

Kielty Arborist Services LLC

Certified Arborist WE#0476A

P.O. Box 6187

San Mateo, CA 94403

650- 515-9783

November 4, 2019

Bolt Design Studio

Attn: Nadia Pichko

Site: 1561 Barton Drive , Sunnyvale CA

Dear Ms. Pichko,

As requested on Thursday, October 24, 2019, I visited the above site for the purpose of inspecting and commenting on the trees. A new home is being designed for this site, and as required a tree survey and tree protection plan is required as a part of obtaining the building permits for this site.

Method:

All inspections were made from the ground; the trees were not climbed for this inspection. The trees in question were located on an existing topography map provided by you. The trees were then measured for diameter at 54 inches above ground level (DBH or diameter at breast height). The trees were given a condition rating for form and vitality. The trees condition rating is based on 50 percent vitality and 50 percent form, using the following scale.

1	-	29	Very Poor
30	-	49	Poor
50	-	69	Fair
70	-	89	Good
90	-	100	Excellent

The height of the trees was measured using a Nikon Forestry 550 Hypsometer. The spread was paced off. Comments and recommendations for future maintenance are provided.

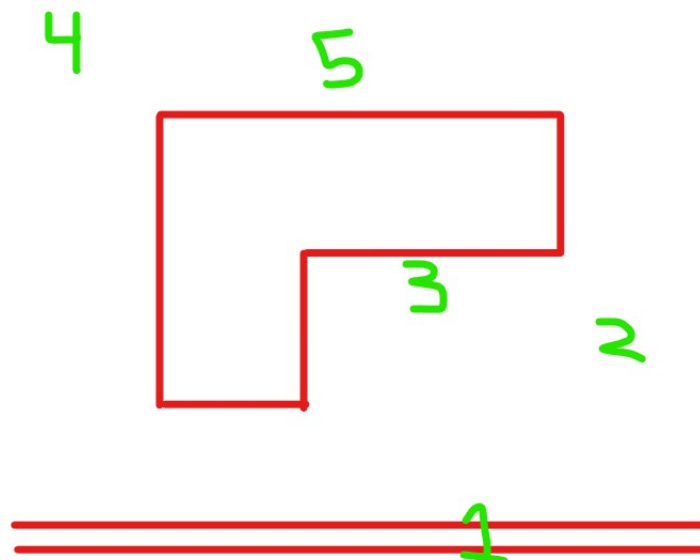
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Survey:

Tree#	Species	DBH	CON	HT/SP	Comments
1P	Magnolia (<i>Magnolia grandiflora</i>)	16.0	70	30/30	Good vigor, fair form, street tree.
2	Privet (<i>Ligustrum japonicum</i>)	6.5-6-5	45	15/8	Fair vigor, poor form, topped, multi leader at 1 foot, decay at root crown.
3	Cherry (<i>Prunus sp.</i>)	9.1	55	12/12	Fair vigor, fair form, minor dead wood.
4P	Mexican fan palm (<i>Washingtonia robusta</i>)	18.0	45	20/6	Fair vigor, fair form, poor location, directly under high voltage lines.
5P	Liquidambar (<i>Liquidambar</i>)	21.7	40	50/30	Fair vigor, poor location, pruned for utilities on one side of canopy, heavy towards home, 2 large broken limbs in tree, 4" failed limb resting on roof, hazard.
6P	Liquidambar (<i>Liquidambar styraciflua</i>)	18.0	40	50/20	Poor vigor, poor form, abundance of dead limbs, history of limb loss, drought stress, heavy towards home and driveway.

*-indicates neighbors tree **P**-Indicates protected tree by city ordinance.



Showing tree locations on hand drawn map

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Summary:

All trees measuring 12 inches or greater in diameter are protected trees in the city of Sunnyvale. Trees #1, 4, 5, and 8 are protected trees due to their recorded diameter. Magnolia tree #1 is a street tree in good condition and is to be retained and protected for this project. It is recommended to heavily irrigate the tree protection zone for the magnolia tree once a week. The remaining protected trees are all in poor condition and proposed for removal. Below is a description of the protected trees proposed for removal, followed by a tree protection plan for Magnolia street tree #1 to be retained.

Showing magnolia street tree #1 to be retained



Protected trees (12 inches in diameter or larger) proposed for removal:

Mexican fan palm tree #4 is located directly underneath high voltage lines. Once the tree reaches the vertical height to be in contact with the high voltage lines, the tree will need to be removed. Palm trees are monocots not dicots, and only have one apical growing point. Once this is lost because of the necessary pruning, the tree will die. Tree removal is imminent soon regardless of the proposed construction.

