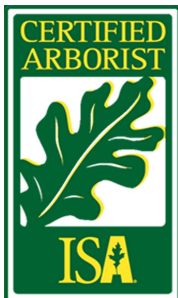


ROOT DOWN CONSULTANTS

LANDSCAPE ARCHITECTURE, CONSTRUCTION & ARBORICULTURE SPECIALIST



ARBORIST REPORT



PROPERTY OWNER/APPLICANT: Hui Home LLC
2112 22nd Ave S
Seattle, WA 98144
P: 206-910-1989

PREPARED BY: Root Down Consultants, LLC

PROJECT SITE LOCATION: 30xx 69th Ave SE, Parcel 509330-1316
Mercer Island, WA

DATE: April 10, 2020

INTRODUCTION

The project plan is to construct a single family home on a vacant lot in Mercer Island, Washington. The project manager has retained Root Down Consultants to:

- Evaluate tree inventory pursuant to the requirements in the Mercer Island City Code (MICC) Chapter 19.10.
- Determine extent of tree preservation and tree health with the existing site plan.
- Provide general recommendations pertaining to tree preservation for the proposed development.

PROJECT SITE

The project site is a single 8,403 square foot parcel (# 509330-1316), zoned R-8.4, has no built structures and is mostly an open grass yard with perimeter trees. The site slopes down from east to west towards 69th Ave SE.

TREE CONDITION & TREE EVALUATION

All trees were measured at a point 4-1/2 feet above the ground, the diameter at breast height (DBH). A total of 18 trees were found between the provided tree survey and my field assessment and assessed according to the Mercer Island City Code (MICC).

Tree species composition is a mix of native and ornamental: Western Red Cedar (*Thuja plicata*), Red Alder (*Alnus rubra*), Bigleaf Maple (*Acer macrophyllum*), Shore Pine (*Pinus contorta* var. *contorta*), Paper Birch (*Betula papyrifera*) and Japanese Maple (*Acer palmatum*). Tree # 1-12 and #15 are outside of the parcel boundary but are in close proximity to the development proposal on adjacent right-of-way and are included in this report.

The majority of the trees on site are in fair to poor health due to multiple significant defects caused by previous topping of central leader or severe crown topping which cannot be corrected. There is risk that

these trees will pose a future safety hazard to existing or proposed site improvements. In addition, the site contains heavy stands of invasive weeds including Himalayan Blackberry, English Ivy and Bamboo.

In my field assessment of the 18 trees found on site, 1 is classified as *large* (defined as dbh of 10-24”), and 17 are classified as *exceptional* (defined as dbh 24” or greater or by defined tree species or in a grove) and 0 are classified with a dbh 36” or greater.

TREE RETENTION & REPLACEMENT CALCULATIONS

TABLE 1 - Summary of Tree Evaluation

	CRITICAL AREA	CRITICAL AREA BUFFER	NON-CRITICAL AREA
SMALL TREES	0	0	0
LARGE TREES	0	0	1
EXCEPTIONAL TREES			17
EXCEPTIONAL TREES MORE THAN 36"	0	0	0
TOTAL	0	0	18

TABLE 2 - Summary of Tree Retention

	PERCENT	QUANTITY
REQUIRED TREE RETENTION OF LARGE TREES	30%	5
PLANNED TREE RETENTION	83%	15

TABLE 3 - Summary of Tree Replacement

TREE CLASSIFICATION	REPLACEMENT RATE	REMOVED TREES	REPLACEMENT TREES
LESS THAN 10-INCHES	1 TREE	0	0
LARGE TREES 10-24-INCHES	2 TREES	0	0
EXCEPTIONAL TREES 24-36-INCHES	3 TREES	3	9
TREES MORE THAN 36-INCHES & ANY EXCEPTIONAL TREES	6 TREES	0	0
	TOTAL	3	9

TREE RETENTION & REPLACEMENT RECOMMENDATIONS

Mercer Island City Code (MICC), Chapter 19.10, requires a minimum of 30% of large trees to be retained. The project plan maximizes tree retention and exceeds the 30% tree retention requirements, retaining 83% of existing trees associated with project construction.

