

Greater Gippsland Tree & Garden Care

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Arboricultural Assessment

Site address: Chairo Christian School Pakenham campus
585 Bald Hills Rd
Nar Nar Goon 3812

Report prepared by: Rob Wall

Arborist

Associate Diploma Horticulture (Arboriculture)

Report prepared for: Warren Van Damme

Van Damme design
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Date of assessment: 9th April 2024

Date of report: 14th April 2024

About the Author

The report was written by Rob Wall of Greater Gippsland Tree and Garden Care. Rob has 2 years tertiary experience (Ass Dip Horticulture, VCAH Burnley 1984-1985 majoring in Arboriculture). He has subsequently had more than 35 years professional experience during which he has been a consulting and report writing Arborist for more than 20 years. Rob has been working extensively in Gippsland for more than 20 years through his business Greater Gippsland Tree and Garden Care.

Introduction

- Chairo Christian school is an independent school operating from 5 campuses in west and south Gippsland. The Pakenham campus has been operating since 1998. The current site that is set in a rural location is a former farm that is gradually being developed into an education precinct.
- As part of this development, it is proposed that a new early learning centre and carpark be built on land that is being used as a soccer field and a small part of a wetlands area.
- Some trees will need to be removed if the development is to take place as planned while others need to be protected during and after the building phase so they have the best chance to survive and prosper after the development has been completed.
- This report will identify the trees that will need removal, and those in the vicinity of the proposed development that are to be retained and the measures that need to be taken to give the retained trees the best chance of survival.

Method

A site visit was undertaken by Rob Wall and Brendan Wall on Tuesday, 9th April 2024 at 7 am.

The weather was cool and still. The ground was wet from overnight rain but it was not raining at the time of inspection.

The tree's height and spread were estimated and DBH was measured.

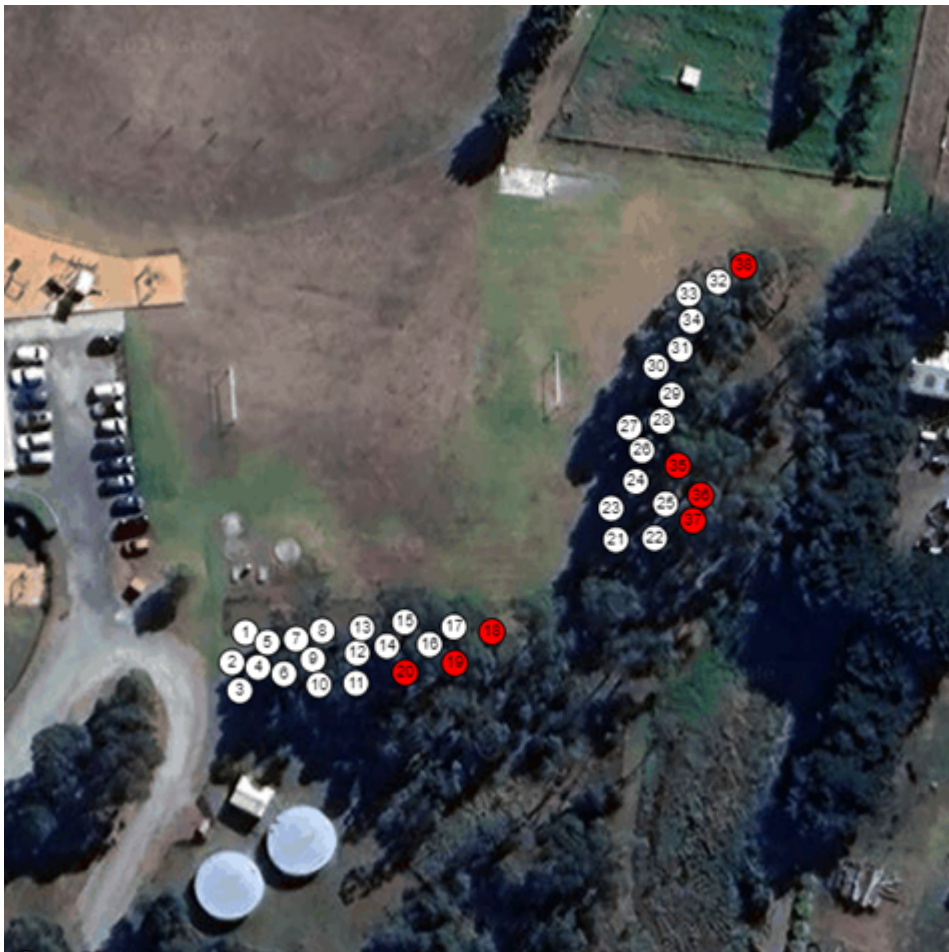
All observations were from ground level and notes were taken on the day.

Site description

585 Bald Hills Rd Nar Nar Goon is a school site set among farms in a rural area. The site is on the flat land between the foot hills of the Victorian Alps and Westernport Bay. The land has a gentle slope down to the south.

