



**Sonning Lock
Thames Path
Reading
RG4 6SU**

Arboricultural Report

Tree Inspections

Inspection Date: 22nd December 2021

Submission Date: 18th January 2022

Report Ref: VMS 1726

Report Produced by: Mathew Graham NDF, FdSc Arb, MArborA

Contents

- 1) Introduction
- 2) Brief
- 3) Report Objectives
- 4) Report Constraints
- 5) Methodology
- 6) Discussion
- 7) Conclusion

Appendices

Appendix 1: Photographs

Appendix 2: Site Plan

Appendix 3: Glossary of Terms

1. Introduction

1.1 Purpose of this Document:

This report was commissioned to do the following:

- To assess the health and safety of specific trees located at Sonning Lock, Thames Path, Reading, RG4 6SU.
- To recommend remedial works and to advise on any other concerns regarding the health and safety of the trees.

2. Brief

2.1 The inspection was conducted by Mathew Graham who holds a National Diploma in Forestry, Foundation Degree in Arboriculture and 20 years of experience in the Arboricultural industry. The instruction has been given to undertake a non-invasive, ground level and aerial tree inspection on a specific tree located at Sonning Lock, Thames Path, Reading, RG4 6SU.

2.2 The inspections were recommended within a Health and Safety Duty of Care Report carried out in June 2021 by Heritage Tree Services LTD.

3. Report Objectives

3.1 The objectives of the report are as follows:

- To assess the health and condition of the trees via a ground level Visual Tree Assessment (VTA)¹ method of inspection
- To assess the health and condition of the trees from an elevated position using a Visual Tree Assessment (VTA)¹ method of inspection
- Identify and prioritise any maintenance works which might be necessary to remove risk to public safety and property
- Identify works necessary to promote the longevity of the trees on site

4. Report Constraints

4.1 The assessments of tree health that were undertaken and reported are a snapshot of health and condition at the time of the assessment. They represent observations made following an external assessment of symptoms from ground level and aerial position, no invasive tools or machinery will have been used during the assessment.

4.2 Trees are living organisms and susceptible to various biotic and abiotic factors, as a result their condition may change on completion of the site visit for a variety of reasons, including but not limited to:

- as a natural consequence of their pattern of growth, and/or
- in response to the changes in neighbouring plants or manmade infrastructure, from whatever cause, and/or
- in response to the weather, either an extreme weather event or a prolonged spell of consistent weather, and/or
- as a consequence of infection or infestation, and/or
- as a consequence of a pollution incident, and/or
- in response to changes in soil condition or structure.

4.3 The conclusions, and any recommendations following from those stated within this report are proportionate to the conditions found at the time of the assessment. The conclusions are valid for a period of no more than two years from the date that the site was surveyed, or

- until such time as any work is carried out at the site, either in accordance with the remedial action prescribed or for other reasons which may be outside the authors control, or
- until the site is re-surveyed, whichever is the sooner

5. Methodology

5.1 The Health and Safety Duty of Care Report carried out in June 2021 recommended inspections of five trees. These were listed as.

T27: Linden

T754: European Ash

T762: Linden

T763: Common Horse Chestnut

T765: Linden

5.2 The recommendations included basal inspections of potential decay areas within cavities and aerial inspections of potential decay pockets within old pruning wounds.

5.3 Where aerial inspections were required, a MEWP was utilised to enable safe access at height, around the crowns of the trees. This aids in positioning for detailed inspections of areas of concern and presents suitable storage for multiple tools and equipment which may be needed.

5.4 Where the stem was free from obstructions, any potential cavities, voids, holes or recessed buttresses were analysed using a small diameter metal probe. This method is used to aid identification of decaying timber found within a void, and the depth at which it is located. The probe is inserted into pre-existing voids or holes and causes no damage to the tree in any way. The probe is 370mm in length and measurements are taken from remaining protruding probe when inserted within the tree.

5.5 A nylon headed hammer was used to aid identification of concealed voids or areas of decaying wood within the stem. The hammer is used to strike the tree stem, without causing damage to the tree bark, and create a sound which relates to the structural integrity of the timber. These sounds are interpreted by the operator only and based on experience and training. Acoustic sounding was tested around the entirety of the stem, from ground level to approximately 2m. Any areas of concern identified were also tested to give an indication of the integrity of surrounding wood tissue. This includes inspections carried out at height from the MEWP basket.

5.6 Binoculars were used to improve visibility of potential defects at extended ranges.

-
- 5.7** A high-powered LED torch was used to improve visibility of voids with low light levels, which may conceal potential defects.