Per MICC tree replacement calculations, a minimum of 9 trees shall be planted as replacement for the 3 trees removed as part of the proposed development. It is noted of the 3 trees planned for removal, tree #14 is in poor condition and would not be viable for retention due to severe topping of central leader and tree #13 is in fair to poor condition with a low likelihood of longevity due to structural defects caused by topping.

Replacement trees shall be composed primarily of species native to the Pacific Northwest and planted from October 1-April 1 per MICC 19.10. Conifer trees shall be at least 6 feet in height and deciduous trees shall be at least 1 ½ inches caliper.

It is recommended that all weed species be removed from site including: English Ivy, Himalayan Blackberry and Bamboo. If not controlled, many trees will be at a higher risk of mortality as these invasive species compete for resources and will reduce the health and longevity of trees designated to be saved. It is recommended that invasive removal occur mechanically and/or by a Washington State licensed pesticide applicator following state and local laws as may be applicable per the Mercer Island Municipal Code.

TREE PROTECTION DURING CONSTRUCTION

To ensure long-term viability of trees identified to be saved, tree protection measures shall be installed and be shown on a tree protection and replacement plan per MICC 19.10. It is recommended that tree protection barriers be installed 5 feet beyond the drip line of trees designated to be saved prior to land disturbance. Areas inside the tree protection barriers will be referred to as the critical root zone (CRZ).

Tree protection barriers are recommended to be a minimum of four feet high chain link or high visibility safety fence (HVF) and be clearly signed as a do not enter area. Designated tree protection areas are recommended to have all non-native invasive weeds removed by hand or by a WSDA licensed pesticide applicator.

Construction operations are recommended to be conducted so vehicles and equipment do not operate, haul, or perform other activities within the CRZ of trees designated to be saved. It is recommended that there be no equipment activity, including rototilling or cultivation, within the CRZ. Topsoil depth greater than 2 inches should not be placed over the CRZ and should not cover more than 20% of the root system. Compost blanket (3 inches of fine compost) and wood chip mulch (3 inch depth) is recommended to condition and protect the entire CRZ of existing trees.

No irrigation lines, trenches or other utilities should be installed within the CRZ. If unable to avoid conflict of the CRZ with underground irrigation or utilities, work shall be performed by boring or tunneling under the tree root system.

Cuts or fills should impact no more than 20% of a tree's root system. This can vary by age, species and condition of a tree at the time of injury. Young and healthy trees are better able to tolerate root loss than mature and poor health trees. It is recommended to have an ISA certified arborist monitor site grubbing and grading work if within the CRZ limits.

When large roots of trees designated to be saved are exposed by construction operation, they should be wrapped with heavy, moist material, such as burlap or canvas, for protection and to prevent excessive drying. The material should be kept moist and securely fastened until the roots are covered to finish grade. All material and fastening material should be removed from the roots before covering. All roots 1 inch or larger in diameter, that are damaged, shall be pruned with a sharp saw or pruning shear. Pruning work is recommended to be performed by a certified ISA arborist.

TREE MAINTENANCE

All replacement trees shall be maintained in a healthy condition for a period of five years after planting. Any replacement tree that dies, becomes diseased, or is removed during this five-year time period shall be replaced, per MICC 19.10.

SUMMARY

The site plan retains 83% of the large trees associated with the project development and is in compliance with Mercer Island Municipal Code 19.10. The proposed removal of 3 exceptional trees will require a total tree replacement of 9 trees.

Should you have any questions or concerns, or if I may be of further assistance, please feel free to call or email.

