centered and are open with front porch entries, making them inviting to the street and area. The unit's windows are facing Drake Ave, therefore obtaining a single family appearance home and further privacy to the neighbouring properties. The top floor exterior is board and batten to minimize the height and the exterior colors are now softer light shades.

The new official community plan (OCP) has changed the landscape for builders and homeowners alike and sets the stage for development through many decades. It recognizes that Esquimalt is running out of usable land for residences and notes that density is necessary to keep housing affordable for families in the Esquimalt area. This policy will help to mitigate the urban sprawl that forces young families further and further out of Esquimalt. We will increase the density of the site, while maintaining the detached dwelling look that is present and also new along the street.

Therefore, our proposal seeks to fit well in the overall feel of the neighbourhood. This site is large enough to accommodate townhome units and is providing sufficient parking for those living there. Going forward with this will complete the streetscape and stay in character with the surrounding neighbourhood. We will be moving and/or recycling the existing structures and materials as much as possible. Bicycle storage and EV charging will be incorporated in the units.

The landscape of Esquimalt is constantly changing and must keep pace with growth if it is to remain among the most vibrant and desirable areas. Home-ownership encourages pride in one's neighbourhood and a true sense of place for the new residents.

This proposal is one that we feel has a positive impact on the community. It has great access to downtown Esquimalt, parks, the new Esquimalt Town Square, Recreation Centre, Esquimalt Plaza and surrounding shops and coffee shops, schools and on route to post secondary schools. The new Esquimalt Town Square will feature a public square and a through-block art walk, as well as the proposed relocation of the Esquimalt Library. Great walk ability and bicycle and transit are nearby. Access to downtown Victoria and the Western Communities as well as up island are also easily accessible.

After careful consideration and consultation with neighbours and Esquimalt Planning department 8 units will fit best into the site with good green space and the required parking on site has been met. We have lowered the SFR to have 4 units with 2 bedrooms and 4 units with 3 bedrooms. We believe having single car garages will attract families with a lower demand on parking as well the two bedroom units will house smaller families.

We have also had the Community Meeting on June 8, 2018. The plans were described at the meeting. We appreciated the positive responses and comments

Houses to the side of Building A are screened to a good extent by neighbouring trees. Fencing will be provided with professional landscaping. Each unit will be fenced with natural good neighbour products. The units will be sold to residents whom wish to be near all amenities. The strata will decide if a unit can be a rental but this will not change the green space of which is proposed. The green space gives privacy to the neighbours. All property management will be addressed by the strata.

Parking requirements have been met / exceeded the Esquimalt regulation and a bicycle rack will be on site with additional bike storage in many units. This location, includes walking and bicycling distance to all amenities and BC Transit within a few blocks. There is also residential parking available on Drake Ave.

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Re: 636-638 and 640-642 Drake Ave, Esquimalt BC – Roberts Heights

In accordance with Green Building Indicators, these will be incorporated into the development. For example, concrete fiber hardy plank will be used for the exterior siding. Appropriate documentation has been submitted.

The project will be managed by experience builders whom have been involved in many projects.

If you have any questions please contact us. Thank you.

We sincerely hope for your support.

Yours truly,
Robert Heights
Chris Travis and Jim Burrows

/tc



GREEN BUILDING CHECKLIST

The purpose of this Checklist is to make property owners and developers aware of specific green features that can be included in new developments to reduce their carbon footprints to help create a more sustainable community.

Creating walkable neighbourhoods, fostering green building technologies, making better use of our limited land base and ensuring that new development is located close to services, shops and transit are some of the means of achieving sustainability.

The Checklist which follows focuses on the use of **Green Technologies** in new buildings and major renovations. The Checklist is not a report card, it is a tool to help identify how your project can become 'greener' and to demonstrate to Council how your project will help the Township of Esquimalt meet its sustainability goals. It is not expected that each development will include all of the ideas set out in this list but Council is looking for a strong commitment to green development.

There are numerous green design standards, for example, Built Green BC; LEED ND; Living Building Challenge; Green Shores; Sustainable Sites Initiative. Esquimalt is not directing you to follow any particular standard, however, you are strongly encouraged to incorporate as many green features as possible into the design of your project.

As you review this checklist, if you have any questions please contact **Development Services** at 250.414.7108 for clarification.

