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**An Evaluation of A Coast Live Oak Tree
Menlo Park City School District
275 Elliot Drive
Menlo Park, California**

Assignment

I was asked by Mr. Ahmad Sheikholeslami, Menlo Park City School District, to evaluate a Coast Live Oak Tree located at the Elementary School, 275 Elliot Drive, Menlo Park, California.

Observations

I visually inspected the tree on July 14, 2015. The trunk has 4 cavities (or openings) into the interior wood. In one of the cavities, there is a fungus infection called Artist's Conk (*Ganoderma applanatum*), a serious heart rot decay pathogen. The area around the fruiting body of this fungus there was a rust colored dust, which is the active spores from this fungus. This is an obvious indication that this decay pathogen is active. This disease digests the lignin and a percentage of the cellulose leaving individual cells with no structural integrity. In time the interior wood becomes soft and flaky, having no strength. Typically this disease does not significantly damage or impede the vascular system, and for this reason, the canopy commonly continues to thrive and grow normally. There is no treatment for this disease, and it commonly decays the interior wood structure until the tree no longer can support itself. This occurs despite a dense healthy canopy, but in some cases, the dense canopy, having heavy end weights, contributes to the failure.

This tree also had a severe infection of oak root fungus (*Armellaria mellea*) in the past, but most of this appears to have been arrested by the root collar excavation and the cleaning of the walls of the cavities. The exposure to air and the drying effect by this procedure can sometimes stop the advance of oak root fungus.

The active decay (*Ganoderma applanatum*) and the extent of the previous decay (*Armellaria mellea*) begged the question as to how much of the interior wood still exists, and is there still sufficient structural wood currently to expect this tree to remain standing for several years. For this reason, I recommend further analysis.

Internal Analysis

On July 23, 2015, I performed a portable drill inspection analysis on the trunk of this tree. The procedure was to select points of possible weakness in the trunk and at those locations drill into the trunk using a 1/8 inch diameter X 12 inch long drill bit or a 3/8 inch drill bit X 16 inches long. I attempt to apply even pressure to the drill as the bit slowly drills into the wood. At the point, in which I feel a slight change, I remove the bit, inspect the shavings collected in the auger grooves of the bit, measure the depth, and make notes. These notes include a drawing of the trunk, approximate to the trunk's shape,

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using numerous measurements of the trunk and buttress root locations. The locations of the drill sites on the trunk and depth of the findings are noted. By this method, I am able to distinguish between healthy wood, between partially decayed wood (called Sapwood Decay), and between thoroughly decayed wood. The number of drill sites depends on the findings at each location. If little decay is found or if the decay is limited to a small area, only a few drill locations are done. If significant decay is encountered, several drill locations are done in an attempt to find the extent of decay. I have done as few as 3 and as many as 20. On this tree I drilled 15 locations (A-0). Because of the location of the *Ganoderma* infection on this tree and the locations of the *Armellaria* on the trunk and roots, I performed all of the drill locations for this report at elevations on the trunk at approximately 6 inches above grade.

I use the data collected by this method to make a Drawing (to Approximate Scale). It is not possible to make a drawing of exact scale, unless numerous lazer measurements are taken. This drawing is attached.

Conclusions

A high percentage of the interior structural wood of the tree is completely destroyed by the two decay pathogens. The tree remains standing due to the healthy structural wood in the buttress roots, which are air well distributed around the trunk on all sides.

There is no way to estimate how long this tree may remain standing. However, the current decayed wood is extensive, and the active *Ganoderma applanatum* disease is quite aggressive. I do not expect this tree to remain standing for very long, despite its dense beautiful canopy.

This tree leans slightly toward the west. On the west side of the fence near this tree, there are two neighboring houses within approximately 30 feet of the trunk. This tree having a canopy height of approximately 60 feet potentially could crush portions of either or both of these two residences.