Sincerely,

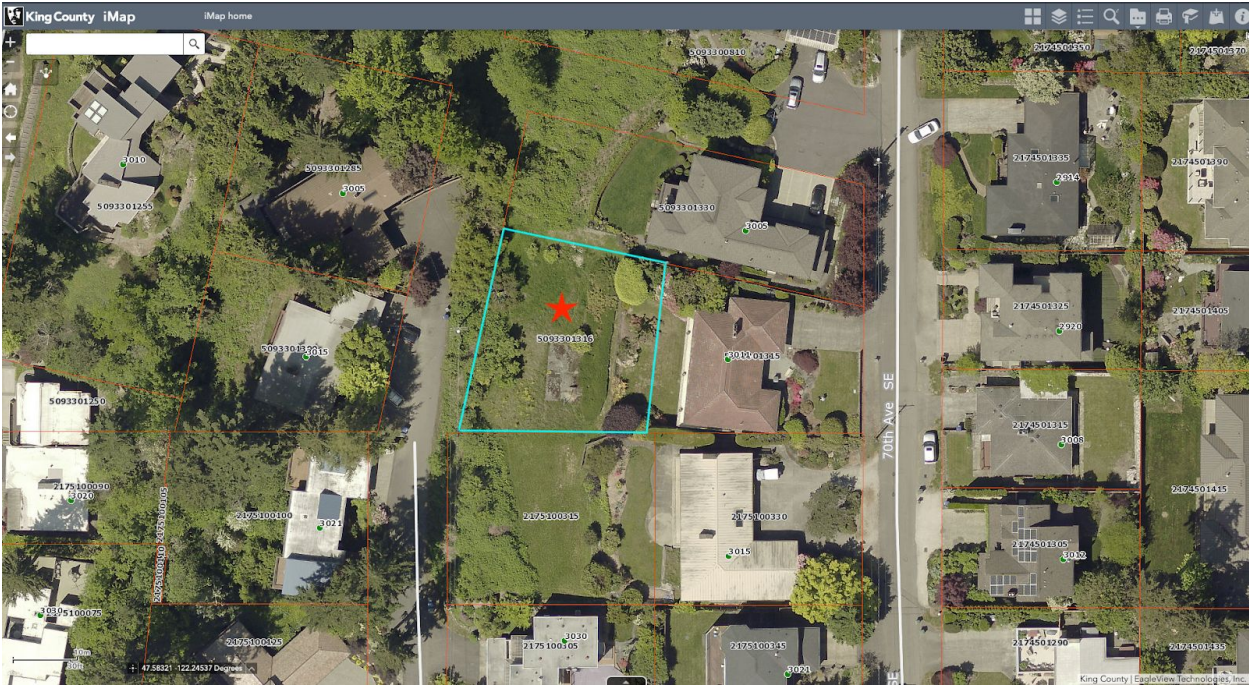


C.N. Floreani, PLA

ISA Certified Arborist #PN-8534A

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ATTACHMENT 1 - AERIAL PHOTO



King County iMap 2019 aerial photo showing the landscape character and cover within the parcel boundary.

ATTACHMENT 2 - SITE PLAN WITH TREES



SITE PLAN

FULL SIZE SCALE 1" = 40'

YARD CALCULATIONS

REAR YARD = 25'
 FRONT YARD = 20'
 SIDE YARD = 105.29 * 17% = 17.9'
 MIN. SIDE YARD = 5.9',
 OTHER SIDE YARD = 12'

PROJECT INFORMATION

OWNER: HUI HOME LLC
 JURISDICTION: MERCER ISLAND
 PARCEL NUMBER: 509330-1316
 ZONING: R-8.4
 LOT AREA: 8403 SF
 MAX. SLOPE: X

0 06.24.18 SCHEMATIC 1	
A RESIDENTIAL NEW CONSTRUCTION HU RESIDENCE	
DATE	
DESCRIPTION	
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ATTACHMENT 3 - TREE INVENTORY TABLE

