



Consultant Responses to community feedback

Calala to CBD Recreational Path

DSJN1429-REP02

Regional Services

Strategy Assets and Design Division



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1 Introduction

Following the community consultation period, TRC have received comments from the community and King George V Avenue working group that have required a response from the arborist and heritage consultants engaged for this project. The following are the questions and responses

1.1 Question and Response – Arborist Consultant

Item	Question	Response
A1.0	Excavation of the ground adjacent to the Oak Trees will affect the tree soil web and cause Fungus Armillaria (Sugar Mould) to attack the tree roots and cause root rot	<p><i>(Research)</i> Infection occurs via the roots usually as a result of infected roots coming into contact with uninfected roots and the fungus growing across. The fungus does not appear to readily produce rhizomorphs (specialised fungal threads that can grow through the soil) and it is less likely that the fungus can spread through the soil by its own devices. The fungus is able to infect new areas by several means. Very rarely the spores of the fungus can fly through the air and land on dead wood surfaces and initiate infection. More commonly the fungus will be introduced into an area by the transportation of infected material such as the transplantation of infected plants, contaminated roots, or contaminated mulches. Hygiene is obviously important in minimising the spread of this fungus.</p> <p>Soil conditions that favour the development of the disease are poorly defined. It is thought that the fungus prefers lighter soils or clays with reasonable drainage, but this is not always the case. It is claimed that the disease is more severe on nutrient poor soils or with some characteristic that is not optimal for plant growth. There is however very little clear evidence for this, particularly in Australia. Drought is often associated with severe symptoms. It appears that the stress involved predisposes the tree to infection and also allows the fungus to more rapidly colonise the root system of the plant. Similarly stresses resulting from flooding can also predispose trees to severe infection. It is fair to say that any factor that stresses trees is likely to result in a weakened defence system and an increased likelihood of the disease developing.</p> <p><i>(Discussion of the research)</i> Armillaria is common in most SE Australian garden and native forest environments, its spread in several ways, spores from a wood food base such as dead stump or piece of infected root, airborne spores produced by the toadstools can be another</p>

Item	Question	Response
		<p>method of spread, these spores infect dead or injured wood, contaminated material of infected chip or root material.</p> <p>Cultivation can also spread spore from contaminated root source, spread is by root contact as the fungus grows from a diseased root into a healthy root via the point of contact of the roots. Rhizomorphs can grow from infected roots through the soil to roots of a nearby plant. The trees are ideal host, a high percentage of typical food source of dead or decayed wood for the pathogen to take hold by wind transfer.</p> <p>One other means of transfer is flooding where infected material has the potential to spread in this flood zone environment.</p> <p><i>(Response to the question)</i> So to answer the question, it is possible if contamination exist already in the dead or decayed timber or stump. However, the distance the proposed path from proposed from the stump distance has been extended as far out as possible to minimise root disturbance and also the excavation cut is shallow as possible 50-75mm depth to minimise the risk of this occurring.</p>
A2.0	The path should be constructed from a soft material or elevated boardwalk rather than concrete to minimise compaction of the soil.	Compaction already exists, this was identified in the Conservation Management Plan 2016. (See section 7.7.2) The concept design is a concrete path and not a raised walkway, the distance for the concrete path has been pushed out as far as possible to reduce impact on the tree's root system, soft material will compact regardless and continue to compact with every transit of foot or wheel traffic.
A3.0	The use of concrete will starve the roots of Oxygen and Water	Concrete is porous material and will not stop root development, roots are opportunist, we see this on footpaths around town where the path has been lifted, the environment under the slab usually will contain a mass of feeder hair like roots seeking moisture between the concrete and the impervious layer of base material that will exist.
A4.0	A 3.5m wide concrete path will cause the soil underneath to heat up, further compromising the tree health which already has bitumen on one side.	Firstly, the path is on the southern side of the trees where the shade will provide covering shadow for most of the day, soil temperature in summer of black soil can raise to 40 degrees plus, I can not comprehend there being a difference and more so same as the previous question above, moisture will exist between the lower concrete layer and the base material.