**New development is essential to Esquimalt.
We look forward to working with you
to ensure that development is
as green and sustainable as possible.**

Other documents containing references to building and site design and sustainability, which you are advised to review, include:

- Esquimalt's Official Community Plan
- Development Protocol Policy
- Esquimalt's Pedestrian Charter
- Tree Protection Bylaw No. 2664
- A Sustainable Development Strategic Plan for the Township of Esquimalt



"One-third of Canada's energy use goes to running our homes, offices and other buildings. The federal government's Office of Energy Efficiency (Natural Resources Canada) reports that a corresponding one-third of our current greenhouse gas (GHG) emissions come from the built environment."
[Green Building and Development as a Public Good, Michael Buzzelli, CPRN Research Report June 2009]

Please answer the following questions and describe the green and innovative features of your proposed development. Depending on the size and scope of your project, some of the following points may not be applicable.

Green Building Standards

Both energy use and emissions can be reduced by changing or modifying the way we build and equip our buildings.

- 1 Are you building to a recognized green building standard? Yes ☒ No
If yes, to what program and level?
- 2 If not, have you consulted a Green Building or LEED consultant to discuss the inclusion of green features? Yes ☒ No
- 3 Will you be using high-performance building envelope materials, rainscreen siding, durable interior finish materials or safe to re-use materials in this project? ☒ Yes No
If so, please describe them.
- 4 What percentage of the existing building[s], if any, will be incorporated into the new building? 0 %
- 5 Are you using any locally manufactured wood or stone products to reduce energy used in the transportation of construction materials? Please list any that are being used in this project.
Stone manufactured in abbotsford.
- 6 Have you considered advanced framing techniques to help reduce construction costs and increase energy savings? ☒ Yes No
- 7 Will any wood used in this project be eco-certified or produced from sustainably managed forests? If so, by which organization? No
For which parts of the building (e.g. framing, roof, sheathing etc.)? Possibly Roof Sheathing
- 8 Can alternatives to Chlorofluorocarbon's and Hydro-chlorofluorocarbons which are often used in air conditioning, packaging, insulation, or solvents] be used in this project? If so, please describe these. Yes ☒ No
- 9 List any products you are proposing that are produced using lower energy levels in manufacturing.
- 10 Are you using materials which have a recycled content [e.g. roofing materials, interior doors, ceramic tiles or carpets]? Yes ☒ No
- 11 Will any interior products [e.g. cabinets, insulation or floor sheathing] contain formaldehyde? Yes ☒ No

Water Management

The intent of the following features is to promote water conservation, re-use water on site, and reduce storm water run-off.

Indoor Water Fixtures

- | | | | |
|----|--|--------------------------------------|-------------------------------------|
| 12 | Does your project exceed the BC Building Code requirements for public lavatory faucets and have automatic shut offs? | Yes | <input checked="" type="radio"/> No |
| 13 | For commercial buildings, do flushes for urinals exceed BC Building Code requirements? | Yes | <input checked="" type="radio"/> No |
| 14 | Does your project use dual flush toilets and do these exceed the BC Building Code requirements? | <input checked="" type="radio"/> Yes | No |
| 15 | Does your project exceed the BC Building Code requirements for maximum flow rates for private showers? | Yes | <input checked="" type="radio"/> No |
| 16 | Does your project exceed the BC Building Code requirements for flow rates for kitchen and bathroom faucets? | Yes | <input checked="" type="radio"/> No |

Storm Water

- | | | | | |
|----|--|--------------------------------------|-------------------------------------|--------------------------------------|
| 17 | If your property has water frontage, are you planning to protect trees and vegetation within 60 metres of the high water mark? [Note: For properties located on the Gorge Waterway, please consult Sections 7.1.2.1 and 9.6 of the Esquimalt Official Community Plan.] | Yes | No | <input checked="" type="radio"/> N/A |
| 18 | Will this project eliminate or reduce inflow and infiltration between storm water and sewer pipes from this property? | <input checked="" type="radio"/> Yes | No | N/A |
| 19 | Will storm water run-off be collected and managed on site (rain gardens, wetlands, or ponds) or used for irrigation or re-circulating outdoor water features? If so, please describe. _____ | Yes | <input checked="" type="radio"/> No | N/A |
| 20 | Have you considered storing rain water on site (rain barrels or cisterns) for future irrigation uses? | <input checked="" type="radio"/> Yes | No | N/A |
| 21 | Will surface pollution into storm drains will be mitigated (oil interceptors, bio-swales)? If so, please describe. _____ | Yes | No | <input checked="" type="radio"/> N/A |
| 22 | Will this project have an engineered green roof system or has the structure been designed for a future green roof installation? | Yes | No | N/A |
| 23 | What percentage of the site will be maintained as naturally permeable surfaces? | <u>20</u> % | | |