Site map

Refer architectural drawing TP03 B “Vegetation Impact Plan”



Tree Survey

Tree #	Species	Common name	DBH (cm)	Height (m)	Spread (m)	Age	Amenity value	TPZ (m)	ULE (Years)
1	<i>Acacia melanoxylon</i>	Blackwood	33	12	7	Semi-mature	Low	4.0	5-15
2	<i>Eucalyptus obliqua</i>	Messmate Stringybark	32	8	6	Semi-mature	Low	3.8	5-15
3	<i>Eucalyptus spp.</i>		10	6	3	Juvenile	Nil	2.0	<2
4	<i>Eucalyptus viminalis</i>	Manna Gum	47	16	7	Semi-mature	Low	5.6	15-40
5	<i>Eucalyptus radiata</i>	Narrow-leaved Peppermint	42	12	7	Semi-mature	Low	5.0	15-40
6	<i>Eucalyptus radiata</i>	Narrow-leaved Peppermint	16	8	2	Juvenile / semi-mature	Low	2.0	<2
7	<i>Eucalyptus viminalis</i>	Manna Gum	78	16	13	Semi-mature	Medium	9.4	15-40
8	<i>Eucalyptus radiata</i>	Narrow-leaved Peppermint	26	10	6	Semi-mature	Low	3.1	15-40
9	<i>Eucalyptus obliqua</i>	Messmate Stringybark	21	15	3	Juvenile / semi-mature	Low	2.5	5-15
10	<i>Eucalyptus viminalis</i>	Manna Gum	42	18	6	Semi-mature	Low	5.0	15-40
11	<i>Eucalyptus obliqua</i>	Messmate Stringybark	34	18	7	Semi-mature	Low	4.1	15-40
12	<i>Eucalyptus viminalis</i>	Manna Gum	55	18	8	Semi-mature	Low	6.6	15-40
13	<i>Eucalyptus viminalis</i>	Manna Gum	60	22	12	Semi-mature	Medium	7.2	15-40
14	<i>Eucalyptus viminalis</i>	Manna Gum	58	23	11	Semi-mature	Medium	7.0	15-40
15	<i>Eucalyptus viminalis</i>	Manna Gum	49	22	9	Semi-mature	Medium	5.9	15-40
16	<i>Eucalyptus obliqua</i>	Messmate Stringybark	31	14	5	Semi-mature	Low	3.7	15-40
17	<i>Eucalyptus viminalis</i>	Manna Gum	49	16	8	Semi-mature	Medium	5.9	15-40
18	<i>Eucalyptus ovata</i>	Swamp Gum	49	18	8	Semi-mature	Medium	5.9	15-40
19	<i>Eucalyptus viminalis</i>	Manna Gum	50	18	7	Semi-mature	Low	6.0	15-40
20	<i>Eucalyptus viminalis</i>	Manna Gum	51	18	6	Semi-mature	Low	6.1	15-40
21	<i>Eucalyptus viminalis</i>	Manna Gum	60	20	13	Semi-mature	High	7.2	15-40
22	<i>Eucalyptus viminalis</i>	Manna Gum	37	18	10	Semi-mature	Medium	4.4	<2

Tree #	Species	Common name	DBH (cm)	Height (m)	Spread (m)	Age	Amenity value	TPZ (m)	ULE (Years)
23	<i>Eucalyptus obliqua</i>	Messmate Stringybark	32	12	6	Semi-mature	Medium	3.8	5-15
24	<i>Eucalyptus viminalis</i>	Manna Gum	50	23	15	Semi-mature	High	6.0	15-40
25	<i>Eucalyptus viminalis</i>	Manna Gum	29	15	5	Semi-mature	Medium	3.5	5-15
26	<i>Eucalyptus viminalis</i>	Manna Gum	50	18	14	Semi-mature	High	6.0	15-40
27	<i>Eucalyptus obliqua</i>	Messmate Stringybark	28	12	7	Semi-mature	Medium	3.4	5-15
28	<i>Eucalyptus dives</i>	Broad-leaved Peppermint	20	6	6	Juvenile / semi-mature	Low	2.4	<2
29	<i>Eucalyptus viminalis</i>	Manna Gum	53	18	12	Semi-mature	High	6.4	15-40
30	<i>Eucalyptus viminalis</i>	Manna Gum	18	10	5	Semi-mature	Low	2.2	5-15
31	<i>Eucalyptus viminalis</i>	Manna Gum	61	18	9	Semi-mature	High	7.3	5-15
32	<i>Eucalyptus viminalis</i>	Manna Gum	50	16	10	Semi-mature	Medium	6.0	<2
33	<i>Eucalyptus viminalis</i>	Manna Gum	56	22	10	Semi-mature	High	6.7	15-40
34	<i>Eucalyptus viminalis</i>	Manna Gum	42	18	7	Semi-mature	Medium	5.0	15-40
35	<i>Eucalyptus viminalis</i>	Manna Gum	22	12	4	Juvenile / semi-mature	Low	2.6	5-15
36	<i>Eucalyptus viminalis</i>	Manna Gum	27	16	6	Semi-mature	Medium	3.2	15-40
37	<i>Eucalyptus viminalis</i>	Manna Gum	36	20	11	Semi-mature	Medium	4.3	15-40
38	<i>Eucalyptus viminalis</i>	Manna Gum	48	20	11	Semi-mature	Medium	5.8	15-40

All of the trees in the survey have been planted, with only tree 1 (*Acacia melanoxylon*) and tree 28 (*Eucalyptus ovata*) being indigenous to the site.

