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Arboricultural Assessment for Point Lonsdale Playground Point Lonsdale Victoria



This report has been commissioned by:

Borough of Queenscliff

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Key Objectives

1. To inspect the specified trees and make determinations as to their current health, condition, and retention value.
2. Make recommendations regarding the most suitable outcome for the trees, including timeframes.
3. Determine whether the removal of any of the trees will negatively impact the health and safety of the surrounding specimens, and make recommendations according to this determination.

Methodology

1. The inspection for this report was performed by David Shepherd from Bellarine Tree Services, whilst in the presence of Shane Poulter from the Borough of Queenscliffe.
2. The canopy heights have been estimated; the canopy widths measured by pacing out the north-south and east west axis, and averaging out the measurement; and the Diameter at Breast Height (DBH) of the trunk was measured over-bark, by the use of a fibreglass Trunk Diameter tape (in accordance with AS4970-2009 guidelines).
3. All photographs were taken at the time of the inspection, and shall be used throughout this report for referencing or identification purposes.
4. The trees have been tagged previously, and as such, the numbers affixed to the trunks will be used as a referencing guide.

Observations

1. All of the trees to be discussed are located within the popular and heavily frequented foreshore playground which is directly across the road from the main shopping strip of Point Lonsdale. As can be seen within the attached photographs, although the playground site is relatively old and well established, the playground equipment is relatively new and caters for a range of different ages for the children who frequent it. To the south of this playground is a brick toilet block, and further to the south is an electric BBQ unit which is within an expansive and well maintained lawn area. During both of the site inspections that I performed on the trees as part of this report, the playground was being used by a number of family units.
2. The trees in question are all believed to be semi-mature to over-mature Moonah (*Melaleuca lanceolata*), and are likely to be remnant or naturally recruited specimens.
3. The largest of the trees involved within this report is located within the raised garden bed adjacent to the south-western corner of the toilet block, whilst the three smaller trees to be discussed are located on the western side of the playground, directly adjacent to the slide-set.

Garden-Bed Moonah.

The over-mature Moonah to the south-west of the toilet block has the following dimensions:

Height = 9m Width = 12.5m DBH = 0.63m

This tree has a thickened single trunk which bends severely to the north, with a slight rotation of the trunk fibres being discovered which indicates that there has been a shifting of the centre of gravity within the canopy.

The lower trunk does not support any evidence of basal flaring, with a "telegraph pole" style entry into the soil profile being observed. This soil profile within the planter box arrangement is heavily compacted, and although it once appears to have supported a considerable degree of native grasses, the majority are now dead. The soil profile on the southern side of the tree is also raised slightly, as this is the soil profile opposite the plane of lean. A considerable crack has also been formed within the brickwork on the southern wall of the box, with several of the bricks within the top layer having been dislodged and now being unstable.

The north-eastern side of the trunk is supporting evidence of recent frass exudation, with a considerable amount being captured within a spider web and within the fibrous outer bark.

The north-eastern scaffold has obviously had a sizeable branch fail previously, with a large tear in the branch fibres being present. The discolouration of these branch fibres indicates that this failure is likely to have occurred several years ago.

The canopy is supporting moderate levels of foliage retention for a tree of its age, although the south-eastern corner is supporting a sizeable degree of dieback and decline. This die-

back has caused a thinning of the canopy cover which has exposed deadwood within the centre of the canopy, as well as the presence of numerous broken branch stubs from previous branch failures.

Tree 196.

This Moonah is the closest specimen on the western side of the slide-set, and therefore hangs out over the playground substantially (or at least it did prior to the recent failure of 1/2 of its north-eastern canopy cover).

Height = 10m Width = 9m DBH = 0.30m & 0.42m

This Moonah consists of twin trunks which originate from ground level, hence the two DBH measurements. The tall and upright trunk was previously bifurcated, although the north-eastern scaffold failed previously and has subsequently left a substantial tear in the trunk fibres at its point of attachment which was approximately 4m above ground level. This failure has also exposed a considerable amount of internal decay.