TREE #	COMMON NAME		DBH (INCHES)	TREE CLASSIFICATION: LARGE (MIN.10") EXCEPTIONAL (24" OR BY SPECIES)	RETAIN/REMOVE	CONDITION	CRZ/D RIP LINE (FEET)	NOTES
1	WESTERN RED CEDAR	THUJA PLICATA	6	GROVE-EXCEPTIONAL	RETAIN	FAIR-POOR	6	LEADER TOPPED
2	WESTERN RED CEDAR	THUJA PLICATA	10	GROVE-EXCEPTIONAL	RETAIN	FAIR-POOR	10	HEAVY LEANING
3	WESTERN RED CEDAR	THUJA PLICATA	8	GROVE-EXCEPTIONAL	RETAIN	FAIR-POOR	8	LEADER TOPPED
4	WESTERN RED CEDAR	THUJA PLICATA	10	GROVE-EXCEPTIONAL	RETAIN	FAIR-POOR	10	LEADER TOPPED
5	WESTERN RED CEDAR	THUJA PLICATA	7	GROVE-EXCEPTIONAL	RETAIN	FAIR-POOR	7	LEADER TOPPED
6	WESTERN RED CEDAR	THUJA PLICATA	10	GROVE-EXCEPTIONAL	RETAIN	FAIR-POOR	10	LEADER TOPPED, HEAVY IVY
7	WESTERN RED CEDAR	THUJA PLICATA	11	GROVE-EXCEPTIONAL	RETAIN	FAIR-POOR	11	LEADER TOPPED
8	WESTERN RED CEDAR	THUJA PLICATA	9	GROVE-EXCEPTIONAL	RETAIN	FAIR-POOR	9	LEADER TOPPED
9	WESTERN RED CEDAR	THUJA PLICATA	10	GROVE-EXCEPTIONAL	RETAIN	FAIR-POOR	10	LEADER TOPPED
10	WESTERN RED CEDAR	THUJA PLICATA	9	GROVE-EXCEPTIONAL	RETAIN	FAIR-POOR	9	LEADER TOPPED
11	WESTERN RED CEDAR	THUJA PLICATA	8	GROVE-EXCEPTIONAL	RETAIN	FAIR-POOR	8	LEADER TOPPED, HEAVY IVY
12	WESTERN RED CEDAR	THUJA PLICATA	14	GROVE-EXCEPTIONAL	RETAIN	FAIR-POOR	20	LEADER TOPPED
13	SHORE PINE	PINUS CONTORTA VAR. CONTORTA	17	EXCEPTIONAL	REMOVE	FAIR-POOR	16	LEADER TOPPED, HEAVY IVY
14	BIGLEAF MAPLE	ACER MACROPHYLLUM	35	EXCEPTIONAL	REMOVE	POOR	35	LEADER TOPPED, HEAVY IVY, SUCKERING
15	RED ALDER	ALNUS RUBRA	27	EXCEPTIONAL	REMOVE	GOOD	27	
16	JAPANESE MAPLE	ACER PALMATUM	17	EXCEPTIONAL	RETAIN	FAIR	14	CROWN TOPPING
17	PAPER BIRCH	BETULA POPYRIFERA	14	LARGE	RETAIN	FAIR-POOR	14	CROWN TOPPING
18	JAPANESE MAPLE 'ATROPURPUREUM'	ACER PAPMATUM VAR. ATROPURPUREUM	20	EXCEPTIONAL	RETAIN	FAIR	18	CROWN TOPPING

ATTACHMENT 4 - SITE PHOTOS



Tree #12 - Western Red Cedar - Topped Leader



Tree #13 - Shore Pine - Topped Leader



Tree #14 - Big Leaf Maple - Topped Leader



Tree #16 - Japanese Maple - Topped Crown

ATTACHMENT 5 - RATING CATEGORY TABLE

Assessment of tree condition considers health, structure and form. Each may be described in rating categories that will be translated into a percent rating.

RATING CATEGORY	CONDITION COMPONENTS			PERCENTAGE RATING
	HEALTH	STRUCTURE	FORM	
EXCELLENT	High vigor and nearly perfect health with little or no twig dieback, discoloration or defoliation.	Nearly ideal and free of defects.	Nearly ideal for the species. Generally symmetric. Consistent with the intended use.	81 - 100%
GOOD	Vigor is normal for species. No significant damage due to diseases or pests. Any twig dieback, defoliation or discoloration is minor.	Well-developed structure. Defects are minor and can be corrected.	Minor asymmetries/deviations from species norm. Mostly consistent with the intended use. Function and aesthetics are not compromised.	61 - 80%
FAIR	Reduced vigor. Damage due to insects or diseases may be significant and associated with defoliation but is not likely to be fatal. Twig dieback, defoliation, discoloration and/or dead branches may compromise up to 50% of the crown.	A single defect of a significant nature or multiple moderate defect. Defects are not practical to correct or would require multiple treatments over several years.	Major asymmetries/deviations from species norm and/or intended use. Function and/or aesthetics are compromised.	41 - 60%
POOR	Unhealthy and declining in appearance. Poor vigor. Low foliage density and poor foliage color are present. Potentially fatal pest infestation. Extensive twig and/or branch dieback.	A single serious defect or multiple significant defects. Recent change in tree orientation. Observed structural problems cannot be corrected. Failure may occur at any time.	Largely asymmetric/abnormal. Detracts from intended use and/or aesthetics to a significant degree.	21 - 40%
DEAD	Poor vigor. Appears dying and in the last stages of life. Little live foliage.	Single or multiple severe defects. Failure is probable or imminent.	Visually unappealing. Provides little or no function in the landscape.	0- 20%

