Tree Assessment

Deodar Cedar and Norfolk Island Pine
324 Florida
San Bruno, CA

Prepared for:

San Bruno Parks and Recreation
Mr. Rene Walsh
567 El Camino Real
San Bruno, CA 94066

Prepared by:
Kielty Arborist Services
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September 7, 2018

Tree Report

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San Bruno Parks and Recreation
Mr. Rene Walsh
567 El Camino Real
San Bruno, CA 94066

Site: 324 Florida, San Bruno, CA

Dear Mr. Walsh,

Introduction and Assignment:
As requested on Thursday, September 6, 2018, I visited the above site to inspect and comment on a large deodar cedar and a Norfolk Island pine in the rear of the property. A new park is planned for this site and your concern as to the future health and safety of the trees has prompted this visit.

Method:
The trees in question was located on a "Not- to-Scale" map provided by me. Each tree was measured for diameter at 54 inches above ground level. The tree was then tree was 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 were measured using a Nikon Forestry 550 Hypsometer.
The spread was paced off. Comments and recommendations for future maintenance are provided.
The cedar was climbed to inspect the structure of the tree.
Disfigured Deodara cedar tree near southwestern property line.

Observations:
The tree in question is a Deodar cedar *(Cedrus deodara)* with diameters at breast height of 29.9 and 15.5 inches. The tree is located in the rear of the property near the southwestern property line. The estimated height of the cedar is 45 feet with a total crown spread of 45 feet. The vigor of the tree is poor-fair with several dead limbs recently being removed. The form of the cedar is poor with multiple leaders at the base and again at 15 feet from a past topping.

The cedar was climbed to inspect crotch formations and possible decay.

The trunk of the tree was covered with ivy and some root crown damage occurred from the removal of the ivy. The abundance of deadwood may be an indicator of crown rot. The cedar was recently trimmed with several of the limbs being shortened. The cedar receives a condition rating of 50 on a 1-100 scale (poor-fair).

Tree #2 is a Norfolk Island pine (*Araucaria heterophylla)* with a diameter at breast height of 37.4 inches. The tree is located in the rear of the lot 4 feet from the property line and the neighboring home. The vigor of the tree is fair with normal shoot growth for the species. The form of the tree is fair with a single straight trunk and very good limb spacing (common for the species). The tree has very large surface roots (12-14 inch diameter). The location of the tree is poor, near the property line and very close to the neighboring home. Large seed pods are visible throughout the tree.

Norfolk Island pine 4 feet from the property line and neighboring home.

Site Observations:
The site was a former home acquired by the city to build a neighborhood park. The home and other landscape shrubs were removed to facilitate the building of the park. The two trees in question are the only trees remaining. The cleared site has had the hardscape areas marked on the bare ground with paint. The marking of the hardscaped area gives a good idea of paths and play structure bases that encroach on the trees dripline.

Discussion of Species:
Cedrus deodara is a native of Asia where the tree is common in the Himalayan area. The tree is commonly used as a landscape tree throughout the world. Cedars have a spreading form and large diameter roots. The species is subject to limb breakage as the wood is quite brittle. Topping of this species increases the chances of limb or leader failure as the tree becomes codominant and lateral limbs become over-extended. The species is susceptible to root rot primarily oak root fungus. The tree does not react well to large scale root cutting. Root cutting for this species will cause a lowered vitality and increases the trees chances of failure from wind throw.

Four large seed pods were pulled from the ends of the limbs of the tree. All four 2-3 pound pods were on the end of the same limb.

The Norfolk Island pine is native to the south pacific. The tree is often used as an indoor plant as the species is sensitive to cold weather. All of the araucaria species produce large seed pods that fall without warning. The species is prone to mealy bug a sucking insect that excretes large volumes of honey dew (fecal matter). The honeydew is quite sticky causing damage to vehicles and landscape structures including play equipment.

Testing or Exploration:
The cedar was climbed to inspect the structure of the tree including the crotch formation at 15 feet and the topping locations. The Norfolk Island pine had several of the large seed pods removed by using a tree climber's throw line. The throw line was able to reach pods at approximately 40 feet.

