

25 October 2018

Ref: C91109

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Addendum Report – St Aloysius College Middle School, Root mapping investigation results and final recommendations regarding proposed development work around Tree 60

Dear Peter,

We are pleased to provide you with the following information regarding the root investigation which was recently undertaken to ascertain the impact on Tree 60 from the proposed development within St Aloysius College Middle School.

NB: This report is to be read in conjunction with Arboricultural Impact Assessment C91109 for St Aloysius College Middle School by ArborSafe dated 11 March 2018.

1. Introduction

A brief recap of the circumstances leading up to the root investigation:

- 1.1 Tree 60 is a *Liquidambar styraciflua* (Liquidambar) located in the property adjacent to the proposed St Aloysius development area. The development would constitute a major encroachment into the Tree Protection Zone (TPZ) of Tree 60 (the subject tree) based on standardised methodology.
- 1.2 The theoretical Tree Protection Zone (TPZ) method has been derived from the Australian Standard AS 4970–2009: *Protection of trees on development sites*.
- 1.3 The relevance of the standardised TPZ method was questioned due to the location of a sandstone rock retaining/boundary wall between the subject tree, situated in the adjacent property, and the proposed development site within St Aloysius Middle School.
- 1.4 The wall was constructed of large sandstone blocks sitting on a bedrock foundation. Small weep holes, to allow drainage along the rear of the wall, were visible in some locations along the interface between the bedrock foundation and the bottom course of stones. A garden bed on the St Aloysius side of the wall, which is proposed to be removed as part of the development work, obscured the remainder of the wall/foundation interface (refer Figure 2 ArborSafe AIA Report, 11 March 2018). The garden bed was within the theoretical TPZ and SRZ of the subject tree.
- 1.5 Potentially, the wall construction had formed an effective root barrier for any significant structural roots from the subject tree into the St Aloysius garden bed and therefore any work on the garden bed would have minimal impact on the trees ongoing health and structure.
- 1.6 It was proposed a trench be excavated along the back of the wall, within the St Aloysius garden bed, to ascertain the amount of root activity penetrating the wall. Following this investigation, a definitive assessment of the development impact could be made regarding the subject tree.

2. Root Investigation Findings

- 2.1 The exploratory trench work was undertaken on 9 October 2018 by means of a third-party contractor utilising a Hydro-Vac truck to limit any potential root impact. Tom Axford, ArborSafe AQF 8 Consulting Arborist, inspected the excavation on 10 October 2018.
- 2.2 The trench was 10m in length, 5m on either side of the subject tree's trunk alignment, with an average depth of 300mm and ~300mm width. The trench depth was significantly restricted by existing rock and large sandstone bedrock slabs and the foundation stones of the sandstone dividing wall.



Figure 1. An image of the excavated trench along the base of the sandstone retaining/boundary wall. Source: ArborSafe, October 2018

- 2.3 Three (3) roots were identified within the trench as being large enough, generally over 40mm in diameter, to warrant comment. Two of the roots were identified as originating from the stump of a previously removed tree within the garden bed, so had no bearing on the assessment, while the remaining root was identified as originating from the subject tree.
- 2.4 The root identified as being from the subject tree penetrated through a weep hole within the base of the wall 3.2m to the northwest of the subject tree's trunk alignment. The root was 60mm in diameter, measured 150mm out from the wall, with the diameter being smaller where it penetrated the weep hole. No displacement of any kind was observed within the stones of the wall.
- 2.5 Multiple smaller roots were identified within the trench and attributed to existing vegetation within the St Aloysius garden bed.



Figure 2. An image of the root identified as originating from the subject tree. Source: ArborSafe, October 2018

3. Discussion

- 3.1 At a distance of 3.2m from the trunk alignment the root would likely be outside the theoretical Structural Root Zone (SRZ) of the subject tree. Combined with the roots relatively small size and the stability of the wall itself against the remaining root system and associated soil volume, it was considered that severing the root would have minimal to no structural bearing on the subject tree.
- 3.2 The root would be providing some nutrient and water resources, to the subject tree, which was showing good health characteristics at the time of assessment. It was considered that a minor drop in health may be observed while the tree compensates for the root loss but that a tree of this species, age and condition would have minimal trouble responding to the severance of a single root of this size, make up and location from the trunk.
- 3.3 This minimal impact would be contingent on no other part of its root system being impacted by the St Aloysius development. It is considered a negligible risk as the wall remains intact as part of the proposed development or development within the adjoining property where it is situated within the next few years.

4. Recommendations

- 4.1 The removal of the garden bed within the courtyard of the St Aloysius middle school, as part of the proposed development referenced within the original AIA report, would have minimal effect on the health and structure of the subject tree, Tree 60.

5. References

- Australian Standard AS 4970–2009: *Protection of Trees on Development Sites*, Standards Australia, Sydney, New South Wales, 2001.

Should you have any queries relating to this information please do not hesitate to contact us on 1300 272 671.

Regards,



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