

Pieter Severynen, ASLA

LANDSCAPE ARCHITECT & ARBORIST

Stephen Michael
4355 McConnell Boulevard
Los Angeles, CA 90066

Dear Mr. Michael,

The following is an abbreviated tree report, based upon information available. While it is not a fully documented report, it is still based on the basic recommendations of the American Society of Consulting Arborists, of which I am a member.

Introduction and assignment. You requested me to give you a brief evaluation of the effect of the construction of the proposed Culver Studios commercial parking structure along Van Buren Place on the existing street trees fronting the property, to the extent that information is available. On May 21, 2016 I visited the area and took pictures. You told me that as a property owner along van Buren you are very concerned about the effect of construction on the existing mature street trees.

Testing and Analysis. I was not a position to do any of either. I did not go on site, nor did I do any subsurface testing for root distribution.

Observation of existing conditions. Van Buren Place is an older, Culver City, Southeasterly trending residential street with some mixed uses added. The street is punctuated by beautiful street trees, estimated to be in the 70 yr. age range. The trees along the property are Deodar Cedar, *Cedrus deodara*, and Canary Island pine, *Pinus canariensis*, a few minor other ones. In the parkway along the street fronting this commercial property I counted the following trees:

Common Name	Botanical Name	Est. Dia, at Breast Height (DBH)
Canary Island Pine	<i>Pinus canariensis</i>	28"
Canary Island Pine	<i>Pinus canariensis</i>	18"
Canary Island Pine	<i>Pinus canariensis</i>	10"
Cedrus deodara	Deodar Cedar	29"
Cedrus deodara	Deodar Cedar	6"
Loquat	<i>Eryobotrya japonica</i>	3"
Loquat	<i>Eryobotrya japonica</i>	3"

Observation of existing conditions and apparent problems.

It is proposed to replace the current 3-level parking garage with a much larger structure with six levels above ground and two below. The plans show the below ground portion of the structure to go all the way to the property line. If executed, this would deprive the street trees of most of their current root system.

Until we have reliable measures to tell us otherwise, we should assume that the proposed parking garage construction on the Culver Studios property would kill the existing large street trees, perhaps

suddenly, but more likely gradually, if it followed the garage extending to property line scenario, because of the large amount of root kill. That would be a very slow and messy process that could take years and might not even begin to show up for a few years, until the trees' reserve food supplies are gone.

Normally, trees will grow a root system that typically extends to at least 2-3 x the diameter of the crown of the tree although it can spread as far as 10x that diameter. With street trees at Van Buren in the 50-60' height range and an estimated 40' width range (all measurements estimated), this would normally mean an at least 80-120' rooting circle around the tree. Given that the street at 5' away from the tree trunks in this case forms an effective blockade to root expansion on that side, almost all the supporting roots that the existing street trees have developed are on the property side of the trees for a distance of as much as 115' off the trunk, if we estimated 3x the crown width, still 75' if we gave them only enough for 2x diameter, and still almost 40' if we considered only the property side half of a root crown, which would be credit for only half as much as they would get in a totally unencumbered setting. But a proposed parking structure extending underground to the property line would remove almost all of the available root space, and leave only 15' below planter and sidewalk for total root width. This is not sufficient for survival of the trees. This report will consider minimum planter volume under theoretical circumstances in a moment. But first, please realize that here we are dealing with real, older trees, that grew up with a lot of space; we are not starting with a clean slate, where young trees may be able to adjust to less than excellent conditions. To suddenly cut their available roots and rooting space by as much as 2/3 is more than almost all mature trees can take.

On the other hand, if the studios respect the 15' setback from property line for the underground parking levels, and take additional lifetime steps to safeguard the street trees, then the trees would stand a reasonable chance of long time survival.

I did not go on the Culver Studio property and measure the extent of root systems, but it should be obvious to the even the non-technical observer that a huge amount of existing root system is proposed to be removed. Removal of 50+% of root system is considered to be the cut-off point at which survival of trees becomes problematic or unlikely, with the tree becoming more sensitive and touchy to disturbance, the older it gets. Again, most of these are not young trees, although they could still live for many decades past the century mark. It should also be clear, that while all distances being discussed here are estimated, the unobstructed space closest to the tree trunk is the most important to root development and tree health, with a space @ 15 or 20' away from the trunk, much more important than at 30 or 40' away. If for example, **any** on site development on the studio property stayed at least 15' away from the property line, then the tree roots would have 10' planter space, plus 5 under sidewalk space plus 15' unobstructed property space, (assuming the roots had not been disturbed in that space) for a total of 30'. This is not generous, but it would give the trees a fighting chance at survival.