Waste water

- | | | | | |
|----|--|-----|----|--------------------------------------|
| 24 | For larger projects, has Integrated Resource Management (IRM) been considered (e.g. heat recovery from waste water or onsite waste water treatment)? If so, please describe these. _____ | Yes | No | <input checked="" type="radio"/> N/A |
|----|--|-----|----|--------------------------------------|

Natural Features/Landscaping

The way we manage the landscape can reduce water use, protect our urban forest, restore natural vegetation and help to protect the watershed and receiving bodies of water.

- | | | | | |
|----|--|-----------------|----|-----|
| 25 | Are any healthy trees being removed? If so, how many and what species?
<u>possibly 1 fir.</u> | Yes | No | N/A |
| | Could your site design be altered to save these trees? | | | |
| | Have you consulted with our Parks Department regarding their removal? | <u>not yet.</u> | | |

Air Quality

The following items are intended to ensure optimal air quality for building occupants by reducing the use of products which give off gases and odours and allowing occupants control over ventilation.

- | | | | | |
|----|---|--------------------------------------|----|-----|
| 46 | Will ventilation systems be protected from contamination during construction and certified clean post construction? | <input checked="" type="radio"/> Yes | No | N/A |
| 47 | Are you using any natural, non-toxic, water soluble or low-VOC [volatile organic compound] paints, finishes or other products?
If so, please describe. <u>Prefinished Siding, Latex Paint.</u> | <input checked="" type="radio"/> Yes | No | N/A |
| 48 | Will the building have windows that occupants can open? | <input checked="" type="radio"/> Yes | No | N/A |
| 49 | Will hard floor surface materials cover more than 75% of the liveable floor area? | <input checked="" type="radio"/> Yes | No | N/A |
| 50 | Will fresh air intakes be located away from air pollution sources? | <input checked="" type="radio"/> Yes | No | N/A |

Solid Waste

Reuse and recycling of material reduces the impact on our landfills, lowers transportation costs, extends the life-cycle of products, and reduces the amount of natural resources used to manufacture new products.

- | | | | | |
|----|--|--------------------------------------|----|--------------------------------------|
| 51 | Will materials be recycled during demolition of existing buildings and structures?
If so, please describe. <u>recycle some existing material.</u> | <input checked="" type="radio"/> Yes | No | N/A |
| 52 | Will materials be recycled during the construction phase?
If so, please describe. <u>wood waste to supply firewood
cardboard & metal recycle.</u> | Yes | No | N/A |
| 53 | Does your project provide enhanced waste diversion facilities i.e. on-site recycling for cardboard, bottles, cans and or recyclables or on-site composting? | <input checked="" type="radio"/> Yes | No | N/A |
| 54 | For new commercial development, are you providing waste and recycling receptacles for customers? | Yes | No | <input checked="" type="radio"/> N/A |

Green Mobility

The intent is to encourage the use of sustainable transportation modes and walking to reduce our reliance on personal vehicles that burn fossil fuels which contributes to poor air quality.

- | | | | | |
|----|--|--------------------------------------|----|--------------------------------------|
| 55 | Is pedestrian lighting provided in the pathways through parking and landscaped areas and at the entrances to your building[s]? | <input checked="" type="radio"/> Yes | No | N/A |
| 56 | For commercial developments, are pedestrians provided with a safe path[s] through the parking areas and across vehicles accesses? | Yes | No | <input checked="" type="radio"/> N/A |
| 57 | Is access provided for those with assisted mobility devices? | <input checked="" type="radio"/> Yes | No | N/A |
| 58 | Are accessible bike racks provided for visitors? | <input checked="" type="radio"/> Yes | No | N/A |
| 59 | Are secure covered bicycle parking and dedicated lockers provided for residents or employees? | <input checked="" type="radio"/> Yes | No | N/A |
| 60 | Does your development provide residents or employees with any of the following features to reduce personal automobile use [check all that apply]:
<input type="checkbox"/> transit passes
<input type="checkbox"/> car share memberships
<input type="checkbox"/> shared bicycles for short term use
<input type="checkbox"/> weather protected bus shelters
<input checked="" type="checkbox"/> plug-ins for electric vehicles | | | |

Is there something unique or innovative about your project that has not been addressed by this Checklist? If so, please add extra pages to describe it.