Trimming History:
The cedar tree has been heavily trimmed in the past. The topping of the tree has caused the form of the tree to be poor. The latest trimming was quite heavy reducing the heavy lateral limbs over the site and street. The latest trimming lessened the chances of limb failure but permanently disfigured the poorly formed tree. The Norfolk Island pine does not appear to have been recently trimmed however the lower limbs have been removed and the fringe has been raised over the neighboring home and over the site to match.

Proposed Construction Impacts:
The Norfolk Island pine will be significantly impacted as the pad for the play structure will be within 6 feet of the trunk. The excavation depth for the pad will be approximately 2 feet and will sever the surface oriented roots. Root loss will be between 25-30 percent.

The cedar will have moderate impacts to the root zone. Several paths intersect within the dripline of the tree. Root loss during the path installation should be 10-15 percent.

The line in the fore ground is the edge of the playground pad well within the tress dripline and the probable target for falling pods. Excavation will be 2 feet deep and will cause significant root loss.

Wildlife habitat:
During my two visits to the site I saw no wildlife utilizing the trees. No nests or remnants of nests were noticed. Raccoon scat and mealy bug fecal matter was observed on the site.

Summary:
The Norfolk Island pine is a poor choice for a park especially a park with children play equipment. The 2-3 pound seed pods mature in September and will fall from the tree. The excretion of honeydew will also be a nuisance as surfaces and clothing will become a sticky mess. Root loss will be significant and will further reduce the tree vigor.

The cedar will not present a hazard as the severe trimming has temporarily reduces the chances of limb failure. Root damage will be moderate and the will survive the construction. The poor disfigured form of the cedar is permanent and will never improve.

Remove and replace the two trees. The Norfolk Island pine will be a constant hazard and will suffer significant root loss. The cedar will always have poor form and will never be an attractive tree. A brand new park should have new safe trees for the neighborhood to enjoy.

The information included in this report is believed to be true and based on sound arboricultural principles and practices.

Sincerely,

Kevin R. Kielty
Certified Arborist WE#0476A

Glossary

Adventitious	Arising from parts of the root or stem and having no connection to apical meristems
Air Excavator	A device that directs a jet of highly compressed air to excavate soil.
ANSI	An acronym for American National Standards Institute.
ANSI A300	In the United States, industry developed national consensus standards of practice for tree care.
Bifurcation	A natural division of branch or stem into two or more stems or parts.
Branch union	A point where a branch originates from the trunk or another branch. Fork. Crotch.
Brown rot	A fungal wood rot characterized by the breakdown of cellulose.
Buttress roots	Roots at the trunk base that help support the tree and equalize mechanical stress
Butt rot	Decay of the lower trunk, trunk flare or buttress roots.
Cabling	Installation of steel or synthetic cable in a tree to provide supplemental support to week branches or crotches.
Canker	A dead, discolored, often sunken area (lesion) on a branch, root, stem or trunk.
Canopy	The part of the crown composed of leaves and small twigs.
Cavity	Open or closed hollow within a tree stem, usually associated with decay.
Compartmentalize	Natural defense process in trees which chemical and physical boundaries are created that act to limit the spread of disease and decay organisms.
Decay	An area of wood that is undergoing decomposition.
Epicormic shoot	Shoot arising from latent or adventitious bud (growth point).
Eradicate	Total removal of a species from a particular area. May refer to pathogens, insects, pests or unwanted plants.

Hypoxylon Black hemispherical fruiting bodies that develop on the surface of dead bark or wood. The fungus causes a white rot of the sap wood of living trees and dead wood.

Included bark Bark that becomes embedded in a crotch between branch and trunk or between codominant stems. Causes week structure.

Infectious Capable of being spread to plants from other plants or organisms.

Lateral Secondary or subordinate branch or root.

Live crown ratio Ratio of the height of the crown containing live foliage to the overall height of the tree.

Mycelium Vegetative body of a fungus.

Watersprout Upright, epicormic shoot arising from the trunk or branches of a plant above the root graft or soil line.

References

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(3) Dreistadt, Steve H., Pests of Landscape Trees and Shrubs, *An Intergrated Pest Management Guide*, Second Edition. Agriculture and Natural Resources Publication 3359, 2004.

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(5) Ronald M. Lanner Conifers of California Columbia Press 1999

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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

Date: September 7, 2018