White dots denote trees to be removed.
Red dots denote trees to be retained.

TPZ – Tree protection Zone
CRZ – Critical root zone
DBH – Diameter at breast height (1.4m)
ULE – Useful life expectancy

Discussion

Trees are an essential part of our urban environment. They give scale, freshness and age to our manmade developments. They add the x factor that make some areas desirable to live or visit. Chairo have plans to further develop their Pakenham campus to include a new early learning centre. These plans include a paved car parking area a new building and an outside discovery/learning area. The plans show that a number of trees will need to be removed and that some trees are to be retained. If trees are to be retained then an effort is required by the builders to ensure that the retained trees survive and prosper long after the building has been completed.

All of the trees surveyed for the purposes of this report have been planted and I would suggest they are around 20 years old. I would suggest that only 2 species of tree in the surveyed plantation were indigenous to this area. There is 1 blackwood (*Acacia melanoxylon*) and 1 Swamp gum (*Eucalyptus ovata*) in the surveyed trees, the rest are native but not indigenous. All of these trees have been planted by the school community and therefore Clause 52.17 and clause 52.16 which deal with the destruction and lopping of native vegetation are not applicable in this case.

On a side note, between my initial quick site visit to look at what was involved (mid march) and when I did the data collection (start of April) tree 34 seems to have died. There are some green tips right on the end of the branches but the vast majority of the canopy has browned off and I suspect will not recover. This is with no development occurring, just a natural occurrence during a very dry March 2024. It is important to give the retained trees the best possible chance of survival.

There are a number of trees that are marked for removal due to their proximity to the proposed car park and the proposed building. These are trees # 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33 & 34. The trees in the direct vicinity of the development which are to be retained are trees # 18, 19, 20, 35, 36, 37 & 38. All of the trees to be removed are either where the building is proposed to be built or where the car park is proposed to be built.

The retained trees must be protected during the construction phase so they have the best chance of survival. Trees are not just the woody aboveground structures that can be seen. They also have a below ground structure that anchors the above ground part of the tree in high winds and provides water oxygen and nutrients that enable a tree to live, photosynthesise and produce the above ground structures. When roots are severed the tree may be deprived of feeding roots (used for the nutrition of the tree) or structural roots (used to hold the tree upright especially in high winds)

There is an Australian standard that deals with the protection of trees on development sites. This deals with the protection of the part of the tree we can see, the trunk, branches and leaves, as well as the root system, which we cannot see. A tree protection zone is a "no go" area in which the critical root zone of the tree is protected by a physical barrier from foot traffic, vehicular traffic, car parking, washing of paint brushes, testing of nail guns and other similar behaviours. The above ground

structure of the trees should be protected and if any pruning is needed then it should comply with the Australian standard (AS4373 2008). A significant monetary penalty should apply to breaches of the “no go” zone. Australian standard AS 4970-2009 deals with the protection of trees on development sites.

A simple formula has been developed. $TPZ = DBH \times 12$

DBH is the diameter of the tree at 1.4 m above ground level in metres

This area should be fenced off for the duration of the building process. The standard says that an incursion of up to 10% can be tolerated by the tree but more than 10% is incompatible with long term health and life of the tree. The less the better for the tree's health. As a guide if the TPZ is 10m roots may be cut in one direction 7m away from the trunk to give the maximum 10% incursion into the root zone. If an incursion into the root zone is made a suitably qualified arborist should be present to supervise the cutting of any roots that may occur.

I would suggest temporary fencing as a good physical barrier. This will be needed to keep demolition and construction workers away from the trunks and roots of all trees to be retained.

Recommendations

- Trees # 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33 & 34 should be removed and appropriated replanting done as per council specifications
- Tree# 18, 19, 20, 35, 36, 37 & 38 should be retained and appropriate tree protection zones should be set up during the construction process. This should include the installation of temporary fencing to exclude builders and construction from the critical rootzone of the trees to be retained.
- Any incursion into the tree protection zone needs to be supervised by a suitably qualified arborist. Where roots need to be severed they should be cut with a saw/ secateurs not ripped out with a machine. This should be supervised or performed by a suitably qualified arborist.
- If any building is to take place within the critical root zone then unintrusive bored piers designed by engineers should be installed under the guidance of a level 5 (or equivalent) qualified arborist.
- Any pruning of the retained trees should be compliant to Australian standards (AS4373 2008)
- Significant monetary penalties should be applied to any breaches to tree protection zones

Conclusion

Trees are a great asset to any community. Unfortunately, during development sometimes trees need to be removed for the development to occur. These trees should be replaced so that in 20 years there is a pleasant landscape for the children and the rest of the school community to enjoy. Those trees that are retained should be protected during the building process so their health is not detrimentally effected.