Improvements in building technology will reduce energy consumption and in turn lower greenhouse gas (GHG) emissions. These improvements will also reduce future operating costs for building occupants.

- | | | | | |
|----|---|--------------------------------------|-------------------------------------|--------------------------------------|
| 34 | Will the building design be certified by an independent energy auditor/analyst?
If so, what will the rating be? _____ | Yes | <input checked="" type="radio"/> No | N/A |
| 35 | Have you considered passive solar design principles for space heating and cooling or planned for natural daylighting? | <input checked="" type="radio"/> Yes | No | N/A |
| 36 | Does the design and siting of buildings maximize exposure to natural light?
What percentage of interior spaces will be illuminated by sunlight? <u>10</u> % | Yes | No | N/A |
| 37 | Will heating and cooling systems be of enhanced energy efficiency (ie. geothermal, air source heat pump, solar hot water, solar air exchange, etc.).
If so, please describe. <u>Heat Pump</u>
If you are considering a heat pump, what measures will you take to mitigate any noise associated with the pump? <u>Quiet units + Proper placement</u> | <input checked="" type="radio"/> Yes | No | N/A |
| 38 | Has the building been designed to be solar ready? | <input checked="" type="radio"/> Yes | No | N/A |
| 39 | Have you considered using roof mounted photovoltaic panels to convert solar energy to electricity? | <input checked="" type="radio"/> Yes | No | N/A |
| 40 | Do windows exceed the BC Building Code heat transfer coefficient standards? | <input checked="" type="radio"/> Yes | No | N/A |
| 41 | Are energy efficient appliances being installed in this project?
If so, please describe. <u>Energy Star</u> | | | |
| 42 | Will high efficiency light fixtures be used in this project?
If so, please describe. | <input checked="" type="radio"/> Yes | No | N/A |
| 43 | Will building occupants have control over thermal, ventilation and light levels? | <input checked="" type="radio"/> Yes | No | N/A |
| 44 | Will outdoor areas have automatic lighting [i.e. motion sensors or time set]? | <input checked="" type="radio"/> Yes | No | N/A |
| 45 | Will underground parking areas have automatic lighting? | Yes | No | <input checked="" type="radio"/> N/A |



Talbot Mackenzie & Associates
Consulting Arborists



636-640 Drake Ave, Esquimalt

Construction Impact Assessment & Tree Preservation Plan

PREPARED FOR: Dimma Pacific Properties Ltd.
Suite 1-1702 Quadra Street
Victoria, BC
V8W 2L8

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

DATE OF ISSUANCE: April 13, 2018

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Talbot Mackenzie & Associates

Consulting Arborists

Jobsite Property: 636-640 Drake Ave, Esquimalt

Date of Site Visit: February 27, 2018

Site Conditions: Two residential lots. No construction activity present. Decreasing in elevation from northeast to southwest.

Summary: Three trees will require removal as a result of this development: Douglas firs #70 and #72 and Grand Fir #71. We also recommend Western Red Cedar #68 be removed, as pruning for building clearance will remove a significant portion of its canopy and we anticipate a decline in the health of the tree associated with the proposed excavation within its critical root zone. Grand Fir #73 may be able to be retained if working room can be minimized around the northwest corner of unit 5 and if the stump of fir #72 is ground rather than pulled. Arbutus #74 may have to be removed if landscaping plans require the existing grades being modified within the tree's critical root zone. A large number of roots from Western Red Cedar #68 are likely to be severed during excavation for unit 4 and clearance pruning will remove a large portion of the canopy. If our recommended mitigation measures are followed, all other trees can be retained without being significantly impacted.

Scope of Assignment: To inventory the existing bylaw protected trees and any trees on neighbouring properties that could potentially be impacted by construction or that are within 3 meters of the property line. Review the proposal to demolish the existing single-family dwellings and accessory buildings, and construct eight new units with accompanying driveways. 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 building and landscape plans.

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.

Locations of new underground service alignments to the proposed units were not available for comment. We recommend that service connections should be designed to preserve the critical roots of trees to be retained.

