

May 12, 2020

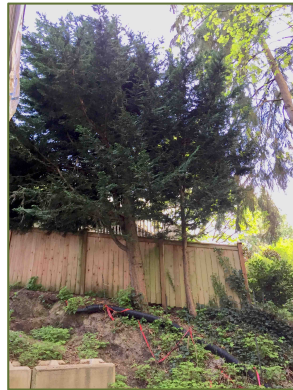
TO: Andrew Park, Managing Partner - Viewcrest Capital
SUBJECT: Post-construction Arborist Report
4703 – 88th Avenue SE
Mercer Island, Washington 98040

FROM: Arbutus Design LLC

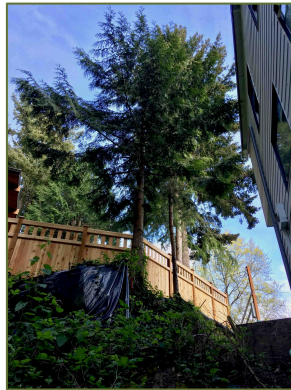
PREPARED BY: M. Eliza Davidson, Certified Arborist PN-5767A



Offsite Trees B, A (right)



Offsite Tree C (center)



Tree 2 (foreground)



Tree 7 (from south)



View from house into ivy & laurel infested slope along W side - Tree 12 slightly left of center, Tree 7 at right edge

Assignment

Owner representative Andrew Park contacted me about arborist services needed to reinstate the building permit for this existing, incomplete house on Mercer Island. Construction ceased 2-3 years ago and ownership ultimately reverted to lender Viewcrest Properties. This report addresses City of Mercer Island Tree Code corrections issued in

March 2020. Building official John Kenny stipulated that a professional arborist complete the following tasks, based on a site inspection to evaluate existing trees:

- Verify retained tree count and document current, post construction condition
- Provide a tree replacement plan to offset 8 trees originally authorized for removal

This report fulfills this assignment.

Methodology

To familiarize myself with the project, I reviewed the original set of permit drawings provided by the client, and the pre-construction arborist's report produced by Sue Nicol. I also reviewed and discussed Tree Code corrections with City Arborist John Kenny to clarify requirements this report needs to satisfy. I made two visits to the property, on April 17th and 30th, the first for an overview tour with the client, the second to complete fieldwork, inspect existing trees and evaluate siting options for replacement trees.

In addition, I noted issues related to, and opportunities to improve, the health of native vegetation on site, particularly trees. I used a printed copy of pertinent tree and site plans to locate trees on site, hand recorded observations, and took documenting photographs with an iPhone 6 camera. In addition to the native ravine slope, I also looked carefully at the east, front side of the property where hardscape and landscape improvements remain to be done before project completion. I developed preliminary planting plan ideas.

On return to my office I downloaded, edited and selected photographs useful in producing my report. I then developed the narrative and related exhibits that comprise this report. These include a Table of Trees, a restoration planting plan and a sketch plan for entry plantings that identifies additional replacement trees and their locations.

Existing Trees

Construction had virtually no impact on the great majority of on- and offsite trees identified for retention. The area of disturbance was limited to the building footprint and immediate surroundings, and the southeast corner of the property, the entry side. The attached Table of Trees documents trees retained, their condition and management needs. The following trees were within range of construction:

- Offsite Trees A, B & C
- Trees 2, 7 & 12 (peripherally)

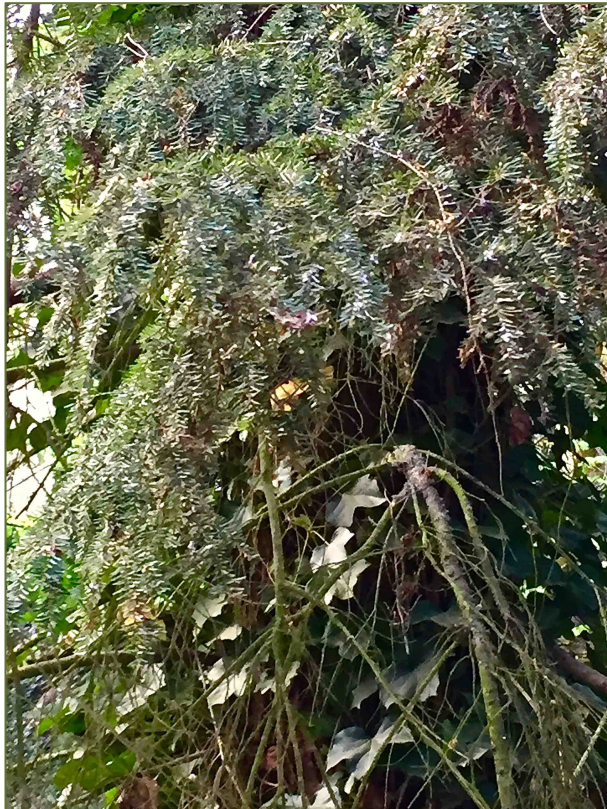
I made special note of these six trees, to determine what, if any, adverse impacts resulted from construction up until 2018 when work on the project was suspended. I have included management recommendations to mitigate observed impacts. I anticipated and found loss of root mass, in all cases an unavoidable consequence of close proximity of trees to approved excavation. I saw no evidence of careless disregard for tree protection. Silt protection fencing was still in place.

