KEY TREE SOLUTIONS

ARBORICULTURAL CONSULTANTS



Arboricultural Hazard Assessment

4 West View

Site Address:	4 West View, Beacon Hill, Silkstone Common S75 4QE	Client:	Teresa Wall / Joan Smith
Report Ref:	WVBH01-22	Report Date:	1st September 2022
Author:	Laurence Smith BSc (Hons) Arb, M Arbor A	Signed:	Laurence Smith

1. Introduction 3
1.1 About the Author 3
1.1 Intention of the Report 3
1.2 Scope of the Report 3
1.3 Survey Details 3
2. Site Description 4
2.1 Land Use 4
2.2 Topography 4
2.3 Local Tree Cover 4
2.4 Age Class and Diversity 4
3. Tree Status 4
4. Tree Descriptions and Recommendations 4
5. Conclusions 5
6. Discussion 5
7. Recommendations 6
Signed: 6
8. Caveats and Limitations 7
9. References 7
Appendix A: Survey Reference Information & BS5837:2012 Survey Table 8
A1. Survey Key 8
A2. BS5837: 2012 Cascade Chart 9
Appendix B: Arboricultural Schedule of Works 10
Appendix C: Images 12
Appendix D: Site Plan 15
Appendix E: Statutory Protection 16

1. Introduction

1.1 About the Author

This tree survey and report was carried out by Laurence Smith, an Arboricultural Consultant. Laurence has a degree in Arboriculture, along with a BTEC National Diploma in Forestry and Arboriculture. He is a professional member of the Arboricultural Association with over a decade of experience within the arboricultural industry, initially as an arborist and for the last 7 years as a consultant.

1.1 Intention of the Report

Teresa Wall requested that Key Tree Solutions conduct an independent arboricultural survey of two significant trees located within the property boundary as marked in Appendix D.

This report will make recommendations for tree works, where appropriate, to manage risk to an acceptable level, with the view of maintaining a high quality of tree cover.

Narrative comments and recommendations are given in Sections 5 and 6 and where applicable, referenced with a suitable image.

1.2 Scope of the Report

This report has been compiled in line with the primary recommendations given in BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations (BS 5837:2012), in order to provide an impartial assessment of the tree currently present on site. This excludes information relevant for site development such as tree root protection areas.

The arboricultural survey this report is based upon was conducted using Visual Tree Assessment (VTA) methodology, as devised by Mattheck (1991). VTA is a ground-level visual assessment of a tree, carried out to identify obvious mechanical defects, signs of ill health, potential mechanical failure and the suitability of a tree to a site. The priority for any recommended works considers the size of the part, potential for failure, and the area's occupancy.

Trees are living organisms subject to changes outside human control. Trees and their environment alter with the seasons and it is as well to inspect trees whilst in full leaf and when out of leaf. Following harsh or unexpected weather conditions, or heavy storms it is also prudent to inspect trees. Changes to ground water conditions will affect the root growth of a tree. Such changes are not always the result of human influence and other factors may be involved. Given the potential for ongoing changes it is prudent to inspect trees annually or if any significant changes happen to the site.

1.3 Survey Details

The arboricultural survey (Appendix B) was undertaken on the 29th August 2022, which collected information on the trees.

The survey took place during the summer season, when the trees were in leaf. Weather conditions on the day were clear with no meaningful wind.

The author visually inspected the trees from ground level. In some instances, further investigations such as a climbing inspection or decay detection tools may be necessary to provide additional information. If appropriate, these are recommended within the arboricultural

survey.

Tree data was collected using an electronic distometer and specialist measuring tape in all reasonable situations. In certain circumstances, such as where there was a lack of access, measurements have been estimated and indicated with an asterisk (*).

2. Site Description

2.1 Land Use

The site is residential in nature with the semi detached property being located in the south eastern corner of the site. The land surrounding the property is given over to green space, planted borders and footpaths.

2.2 Topography

The site is raised in the south east with the garden sloping downwards away from the house.

2.3 Local Tree Cover

Tree cover in the area is relatively high, partially due to the number of properties with large enough gardens to accommodate mature trees, along with several large tree groups in the surrounding area.

2.4 Age Class and Diversity

The trees on site are predominantly mature specimens, focused around native and naturalised species.

3. Tree Status

Information obtained from the Barnsley Council's interactive tree protection map visited on the 1st September 2022 shows that the site is not located within a conservation area, however a number of Tree Preservation Order (TPO) designations exist within the site. This information correlates with the location and description of the two surveyed trees.

A screenshot of the planning map is given under Appendix E: Statutory Protection, which shows the location of the TPOs within the site.

4. Tree Descriptions and Recommendations

Where appropriate, trees have been tagged and allocated an ID alongside comments and relevant recommendations within the arboricultural survey found in Appendix B. This can be cross-referenced with any images (Appendix C) where applicable, and the site plan found in Appendix D. An explanation for the arboricultural survey, including any shorthand or acronyms, can be found in Appendix A.