Summary of Tree Resource: 19 trees and shrubs were inventoried, including several trees within three metres of the north property boundary.

Trees to be Removed: We recommend four trees be removed as a result of the proposed construction:

- The base of **Douglas fir #70** partially overlaps with the footprint of the proposed retaining wall to be constructed north of the asphalt driveway.
- **Grand Fir #71** is within the footprint of unit 5.
- **Douglas fir #72** will be in the area of excavation for the construction of unit 5.
- **Western Red Cedar #68:** This tree is located 3.5m from the footprint of unit 4. A large mass of roots is likely to be encountered during excavation (which, given 1m of working room, will occur 2.5m from the base of the tree), potentially resulting in significant health impacts. In addition, a significant proportion of the crown will have to be pruned for building clearance. The main floor deck is approximately 2.5m away and the crown extends 6m from the fence line. (The crown is already limited in some areas due to competition with surrounding trees). Given that Cedars typically exhibit poor tolerance to disturbance, we anticipate this tree will show signs of significant health stress as a result of the proposed root loss and pruning. Therefore, we recommend it be removed. If the tree is under shared ownership with the south neighbouring property, the homeowner should be notified of proposed impacts.

Potential Impacts on Trees to be Retained and Mitigation Measures

- **Grand Fir #73:** This tree may be able to be retained if excavation for unit 5 does not occur beyond the stump of Douglas fir #72. Large, critical roots from Grand Fir #73 are likely to be encountered northwest of fir #72. We recommend the stump of fir #72 be ground rather than pulled to limit root impacts to tree #73. Furthermore, if possible, we recommend limiting the amount of working room on the west side of unit 5's footprint to minimize the likelihood of encountering roots. Landscape plans indicate that only minor grade changes are required within the tree's CRZ. An arborist should be on site to supervise any construction-related activity within the tree's critical root zone.

If the portion of the driveway that encroaches within the critical root zone of the tree requires excavation down to bearing soil within its footprint and roots are encountered in this area, the health of the tree could be significantly impacted. We recommend a raised permeable driveway be constructed in the area where the driveway crosses over the critical root zone of the trees. The "floating driveway" specifications are attached.

The objective is to avoid root loss and to instead raise the driveway and its base layer above the roots. This may result in the grade of the “floating driveway” being up to 30cm above the existing grade (depending on how close roots are to the surface and the depth of the driveway base layers). It may also mean that some of the A horizon soil layer (rich in organic material and roots) will be left intact below the driveway.

To allow sufficient water to drain into the root systems below, we would also recommend that the driveway not be made of concrete or asphalt. Instead the surface should be made of a permeable material such as permeable asphalt, paving stones or other porous paving materials such as those utilized by Grasspave, Gravelpave, and Grasscrete.

We also recommend the wood fence south of the tree and any other landscape features to be constructed be designed to limit root impacts (e.g. fence posts installed in areas that avoid large roots). If irrigation is to be installed within the CRZ of the tree, we recommend an arborist be consulted to advise on how best to mitigate impacts to critical roots and tree health.

- **Arbutus #74:** Depending on the required grade changes at the east end of the property, this tree may be significantly impacted. If landscaping plans require a significant amount of fill to be added within the critical root zone of the tree, the tree should likely be removed. The survival rates of transplanted Arbutus trees are low.
- **Trees #66-67:** These trees are 2.5-3.5m from the edge of the proposed driveway. If the new driveway requires excavation down to bearing soil within its footprint, we recommend a raised permeable driveway be constructed in the area where the driveway crosses over the critical root zone of the trees.
- **Grand Fir #69:** This tree is 3-3.5m from a proposed retaining wall to the west. Large roots are likely to be encountered during excavation at this distance from the tree. To minimize root impacts, we recommend the area be dug by hand or a combination of hydro-vac, small excavation machinery, and hand-digging, and that the wall be designed and constructed to preserve large roots. An arborist should be on site during any excavation and for the removal of the existing driveway and retaining walls. We also recommend that the existing grades be maintained where possible within the tree’s critical root zone. No fill should be placed against the tree’s trunk.
- **Trees NT3-NT5:** Roots from these trees may be encountered during excavation for construction of unit 7. We recommend an arborist be on site to supervise any excavation within the tree’s critical root zones and that additional space around the building footprint for working room be minimized. Barrier fencing should be erected as close to the building footprint as possible to limit soil compaction within their critical root zones. The neighbour should be notified that the trees may incur minor health impacts.
- **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.