The smaller of the two trunks leans to the north-west on a considerable angle. As can be seen within the photographs at the rear of this report, this trunk is riddled with large and seemingly mature Bracket Fungal Fruiting Bodies which are located between 1-2m above ground level. A simple percussion test performed during the ground based Visual Tree Assessment (VTA) indicated that this trunk is completely hollow, with almost no determinable level of viable tissue remaining in place, apart from the cambium layer which is providing the transport of water and nutrients (and is located directly beneath the bark).

Tree 197.

This Moonah is located to the west of Tree 196, and is therefore slightly further away from the playground.

Height = 7m Width = 8m DBH = 0.34m

This tree consists of one somewhat narrow central trunk which leans out to the north on a 90° angle as a result of competition for growing space, and phototropism.

The canopy is leaning out on such an angle that its outer reaches are resting within the canopy of the adjacent Monterey Cypress which is located within the north-western corner of the playground.

Tree 198.

This Moonah is located to the north-west of Tree 197, and is therefore the closest of the trees to the street.

Height = 7m Width = 6m DBH = 0.48m

It consists of one central trunk which is growing out on a slight angle to the north-west, but then forms into a low growing canopy which is growing on a severe angle (approaching 90°) due to the competition that it has received from Trees 196 and 197.

If trees 196 and 197 are removed, this tree will remain as the only specimen within this section of the playground surrounds, and would be exposed to higher wind loadings and a reduction in structural support.

Discussion

Planter Box Moonah.

This Moonah is one of the largest and most significant specimens within this area, and as such, is of great value from an aesthetic, environmental, and historical viewpoint. Its size and volume is likely to be a result of the relative lack of competing specimens surrounding it, unlike the remainder of the site which contains somewhat spindly and taller specimens which have had to endure years of competition for growing space and sunlight. The result is a highly thickened trunk which is required to support the extremely heavy canopy, and enable it to endure the relatively hostile growing environs which includes strong on-shore winds.

The trunk of this tree has clearly got a substantial bend in it towards the north-east, although no direct reasoning behind its formation was determined during the Visual Tree Assessment. Even though it may be a naturally occurring imperfection, this bend is of concern for several reasons:

1. The bend shifts the centre of gravity for the trunk approximately 3-4m to the north, which places an extremely high degree of stress on the tension roots on the southern side of the tree. Any imperfections in these roots will therefore be amplified by the extra strain it requires to support the entire trunk and canopy (which could weight several tonnes), and which could be doubled during wind events.
2. The bend could be hiding excessive amounts of internalised decay, fractures or the like, which would otherwise show themselves in a straight and complete trunk system.

The bed in which this tree is located appears to have been constructed within the last 10-15 years, and the soil raised up around the trunk to enable landscaping to occur in regards to the planting of native grasses. This raising of the soil profile is of major concern as it not only smothers the root system in 40cm of soil profile which will limit water, air and nutrient penetration down to the root plate, but it can also lead to trunk collar rot where moist soil is pushed up against the delicate trunk fibres and causes rotting of the outer bark. This moist growth medium is a perfect environs for fungal, disease, and insect growth and proliferation, and will provide a direct path to the structural roots and trunk system which are instrumental in providing the structural support for the tree as a whole. The concern is that even though the trunk and scaffold roots may be rotting away, it will remain invisible to the naked eye until such time as the tree fails.

In terms of the canopy, the most pressing issue relating to potential failure surrounds the wound on the north-eastern scaffold which originated from the previous branch failure. It currently appears that the wound includes a considerable amount of fractured branch tissue, as well as internalised decay both above and below the point of failure. Given that it is leaning out over the toilet block, and therefore has a high "target" rating, its failure would almost certainly cause substantial damage, injury, or worse.

The failure of the entire tree, however, would almost certainly see it demolish the toilet block, and almost certainly cause fatal injuries to patrons were it to fall directly on them. As such, great consideration will need to be made from a risk management perspective to balance the high retention value of this specimen, with the obvious health and safety concerns that it raises in its highly populated area.

Tree 196.