It is unusual to complete a post-construction tree inspection years after site disturbance occurred. An advantage of this delay is that construction damage increasingly manifests itself with the passage of time. I was pleasantly surprised to find little visible evidence of

tree decline directly attributable to construction activity. Major mitigation doesn't appear warranted. There are, however, individual management actions included in the Table of Trees that can improve the survivability of these trees.

In the lone case of Tree 7, I recommend removal. Any causal connection with construction is very limited, since the area of root disturbance was minimal. At most I would consider it a minor stressor to a tree of a species vulnerable to fatal attack by insects, disease and increasing drought. In 2015, this 25-inch dbh (diameter at breast height) *Tsuga heterophylla* just below the future house was in good condition. My removal determination is driven both by Tree 7's decline in condition from its pre-construction status, and by the previously un-noted discovery of a major trunk defect high in the canopy at very close range to the house.

As illustrated below, many lower limbs are dead or dying, typical of the bottom-up progression of damage from feeding hemlock woolly adelgid -*Adelges tsugae* that heavily infests needles of this tree. Hemlocks can die from this pest within four years. Unfortunately the adelgid by now is widespread in our region, including other trees on site. The presence of root or trunk decay also cannot be ruled out. Invisible internal rot is a common cause of trunk failure, but impossible to detect without invasive resistance drilling. A dead tree is a dangerous tree.



Compounding this issue is the presence of tight co-dominant leaders originating high on the ivy-swathed trunk. The secondary leader leans toward the new house's deck and roof. The owner has experienced limb drop onto the roof in windy weather, but the much greater concern is breakout of this entire leader. The house and its occupants will be highly vulnerable to a potentially fatal failure. The extra weight of the mantle of ivy that grows to

60 feet or more is a compounding factor, as is the fact that thick trunk ivy traps moisture and creates conditions conducive to decay.



Tree 7's high, overhanging co-dominant leader seen from south on left, north on right

Tree Replacement Plan

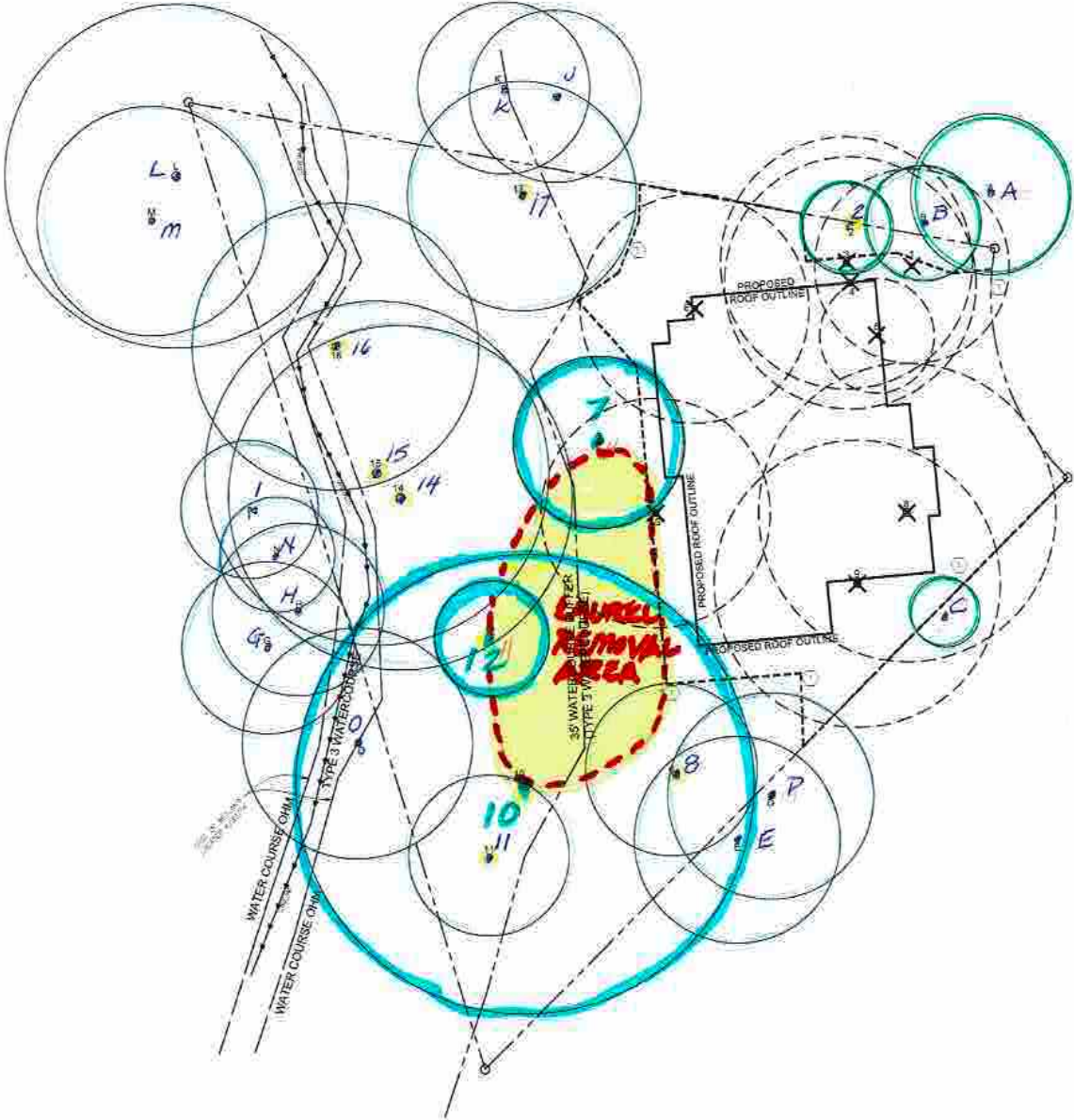
The expired building permit stipulated that eighteen (18) replacement trees be planted to offset the number of trees removed to accommodate construction. To offset the anticipated removal of Tree 7, I recommend planting 4 additional trees, using a two-pronged approach to meet the overall requirement, split between the developed entry landscape and the undeveloped, somewhat degraded ravine.