- **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.
- **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 buildings:** The demolition of the existing houses 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.
- **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.

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- **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.

Yours truly,

Talbot Mackenzie & Associates
ISA Certified Consulting Arborists

Encl. 2-page tree resource spreadsheet, 1-page site survey with trees, 6-page site and building plans, 1-page landscaping plans, 1-page barrier fencing specifications, 1-page floating driveway 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.

Tag	Common Name	Latin Name	DBH (cm) ~ approximate	CRZ (m)	Crown Spread (m)	Health	Structure	Relative Tolerance	Remarks and Recommendations	Retention Status
69	Grand Fir	<i>Abies grandis</i>	81	12.0	12	Fair	Fair/poor	Poor	Pruned heavily for line clearance. Multiple codominant leaders. Likely upheaving driveway	Retain
70	Douglas fir	<i>Pseudotsuga menziesii</i>	70, 56	15.5	12	Fair	Fair	Poor	Pruned for line clearance. Pitch exudation	X
NT1	Cedar hedge	<i>Thuja spp.</i>	Multistem	1.5	1	Fair	Fair	Poor	Neighbour's 9 plants. Approximately 10cm DBH. Browning foliage	Retain
NT2	Garry oak	<i>Quercus garryana</i>	~60	6.0	14	Good	Fair	Good	Neighbour's 3m from PL	Retain
NT3	Norway spruce	<i>Picea abies</i>	~40	6.0	6	Fair/poor	Fair/poor	Poor	Neighbour's. Adjacent to fence. Trunk bend. Dieback	Retain
NT4	Weeping sequoia	<i>Sequoiadendron giganteum</i> 'pendulum'	~25	4.0	5	Fair	Fair	Poor	Neighbour's. Adjacent to fence.	Retain
NT5	Norway spruce	<i>Picea abies</i>	~25, 20	5.5	6	Fair	Fair/poor	Poor	Neighbour's. Adjacent to fence. Codominant union at base. Dieback	Retain
68	Western Red Cedar	<i>Thuja plicata</i>	53	8.0	10	Good	Fair	Poor	Possibly shared with south neighbour. Multiple leaders.	TBD
NT6	Dogwood	<i>Cornus spp.</i>	~30	4.5	10	Good	Fair	Poor	Neighbour's. Adjacent to fence.	Retain
67	Garry oak	<i>Quercus garryana</i>	66	6.5	14	Fair	Good	Good	Some deadwood	Retain

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**636-640 Drake Ave
Tree Resource**

Tag	Common Name	Latin Name	DBH (cm) ~ approximate	CRZ (m)	Crown Spread (m)	Health	Structure	Relative Tolerance	Remarks and Recommendations	Retention Status
66	Cherry	<i>Prunus spp.</i>	25, 23, 23...	6.5	14	Fair/poor	Fair/poor	Moderate	6 stems. Dieback	Retain
NT7	Holly	<i>Ilex spp.</i>	~30	3.0	6	Good	Fair	Good	Neighbour's. 2m from fence	Retain
71	Grand Fir	<i>Abies grandis</i>	67	10.0	10	Good	Poor	Poor	Codominant union at 3m. 1 stem topped. Severe trunk bends	X
72	Douglas fir	<i>Pseudotsuga menziesii</i>	91	13.5	14	Good	Fair	Poor	Ivy at base. extended limbs.	X
73	Grand Fir	<i>Abies grandis</i>	75	11.5	8	Fair	Fair/poor	Poor	Ivy at base. Dieback. Likely topped at apex	TBD
NT8	Apple	<i>Malus spp.</i>	~20	2.5	2	Fair	Poor	Moderate	Neighbour's. Adjacent to fence.	Retain
NT9	Apple	<i>Malus spp.</i>	~15, 10	2.5	2	Fair	Poor	Moderate	Neighbour's. Adjacent to fence.	Retain
NT10	Leyland Cypress hedge	<i>Cupressus x leylandii</i>	Multistem	2.0	3	Good	Fair	Good	Neighbour's. Adjacent to fence. 20 stems, 7-30cm DBH. Overhangs 1m.	Retain
74	Arbutus	<i>Arbutus menziesii</i>	4	0.5	3	Good	Fair	Poor	Young tree	TBD