5. Conclusions

The two surveyed trees are both Ash specimens which are infected with Ash Dieback, although T2 to a much lesser extent. Ash Dieback is becoming increasingly prevalent throughout the UK and it is currently estimated that up to 80% of this species population will succumb to the infection. The speed at which trees will die as a result of this infection is affected by a number of variables including atmospheric conditions, natural resistance and volume of infection of the tree and trees in the region. From what has been observed and recorded so far, infected trees can die in as little as 2-3 years, with larger trees sometimes lasting longer.

More information can be found in the Tree Council's 2020 document "Ash Dieback - A guide for tree owners". This is a free publication which can be downloaded via the Tree Council's web page (www.treecouncil.org.uk).

T1's canopy is significantly diminished with around 40% of the canopy absent as a result of infection. In addition to this, it has previously lost two significant limbs and is likely to have a hollowing stem.

T2's canopy is in much better condition, with only around 10% in canopy reduction. This tree also exhibits a swollen lower stem with expansion cracking typical of a tree with internal cavitation. However, unlike T1, this specimen is absent of fruiting bodies. Burr formation and minor cracking is present on a number of limbs.

6. Discussion

T1 presents a number of defects, including the hyper extended limb growing north west, cavitation at the base and a history of branch failures. The tree is also succumbing to Ash Dieback infection, reducing flexibility and making it more brittle and prone to further failures. Given the number of high value targets underneath its canopy, which includes the neighbouring building, car parking spaces and access to the local properties, this specimen is not considered suitable for retention.

T2, while also suffering from Ash Dieback infection, is displaying a higher rate of natural resistance. This tree, as expected for a tree of this age, also presents a number of defects. Primarily these are the minor decay cavities from pruning works, burr development on branches and the assumed internal cavitation.

The decay cavities are relatively negligible in terms of structural impact, however the burr development **could** potentially weaken limbs and is commonly attributed to the bacterial infection *Pseudomonas syringae ssp.* Unfortunately it is very difficult to ascertain the level of structural integrity from ground based observation alone. These most significant burr observed is on a limb which extends over the driveway, however a further burr was observed close to the neighbouring car port. Currently this driveway appears to be used for storage and not car parking, while the other limb extends over the garden. As such, these regions are not considered a high in targets. However, if this was to change or this potential increase in risk is not considered acceptable, it would be possible to prune away this defect although this pruning work would have an impact of canopy form.

Minor bark cracking was observed, primarily on the younger growth. This cracking appeared to be more typical of environmental factors such as drought or freezing temperatures. From ground based observation this cracking appeared to be superficial only and not significant to structural integrity.

The more significant issue with this tree is the potentially hollowing stem. Although this does not have any fruiting bodies, the swelling and expansion cracking is visibly noticeable. While a hollowing stem is commonplace on old trees, the extent to which this is diminishing structural integrity can not be commented upon without additional testing.

Given the prevalence of Ash Dieback infection, the justification for spending this extra capital may not currently be considered reasonable if the tree is to succumb to infection in the next few years, however it would be advantageous to gather further information on the burrs and bark cracking on scaffold limbs so that a more considered recommendation can be made.

7. Recommendations

T1 should be removed as its health has declined to such an extent that it presents too many risks for it to be considered for retention. Comparatively, T2 is displaying a higher rate of natural resistance and while it may have its own issues, these are generally considered to be within acceptable tolerances for the next 24 months. Despite this, further information gathering regarding the burrs and bark fissures on scaffold limbs would be advisable to determine if any remedial action is necessary. This data should be collected by a competent arborist and could be undertaken when T1 is being removed. Data necessary for recording should be discussed with Key Tree Solutions. If this specimen shows no further decline over this 24 month period, it would be reasonable to also investigate the condition of the stem using sonic tomography to ascertain the level of internal decay.

Signed:



Laurence Smith BSc (Hons) Arboriculture, M Arbor A

8. Caveats and Limitations

- All trees have been inspected from ground level using non-invasive techniques unless otherwise stated. In some instances, the surveyor may have used aerial photography to capture images from the site or observe overall canopy health. However, this does not constitute as an aerial inspection.

- Climate conditions including storm, drought and temperature-related factors can cause damage and failure in apparently healthy trees. The client should consider that all trees potentially pose a hazard with the justification for action based on the risk level and target's value. While every effort has been made to detect any significant defects in inspected trees, it is impossible to guarantee a tree's safety.

- Comments on tree conditions and their associated risk relate to the date and time the survey was undertaken. Tree health and structure are subject to development due to the tree's biological nature or other mechanical or physical changes nearby. As such, trees should be inspected at intervals relative to identified site risks and following relevant HSE and Central Government guidance, typically between 1 and 3 years.

- No reports regarding underground utilities or past construction works have been made available to the author. The client should note that such documentation may affect the recommendations of this report.

- As an arboricultural report, the author is not qualified to comment on damage to buildings or underground utilities that may or may not have been caused by roots. Any observations made regarding the condition of such structures are from a lay person's view.