As to minimum soil volume needs for trees, there are some tables available that might suggest smaller soil needs than what they receive here, (assuming ideal circumstances). But these tables must be used with great caution, because of the many variables involved. James Urban, in 'Up by Roots', for example, cites a soil volume table, wherein a 24-inch DBH tree needs almost 1600 cubic feet of soil to do well. He hastens to add that high levels of maintenance are assumed, that only the top inches or feet of the soil in the plant area may be countable, not several feet down, and that

compaction and poor drainage will reduce this depth. He suggests using the worst assumptions. And again, a new planting situation is completely different from one where trees have grown up with a set of decades old values that will be subject to sudden change.

Problem creating actions. Apart from its aggravating effect on nearby residents, the proposed construction/development could harm or may kill the street trees. Development will or may entail the following, which is not an exhaustive list:

Soil compaction, at the surface and below. Moving objects compact the soil below. Moving pickup trucks exert as much pressure as the foot prints of walking people: 25 psi (pounds per square inch), which is actually even more than imparted by construction equipment. Repeated walking and driving over the root area compacts the top layer of soil, making movement of water, oxygen and carbon dioxide in and out of the soil difficult or impossible. The combined effect is loss of root space as well as of actual roots. At some point roots stop growing in the affected area.

This 'inadvertent' compaction area may be enlarged here by the 'foundation adjacent compaction area'. Typically areas under future foundations plus the adjacent area (for ease of construction) are compacted to the maximum compaction recommended by engineers, (85-95%) which is far too high a compaction for any tree roots to be able to penetrate. As a result growth stops.

Foul soil. Construction generates waste. Construction workers often dump their construction waste products on the site soil: cement washings from the wheelbarrow, leftover paint, spilled gas or oil, etc. These products can poison local plant life, including tree roots for years, sometimes decades to come.

Tree damage. Branches of the trees overhang the property, and roots of the trees are probably all over the property. Careless construction often results in damage to the tree in the form of branches and/or roots broken or cut off by untrained workers. Construction may result in soil compaction of existing soil, or fresh soil being brought in atop of the old one. It will result in significant, perhaps fatal loss of existing roots and other harming actions. Cutting off branches or roots at the wrong place or with less than sharp tools are examples of harming actions.

Lack of light. If the new building is large enough and tall enough, it will block some of the light and sunshine previously available to the tree, with potential thinning and dieback of affected branches.

The potential damage cited is cumulative. The effects often do not show up for one or more years after construction is finished, because the tree bears a large food reservoir in its trunk, which will be exhausted first. The older a tree when nearby construction happens, the harder a time it has dealing with resulting damages, even if the tree otherwise still has a long life ahead.

Mitigation measures. It should be obvious from the list of problems above that it is far easier to prevent problems than to try and correct them, even if correction were possible. It is also smart policy to prevent harm to trees, rather than incur costly liability for avoidable actions.

Stay away as far as possible from the trees. It would be best for the health of the trees to allow no construction activity of any kind within the dripline of the trees, which is the vertical projection of the end of the branches to the ground. Remember that the closer any activity approaches the trunk of the tree, the greater the potential damage. For that reason, a 15' above and below ground setback on the Culver Studios property, wherein no construction activity would take place, would probably constitute a tree survival and health action. Develop building and construction plans with these concepts in mind: do not allow a subsurface intrusion into the 15' setback line. Erect construction/tree safety fences. Do not let construction activities take place in the setback portion.

Avoid direct damage to the trees. At the 15ft setback point where the 30 ft deep excavation will begin, care must be taken not to rip and tear tree roots with mechanical equipment. At this point roots must be cut clean with sharp equipment such as chainsaws.

Do not foul the air, water and soil. Instruct all construction personnel that strict tree protection rules are in effect and post notices on site to that effect. Do not allow dumping of any construction fluid except clean water. Do not allow exhaust of hot air or gases directed towards the trees.

Develop landscape plans for the setback area that enhance the tree roots, and do not introduce elements of major competition to the trees. The proposed bamboo planting plan should be reviewed by the neighborhood for minimum impact on trees.

Develop a long term landscape maintenance plan for the existing trees. A 6 month or 1 year term is meaningless. Damage may not show up for years afterwards. A term of at least 5 years should be considered, 10 years is even more realistic, with the studios guaranteeing maintenance during that period. This plan must include deep watering on a monthly basis.

Cooperation between the parties in the development of the building and subsequent construction plans will go a long way towards elimination of any potential conflicts. If requested I will be glad to participate in meetings, plan review, construction site visit, or other activities that will result in the ultimate goal of all parties: the long term preservation in a healthy condition of this beautiful tree lined street. Please call me if you need additional information.

Sincerely,

Pieter Severynen,
Landscape Architect and Consulting Arborist