In the developed landscape at the front of the house, there is room to plant at least 10 new trees. Approximate placement is shown on the attached Landscape Plan. Plantings will include both ornamental and native species (including vine maple, hybrid Pacific dogwood and several kinds of understory plants).

The steep forested slope west of the house can accommodate additional trees but not the full remaining 12. This slope is heavily infested with English laurel shrubs and ivy aggressively climbing trees. To create space to plant additional trees, several large laurels need to be removed. I recommend that all laurels between Trees #7 and #10 upslope of Tree #12 be cut to the ground, stumps treated with herbicide and debris hauled out for disposal offsite. Treatment by a State-certified pesticide applicator would provide enhanced control. Removing large quantities of invasive laurel will significantly improve conditions for regeneration of native understory.

In addition, I recommend controlling all tree-climbing ivy to protect the property's existing large trees from destruction. To do so, ivy should be severed at 4 feet above ground and removed

from the trunk below, and cleared away from tree's base to create a six-foot "survival ring." For safety, ivy above four feet should not be removed, but instead left to die naturally. Cleared ivy can be left on site if rolled up and piled on large sheets of cardboard to discourage re-rooting. Ivy piles contribute to wildlife habitat. Approximate restoration area is indicated in yellow below. On-site trees that require ivy control are marked in yellow as well.



Once cleared, new native trees can be planted. I recommend adding a minimum of 5 trees, a combination of 3 conifers and 2 deciduous trees consistent with typical, mixed lowland Puget Basin forest composition, as follows:

- 2 *Thuja plicata* Western red cedar
- 1 *Abies grandis* Grand fir
- 1 *Rhamnus purshiana* Cascara
- 1 *Acer circinatum* Vine maple

I have purposely excluded *Tsuga heterophylla* – Western hemlock due to its abundance in the ravine and uncertain prospects for long-term species survival. I have included Grand fir and Cascara to increase forest diversity. Both species are compatible with a moist, semi-shaded environment and are mostly free of insect and disease problems.

If species availability proves problematic, counts within this palette could be adjusted to meet the required minimum total. To facilitate safe transport into the steep ravine and enhance prospects for successful tree establishment, I recommend that 2 - 5 gallon container nursery stock be used rather than caliper or balled & burlapped material.

Planting should be done with care to:

- Keep stock from drying out before planting
- Prepare planting hole at least 2x container diameter
- Moisten roots and soil well before planting
- Remove broken branches and prune any circling roots before planting
- After planting create soil ledge or saucer to hold irrigation water then water deeply
- Apply 3” deep organic mulch, avoiding direct trunk contact
- Water at least weekly during dry weather to 1” minimum soil penetration

Conclusion

I am confident that this report will provide all documentation needed to address City of Mercer Island Tree Code corrections. Please let me know if you require additional professional help as the project moves from permitting to completion. Thank you for this opportunity to share provide my arboricultural, forest restoration and landscape design expertise. The site is beautiful and the circumstances unique. Hopefully you are now a step closer to finishing the long-delayed construction and closing out this project.

Attachments

Table of Trees
Landscape Planting Plan

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