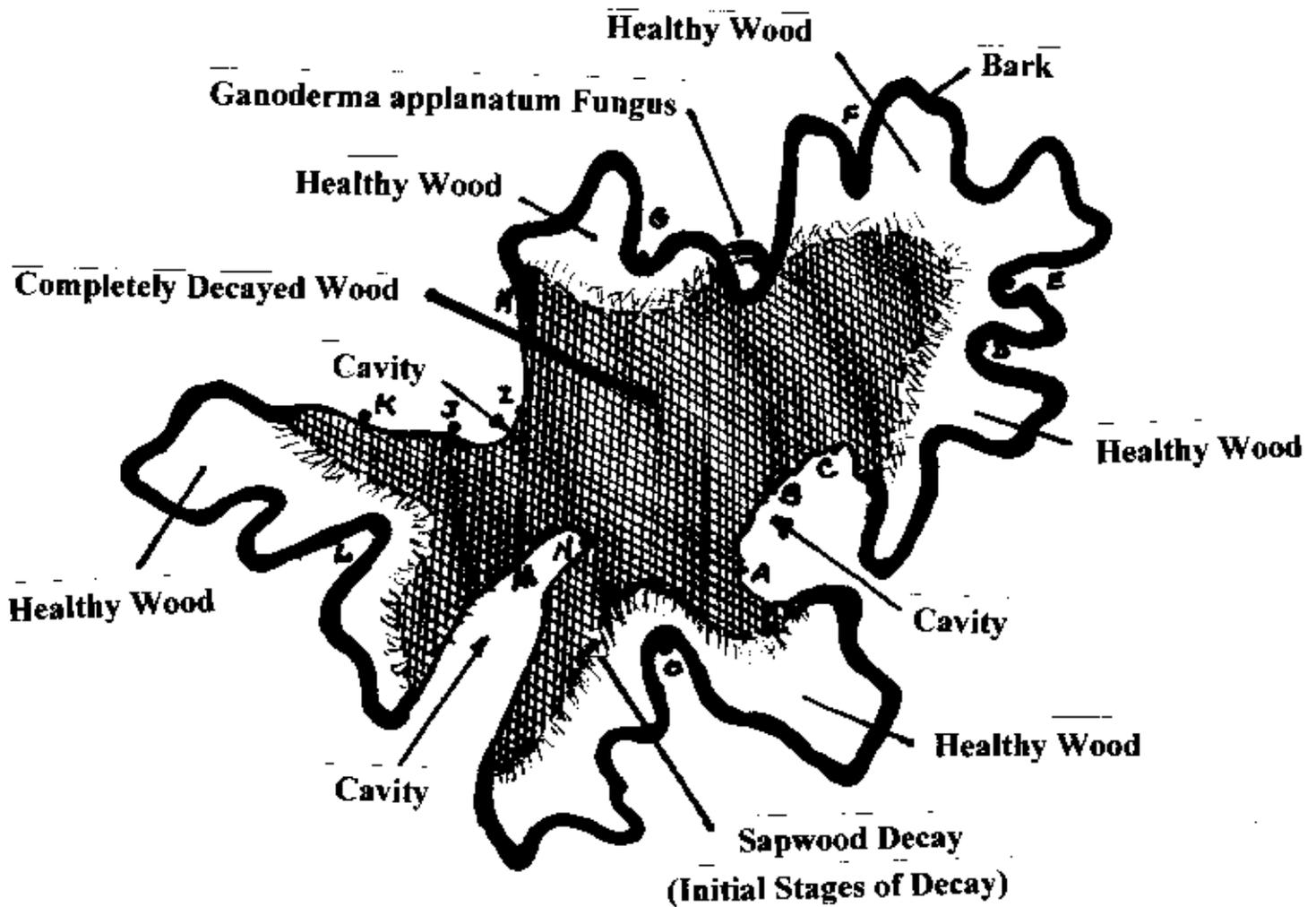
Recommendations

It is very unfortunate, but in my opinion, the evidence is overwhelming, such that I have no alternative but to recommend the removal of this oak tree. Because of the safety concerns, I recommend that the removal be done as soon as possible.

Respectfully submitted,



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Coast Live Oak

Sketch: Interior Wood Decay

Scale: 1/2 inch = 1 foot approximate

Project Site: Menlo Park City School District

275 Elliot Drive

Menlo Park, California

Inspection: 7-23-15

Prepared by Michael L. Bench

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