This specimen has recently suffered the failure of 1/2 of its canopy, and given its location over the top of a highly populated playground, it appears lucky that no-one was injured. The upright trunk has suffered extremely high levels of damage which cannot be appropriately dealt with using modern Arboricultural principles and practices, and as such, poses an unacceptable risk of failure. The trunk supporting the Bracket Fungal Fruiting Bodies is obviously hollow and of major concern, and is likely to fail completely within the next year with potentially fatal consequences. Retaining this tree is not an option, as the level of fungal damage will continue to worsen and cannot be prevented or slowed by any appropriate means. Coppicing the stump could potentially occur to re-establish a new tree quickly.

Tree 197.

This tree is growing out on a severe angle to the north, with the fact that the canopy is resting in the neighbouring Monterey Cypress appears to be the only realistic reason why it is still remaining upright. The pressure that the branches are exerting on the Cypress appears to be significant, and the concern is that if these branches were to break, the Moonah would fail and fall to the ground. Once again, this tree is of too high a risk potential to leave within its current situation.

Tree 198.

Whilst the trunk system of this tree appears to be relatively sound, the protection it is currently enjoying regarding the presence of Trees 196 and 197 to the south-east means that it has yet to receive the full force of the potentially destructive winds which prevail throughout the area. Given that these two trees will require total removal, as previously described, it is a major concern that the Tree 198 will be left exposed and potentially lacking in the structural protection afforded to it by rubbing on the adjoining trees (and vice-versa).

As such, strong consideration should be given to removing this tree entirely if trees 196 and 197 are removed.

Recommendations.

Planter Box Moonah.

Although the only way to completely reduce the risk associated with the high target rating and moderate failure potential that this tree possesses at the present time is to remove that tree outright, its seeming value to the area dictates that several other options could potentially be used to reduce the risks associated with its failure in a hope of retaining this tree in the short term. It should be noted, however, that no matter what steps are taken, this tree will continue to be of risk to persons and property, and should not be treated as being totally safe. It also means that determinations will need to be made by the owners of the tree to assess whether the risks are manageable and worthwhile. At the very least, the following will be required: -

1. Weight reduce the canopy by at least 25-30%.
2. Install an A-framed prop with a wide but V-shaped top-plate underneath the northern scaffold, so as to "catch" the tree if it were to fail, and to allow a visual measurement on whether the tree is leaning over further or is stable. This prop should be made out of strengthened tube which is installed within the ground at an appropriate depth (the exact nature of the engineering required will need to be sourced externally from this report).
3. Monitor this tree every 3 months and react accordingly if changes are observed.

Tree 196.

Remove this tree immediately due to serious health and safety concerns associated with its almost certain failure in the near future.

Tree 197.

Remove this tree immediately due to concerns regarding the angle of departure of the trunk, and of the fact that it will become exposed to increased windthrow potential with the removal of Tree 196.

Tree 198.

If trees 196 and 197 are removed, it is recommended that this tree also be removed as it will become exposed to increased windthrow potential, and given the poor structure of the canopy, will be at greater risk of failure onto the carparking area directly adjacent.

Note. In the case of the three trees which have been recommended for removal, it is strongly recommended that they be replaced as per Net Gain requirements. I prefer that this include planting new stock, however, the use of coppicing the current trees and harnessing their regrowth could potentially work effectively.



196

197

198



Trunk damage from the previous branch failure on Tree 196 at 4m.



Large numbers of mature Bracket Fungal Fruiting Bodies on Tree 196.



Trees 197 and 198 in close proximity to the footpath and parking.



The planter box has been lifted and cracked, most likely due to the presence of a large scaffold root.

The Moonah within the planter box has several major structural integrity concerns, and a moderate failure potential.



This impressive Moonah has had previous branch failures, an excessive lean, and a relatively limited Safe Useful Life Expectancy, but is a valuable tree and an imposing sight in this section of the reserve.

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- * Great care has been taken in sourcing information for this report so as it is correct. Bellarine Tree Services Pty Ltd cannot be responsible for information provided not directly under the control of its staff.
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- * In no way is this report biased or weighted. The content of the report is written in the full, honest opinion of the Bellarine Tree Services Pty Ltd Senior Consulting Arborist.
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- * This report is developed around the information provided by our client in the project brief. Only issues covered by the project brief are discussed in this report, as can be seen within the "Key Objectives" section on Page 2.
- * All details, information and advice contained in this report have been researched and referenced. Where no reference is included it is the author's learned opinion, experience and observations