Showing palm tree #4 directly under high voltage lines

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Liquidambar tree #5 is in poor condition. The tree has been repeatedly pruned for high voltage line clearance only on one side of the tree's canopy. The remaining portion of the canopy has been left to grow heavy over the existing home on site. The off balanced canopy has resulted in limb loss. A total of 3 widow makers (actively failing limbs) were observed in the tree's canopy. A large failed limb measuring 4 inches in diameter was observed resting on the roof of the home. Due to the off balanced canopy, the tree is at high risk of limb failure. Tree removal is recommended as this is the only way to eliminate the high risk of limb failure.

Showing liquidambar tree #5



Liquidambar tree #6 is in poor condition. This tree is located near the existing driveway on site. Large dead sections were observed within the tree's canopy. A history of limb loss was also observed. The tree is in decline likely due to drought stress. Tree removal and replacement is recommended as the tree is not expected to improve with mitigation measures applied.

Showing liquidambar tree #6

Replacement trees:

Five new 24-inch box trees are to be planted on site as replacement trees for the lost canopy. The following tree protection plan will help to insure the future health of the retained magnolia street tree.

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Tree Protection Plan:

Tree protection zones should be established and maintained throughout the entire length of the project. Fencing for the protection zones should be 6-foot-tall metal chain link (minimum 12 gauge) supported by 2 inch galvanized iron post pounded into the ground by no less than 2 feet. The support poles should be spaced no more than 10 feet apart on center. No excavation shall be allowed inside tree protection zones without the Site Arborist consent. Signs should be placed on fencing signifying "Tree Protection Zone - Keep Out". No materials or equipment should be stored or cleaned inside the tree protection zones. It is recommended to mulch the tree protection zones using 4-6 inches of wood chips. The magnolia street tree is to be protected by fencing off the entire street tree planting pit when underneath the dripline of the tree.

Root cutting

Any roots to be cut should be monitored and documented (not expected for this site). Large roots measuring 2 inches in diameter or larger will need to be inspected by the Project Arborist before being cut. If possible, roots should be cut back to sound lateral roots under the supervision of the Project Arborist. The Project Arborist will likely recommend irrigation if root cutting is significant. Cut all roots clean with a saw or loppers. Roots to be left exposed for a period of time should be covered with layers of burlap and kept moist. The Project Arborist will be on site for excavation near all protected trees on site. If injury is to take place to tree roots proper mitigation measures will need to be applied.

Trenching

Trenching for irrigation, electrical, drainage or any other reason should be hand dug in combination with an air spade when beneath the driplines of protected trees. Hand digging and carefully laying pipes below or beside protected roots will dramatically reduce root loss of desired trees thus reducing trauma to the entire tree. Trenches should be backfilled as soon as possible with native material and compacted to near its original level. Trenches that must be left exposed for a period of time should also be covered with layers of burlap and kept moist. Plywood over the top of the trench will also help protect exposed roots below. All trenching within a tree protection zone will need to be observed by the Site Arborist so that proper mitigation measures can be applied.

Grading

The Project Arborist shall perform an inspection during the course of rough grading adjacent to the tree protection zone to ensure trees will not be injured by compaction, cut or fill, drainage and trenching, and if required, inspect aeration systems, tree wells, drains and special paving. The Site Arborist shall be notified at least 48 hours before an inspection is needed. If compaction from grading has taken place within a tree protection zone proper mitigation measures will need to be applied.

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Irrigation

Normal irrigation should be maintained throughout the entire length of the project. The tree protection zone of the magnolia tree is recommended to be irrigated once a week until the top foot of soil is saturated. During the fall and winter 1 time a month should suffice. Mulching the root zone of protected trees will help the soil retain moisture, thus reducing water consumption.

Work in this area (TPZ) requires the direct onsite supervision of the Project Arborist.

Kielty Arborist Services can be reached at (650) 515-9783 (Kevin), or by email at kkarbor0476@yahoo.com. This information should be kept on site at all times. The information included in this report is believed to be true and based on sound arboricultural principles and practices.

Kevin Kielty

Sincerely,
Kevin R. Kielty Certified Arborist WE#0476A

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ARBORIST DISCLOSURE STATEMENT

Arborists are tree specialists who use their education, knowledge, training and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like a medicine, cannot be guaranteed.

Treatment, pruning, and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, landlord-tenant matters, etc. Arborists cannot take such issues into account unless complete and accurate information is given to the arborist. The person hiring the arborist accepts full responsibility for authorizing the recommended treatment or remedial measures.

Trees can be managed, but they cannot be controlled. To live near a tree is to accept some degree of risk. The only way to eliminate all risks is to eliminate all trees.

Arborist: Kevin R. Kielty
Kevin R. Kielty

Date: November 4, 2019