6 Discussion

6.1 T27: Linden

This tree is listed on the Health and Safety Duty of Care Report as a Linden, however upon inspection was correctly identified as a Beech. The tree had Ivy covering the main stem, which was removed prior to arrival to allow accurate inspection. There is a large limb which extends horizontally above the towpath access road which has been struck by a high sided vehicle causing surface damage to the bank. The weight distribution of this tree is biased towards the towpath and river on the North West aspect. Crown vigour could not be assessed due to time of year, but there appeared to be an even distribution of leaf buds in the crown.

Located on the Northwest face of the main stem from ground level to approximately 2m is a cavity with extensive decay presence. The results from the acoustic hammer testing revealed the presence of deteriorated timber on the Southeast face of the main stem. This area is concealed behind bark with no obvious signs of defect. This would suggest that poor quality timber makes up a large percentage of the main stem and so effects the structural integrity of the main stem near ground level. This level of structural defect presents enough evidence to recommend removal of the tree, and so there was no requirement to further investigate from an elevated position and perform inspections at height.

6.2 T754: European Ash

This tree is located between the towpath and the neighbouring property along the access to the lock. It has a main union point at approximately 0.5m with one stem growing at a steep angle to the side before turning vertically and growing upright. The tree had Ivy covering the main stems and around the base, which was removed prior to arrival to allow accurate inspection. There is evidence of bark damage near to ground level on the Northwest face of the leaning stem, with a shallow void between remaining bark and heartwood. There was no evidence of fungal presence at the time of survey around this area or obvious reason for the bark damage. The use of a nylon headed hammer to test acoustics of the timber around the base revealed no areas of concern. The acoustic sounds created appeared consistent with that associated with normal condition timber.

6.3 T762: Linden

This tree is located adjacent to the towpath which borders a wooded area to the East. The tree has a steep lean angle above the towpath and adjacent river which is likely due to light suppression when establishing in this area. This observation is supported by the presence of no signs of rootplate movement or lifting and no noticeable defects on the main stem as a result of movement. There are multiple small diameter cuts to the previous epicormic growth near the base of the stem, and a heavy build up of leaf litter between these small pegs. Where possible this leaf litter was removed to closer inspect basal areas and buttress recesses. There were no observable signs of defect on this tree, however the lean angle and target potential raises concern.

6.4 T763: Common Horse Chestnut

This tree is location adjacent to two Lime trees along the towpath and adjacent to neighbouring property access gates. It has a lean angle towards the river and over the towpath which is likely due to light suppression from other adjacent trees and wooded areas. The basal inspection identified a cavity with the presence of decayed timber within, which is located on the Southeast side of the main stem. The use of a nylon headed hammer to test acoustics of the timber around the base revealed some deteriorated timber in one buttress root and within the immediate vicinity of the cavity. The remaining stem at the base resulted in no obvious areas of concern and the acoustic sounds created appeared consistent with that associated with normal condition timber. It was not possible for the metal probe used to penetrate passed the decayed wood surface within the cavity and so an accurate measurement of extent of decay was not possible. Due to concerns raised over the condition of historic pruning wounds within the crown of the tree, and aerial inspection was carried out using a MEWP. These pruning wounds have decay present, likely due to the large size of the limbs removed and speed of healing in a declining tree. The largest of the aerial cavities located on the West aspect extends approximately 200mm deep, with likely deteriorated wood continuing passed this point. The extent of this decay is unknown without further investigation in the form of invasive of scanning, however there is substantial stem timber in this location to suggest localised decay wouldn't affect stem stability at this stage. This diagnosis is the same for the remaining smaller decay pockets within the crown and on the stem, but on a smaller scale. Collectively these decay pockets will have a negative affect on the stem stability if faced with lateral forces applied from events

of strong wind, however surrounding trees and wooded areas are currently offering a form of shelter.

6.5 T765: Linden

This tree is located adjacent to T763 on the towpath and incorporated a manmade wooden structure within a potential cavity on the Northwest aspect. This wooden structure was removed prior to arrival to carry out the inspection. There is a large cavity with extensive decay present at the base of this tree which the wooden structure was concealing. This decay extends through to a second cavity on the Southeast aspect which was confirmed by using a metal probe. The use of a nylon headed hammer to test acoustics of the timber around the base supported the visual findings of decay presence, and the extent within the stem. Evidence would suggest that a large percentage of the stem of this tree has decay presence, which will negatively affect its structural stability. Concerns were raised over a potential cavity within an old pruning wound at approximately 4m, however aerial inspection via a MEWP identified that decay was localised to surface wood only within the pruning area.

7 Conclusion

7.1 It is recommended that the remedial action prescribed should be carried out within the times stated to alleviate the current foreseeable risk to public safety and damage to property.