Item	Question	Response
		It is worth knowing where bush fire burn across the soil layer, the base load material roots still survive.
A5.0	There is an existing 5.5m wide bitumen sealed road on one side of the trees and the proposed 3.5m wide concrete path planned for the other side of the trees. Has the arborist considered whether the combined impervious area surrounding the trees will be detrimental to the tree health considering its combined incursion into the tree root zone? And if it is not considered detrimental, what are the reasons for that assessment?	the incursion of the TPZ has been taken into account when specifying the maximum allowable incursion into TPZ zones and the conditions applied during the proposed construction. The reason for the TPZ assessment is a requirement of the development of the path.
A6.0	The arborist report notes the depth of feeder roots are typically 50-75mm below ground surface and that will be the limit of excavation. Is there a maximum root diameter that will be permitted to be cut? Or will no roots be cut?	It is expected that there will be some roots cut and or pruned where a maximum depth of 75mm is required, the root mapping found roots at the 6m distance from the tree centre the largest roots diameter found was at 2x large trees T36 & T38 > 50mm diameter (with these roots 200mm and 170mm deep respectively). Vigour of the trees in most trees is good, this can be seen in scar tissue and leaf colour or growth. Pruning the roots is not likely to have a major detrimental impact on the tree.
A7.0	If a porous material was able to be used for the path, is there a way to prevent the roots from uplifting and damaging/breaking up the path?	Installing a root barrier on the tree side of the path excavating 450mm deep trench the length of the path adjacent the larger trees would restrict the roots, however the intention of the planning has been minimizing the excavation impacts.

1.2 Question and Response – Heritage Consultant

Item	Question	Response
H1.0	If the path was to be constructed from concrete, would there be a preference for an oxide colour to be incorporated to better complement the heritage character of the avenue or is the normal grey colour preferred? If an oxide is desired, what colour would be preferred?	I can understand how the look of a concrete pathway, particularly when first poured, might be considered an “eye sore” and be perceived as a detrimental impact to the heritage landscape. As there has not been a structured pathway known to have existed along either side of the avenue from the historical records, it is a change to the historical landscape but one that is considered acceptable in the context of re-invigorating awareness and use of the avenue. The use of an oxide to colour the concrete may offer some reduction in the visual impact. A colour that blends with the landscape would be ideal, whether green or brown. It would be worth taking samples to the avenue to see which may be best. There are also seasonal variations to consider where the avenue is green in summer, and brownish in winter when the leaves fall and the grass dies off. A combination of colours might prove suitable. A stamped concrete finish, where the oxide is used only on the finished surface, might also be an alternative to consider. I defer to those with specialist knowledge to assess the potential health impact to the trees from a concrete path.
H2.0	If the path was to be constructed from asphalt, would there be a preference to colour the asphalt to better complement the heritage character of the avenue or is the normal black colour preferred? If colouring is desired, what colour would be preferred?	If memory serves me correctly, Heritage NSW expressed a concern with the use of black asphalt for the pathway for fear it be mistaken as a road for vehicles to use. I would support that concern, so coloured asphalt would be preferred to black. As above with the concrete oxide colours, I would suggest taking colour samples to the site to see the best colour for reduction of visual impact. Again, a combination of colours might be suitable, perhaps even artistic.
H3.0	Would you consider a permeable material such as grass pave or true grid pavers	Once established, permeable material such as grass pave would of course be less visible and result in less impact less upon visual amenity. It is likely to be a better option for tree health also. Other permeable materials such as gravel or mulch were previously discounted on the grounds that the surface would not be suitable as a cycle-

Item	Question	Response
	to better complement the heritage character of the avenue compared to concrete or asphalt?	way. I'm not sure how suitable this style of grassed paver would be for bicycles. Unless there is some distinguishing feature that makes the path readily identifiable as a path, a grass surface is likely to see the continued use of the area by vehicles with continued compaction around the root zones, thus not achieving the desired heritage outcome of preserving/improving tree health. However, and although not my preferred option, there may be some potential for some section/s of the pathway to utilise this type of surface in combination with other surfaces.
H4.0	Do you consider a 3.5m wide path is proportional within the avenue or is this width excessive and detracts from the heritage character of the avenue? If you believe it is excessive, what width would you consider to be proportional for the avenue to not detract from its character?	In order to achieve the desired heritage outcomes, the pathway should be built to a width that allows pedestrians and cyclists to use the pathway safely and comfortably (ie allowing each to pass without having to step or ride off the pathway). The width of the pathway and its proportion in a heritage landscape sense could be considered entirely subjective. I don't consider that 3.5 metres is excessive, I don't consider the width of the pathway as a primary concern for detrimental impact. When changes are proposed to heritage buildings, proportions are extremely important as are construction materials. In this instance, it is difficult to identify what the proportions should be measured against: the width of the roadway, the height of trees, the base of the trunk, or the distance between the road and the fence line, or should it just look right (to whom?) I do not consider that a narrower path would result in any less impact upon the historical landscape or visual amenity of the avenue.

END OF REPORT

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