ATTACHMENT 6 - CONDITIONS

Express conditions of relying upon and accepting this report. Owner client agrees to the following by acceptance of or reliance upon this report.

1. Any legal description provided to Root Down Consultants is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable by the owner. No responsibility is assumed, expressed or implied, for matters legal in character. Any and all property is evaluated as though free and clear, under responsible ownership and competent management.
2. It is assumed that any property evaluated is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations, unless otherwise stated.
3. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, Root Down Consultants can neither guarantee nor be responsible for the accuracy of information from any outside sources.
4. Root Down Consultants shall not be required to give testimony or attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services.
5. Loss or alteration of any part of this report invalidates the entire report.
6. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other person or entity than the person to whom it is addressed, without the prior express written consent of Root Down Consultants.
7. 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 express written consent of the consultant; and in particular as to value conclusions, identity of the consultant, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant.
8. This report and values expressed herein represent the opinion of Root Down Consultants, and the consultant's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.
9. Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.
10. Unless expressed otherwise: (1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and (2) the inspection is limited to a visual examination of accessible items without dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the tree, plant or property in question may not arise in the future.

11. Any statements, representations, or conclusions offered by Root Down Consultants or its employees are considered the opinion only of Root Down Consultants, and these statements, representations, or conclusions do not constitute an express or implied warranty of any kind. To the fullest extent permitted by law, Root Down Consultants, its officers, employees, and agents shall not be liable for any direct, special, incidental, or consequential damages under any circumstance whatsoever, whether arising in tort, or contract, including without limitation breach of contract, willful misconduct, strict liability, breach of warranty, negligence, error or omission, whether professional or non-professional, nor for any loss, claim, expense, or damage caused by or arising out of Root Down Consultants's observations of any property, or services provided. The sole, only and absolute remedy for this report, including any errors made in any observations, findings, conclusions, recommendations, or actions by Root Down Consultants, its officers, directors or employees shall be the refund of the fee paid for this report. Any damages, including incidental, consequential, special or punitive damages of any kind are expressly waived by the person or entity accepting this report. The prospective owner and/or client further agrees that no suit, legal action or claim of any kind shall be asserted against Root Down Consultants after the earlier of substantial completion of services provided or termination of services of Root Down Consultants. Root Down Consultants shall not indemnify or hold others harmless for any loss, claim, expense, or damage arising out of Root Down Consultant's observations at the property, or related to services provided. Root Down Consultants accepts no responsibility for interpretation or opinions offered by any third party. Unless otherwise stated to the contrary herein, whomever accepts or relies on this report expressly releases Root Down Consultants, its officers, directors and employees from and of all liability associated with the services provided herein and associated herewith.

Root Down Consultants further disclaims any liability associated with their efforts for any person or entities other than the parties to this agreement, whether original or as intended or unintended third party beneficiaries.

NOTE: There are many conditions affecting a tree's health and stability, which may be present and cannot be ascertained, such as root rot, previous or unexposed construction damage, internal cracks, stem rot and more which may be hidden or otherwise readily ascertainable. Even healthy trees can fail under normal or storm conditions. The only way to eliminate all risk is to remove all trees within reach of all targets. Annual monitoring by an ISA Certified Arborist will reduce the potential of tree failures. It is impossible to predict with certainty that a tree will stand or fail, or the timing of the failure. It is considered an 'Act of God' when a tree fails, unless it is directly felled or pushed over by a person's actions.