7.2 T27: Beech

The presence of extensive decay in the main stem of this tree along with its location along a heavily used towpath results in the requirement to remove to ground level to alleviate risk potential. This work should be carried out within one month of submission of this report. Any weight reduction work to the crown in an attempt to prolong its usable lifespan may add further stress to a tree of declining health. The use of the main stem as habitat potential was suggested, however due to the lean angle of this stem, it would pose a future hazard as remaining timber loses its structural stability in both roots and stem, with minimal observable signs of deterioration, adjacent to a heavily used public right of way. To improve ecological material for the area, it is recommended that this stem be felled to ground level, and the stem left whole in the adjacent grass area.

7.3 T754: European Ash

As a result of the lack of evidence to diagnose the bark damage near the base of this tree, it is recommended that further investigations are carried out at different times of year, which may provide different findings and construct a better diagnosis for the tree. Due to the potential for Ash dieback (*Hymenoscyphus fraxineus*) it is advised to re-inspect the tree in early summer months when the tree is in full leaf coverage, which will aid in identification of leaf wilt and overall crown vigour. This visit may also identify potential early stages of fungal brackets around the damaged bark near the base if they are present.

7.4 T763: Common Horse Chestnut

The decay pockets identified at the base and in the crown of this tree have raised concerns over its stability with regard to the target potential. Any further development of decaying wood could result in base or stem snap and all resulting debris would likely land on the towpath. The extent of the decay at the base and in multiple areas within the crown is unknown without further investigation in the form of invasive or scanning, and so likelihood of failure cannot be estimated. Any weight reduction work to the crown in an attempt to prolong its usable lifespan may add further stress to a tree of declining health and may speed up the decline process. It is recommended that this tree be removed to

ground level to alleviate risk potential within one year of submission of this report. This timescale is solely recommended to alleviate the visual and ecological impact on the surrounding area when multiple trees of this size are removed. It is likely that the identified decay pockets within this tree are at a tolerable percentage when compared to adjacent healthy wood and so the priority for removal of this tree is as stated.

7.5 T765: Linden

Due to the extensive decay present within the main stem of this tree, and its location on a heavily used towpath it is recommended that it is felled to ground level to alleviate potential risk. This should be carried out within one month of submission of this report.

7.6 All recommended works should be carried out to British Standards for tree works BS 3998:2010 Tree Work Recommendations.

7.7 In the event of an extreme or prolonged spell of consistent weather such as significantly strong or prolonged spells or rain and/or wind on completion of the site visit, it is highly advisable a subsequent visit is arranged. This visit will be to determine if any significant changes have occurred in the condition of the tree as a result of the weather and to make proportionate recommendations to alleviate hazards if required.

Appendix 1 Photographs



T27: Beech
Steep lean angle of main stem and low limb over access road



T27: Beech
Cavity on main stem with extensive decay presence



T754: European Ash
Twin stem tree with union near base.



T754: European Ash
Bark damage near ground level, with localised decay presence.



T762: Linden

Steep lean angle of main stem over towpath, likely due to light suppression.



T763: Common Horse Chestnut

Main stem has lean over towpath



T763: Common Horse Chestnut

Historic pruning wound with decay presence. Void extends 200mm from pruning surface.



T763: Common Horse Chestnut

Cavity with decay presence at base of tree, and buttress with potential deteriorated timber



T765: Linden

Cavity with decay presence on Northwest aspect



T765: Linden

Predrilled holes within decay pocket on Northwest aspect probed to a depth of 250mm.



T765: Linden

Slight lean angle towards towpath and river, and the presence of mistletoe in the upper crown.



T765: Linden

Predrilled hole within decay pocket on Southeast aspect probed to a depth of 220mm.

Appendix 3 Site Plan



Appendix 4:

Glossary of Terms

- **¹ Visual Tree Assessment (VTA)**

Visual Tree Assessment is a tree inspection method, guided by the principles of biomechanics. It is used in three stages: - Visual inspection, Biological inspection & Mechanical inspection

- **²Target**

For the purpose of this report the term target is used as defined in British Standard 3998: 2010. A target is a person or object, whether mobile or fixed, within the potential zone of impact of a tree or its branches, which might be harmed as a result of the partial or total failure of the tree.

- **Deadwood**

Twigs or branches in the crown of the tree which have died off. This can indicate the trees inability to transport fluid and/or nutrients to its extremities signifying that the tree is under stress or has failing systems. It can also take place naturally when a branch affects a process known as “self-pruning”. This occurs when the energy needed to sustain the live branch outweighs the energy it produces.

- **Weak Unions**

The unions between the stem (trunk) and structural limbs or branches sometimes develop weakly, and as the tree ages can become unstable. This can be exacerbated when the tree is affected by other problems. Some species are more prone to developing weak unions.