- In instances where trees have been protected by Tree Preservation Orders (TPOs) or other protective acts such as conservation areas, the client should not undertake any tree works without first obtaining permission from the relevant organisation.

- All works should be undertaken following the appropriate Duty of Care and carried out to the standards set out in the British standards document *BS 3998:2010 Tree work - recommendations*. For example, a contractor should include site-specific risk assessments and due diligence inspections for the presence of protected species, including all nesting birds and bats.

9. References

British standards document BS 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*'

British standards document BS 3998:2010 '*Tree work - recommendations*'

Barnsley Council (Online) https://www.barnsley.gov.uk/barnsley-maps/tree-preservation-orders/

Management of the risk from falling trees or branches - Health & Safety Executive (HSC) Document

Appendix A: Survey Reference Information & BS5837:2012 Survey Table

A1. Survey Key

Column Heading	Description
ID	Each tree/group has been given a unique number prefixed with a letter to represent the element type. (T) Tree, (G) Group, (H) Hedge, (W) Woodland. The bracketed number indicates the assumed reference number from the previous plan.
Age Class	The tree is described as Young, Semi-Mature, Early-Mature, Mature, Over-Mature, Veteran or Dead.
Species	The English common name has been used.
Height (m)	An indication of the tree's height measured in metres.
Diameter (mm)	The diameter of the trees stem when measured at 1.5 metres from ground level.
Vitality	A quick reference guide to the trees overall health and condition. Given as Good, Fair or Poor.
General Observations	Narrative comment on the general condition including significant defects and overall appearance.
Management Recommendations	Any works recommended in order to minimise risk, improve form or maintain a high value.
Priority	Any recommendations made have been given a priority rating stated as Low, Medium or High. • Low priority - No timescale and is predominantly for remedial pruning works to improve form or defects. • Medium priority - Should be acted upon within 12 months and is considered to pose a modest risk. • High priority - Should be acted upon immediately and poses a significant risk due to failure potential or a defect located over a high traffic area. • Ongoing - Work which should be conducted on an annual basis.
Estimated Remaining contribution	An estimation of how long the feature will contribute to its surroundings. This is recorded in bands of either <10 years, 10> years, 20> years and 40> years.
Grading	The trees are graded to the categories prescribed within BS5837:2012 (U, A, B & C). The cascade chart for tree quality assessment can be viewed within Appendix A2.

A2. BS5837: 2012 Cascade Chart

Trees to be considered for retention	**(1) Mainly arboricultural qualities**	**(2) Mainly landscape qualities**	**(3) Mainly cultural values, including conservation.**	**Identification on plan**
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	**Light Green**
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	**Blue**
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/ transient landscape benefits	Trees with no material conservation or other cultural value	**Black**
Trees unsuitable for retention				
Category U Those in such a condition that they cannot realistically be retained as living trees in the contact of the current land use for longer than 10 years.	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning). • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. • Tree infected with pathogens of significant to health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality **NOTE**: Category U trees can have existing or potential conservation value which it might be desirable to preserve.			**Red**

Appendix B: Arboricultural Schedule of Works

ID	Age Class	Species	Height (m)	Stem Diameter (mm)	Vitality	General Observations	Management Recommendations	Priority	Estimated Remaining Contribution	Category Grading	Figure ref.
T1	Mature	Ash	24	1210	Poor	Ganoderma brackets at the base on the western side with minor expansion cracking travelling up from this region to 1.5m. 2 large failed limbs at approximately 13m west. High volumes of small and moderately sized deadwood throughout the canopy. Large lateral limb extending north west from 6m beyond the extent of the natural canopy form, potential loss of apical control. Brown curled leaves retained on dead limbs suggesting decline is likely due to Ash Dieback infection. Approximately 40% loss of canopy foliage.	Fell	High	<10	U	Fig 1, 2 & 3.

ID	Age Class	Species	Height (m)	Stem Diameter (mm)	Vitality	General Observations	Management Recommendations	Priority	Estimated Remaining Contribution	Category Grading	Figure ref.
T2	Mature	Ash	20	1200	Good	Tree is much more squat in comparison to the neighbouring tree with multiple vertical lines of expansion cracking around the swollen bowl. Assumed to be as a result of internal hollowing. Stem bifurcates at 2.5m with a large well formed union. Multiple occluded pruning wounds on the lower stems from canopy lifting and reductions. Crown is exhibiting multiple regions of minor dieback at the tips with approximately 10% reduction in overall canopy. Tree has multiple burr formations which could weaken branches. Most likely cause is *Pseudomonas syringae* ssp although not confirmed. Further cracking on young branches and on limbs.	Monitor	Ongoing	20>	B2	Fig 4, 5 & 6

Appendix C: Images



Figure 1. Fruiting bodies at the base of T1



Figure 2. Broken limbs within the canopy of T1.



Figure 3. Canopy within T1 showing large regions of dieback.



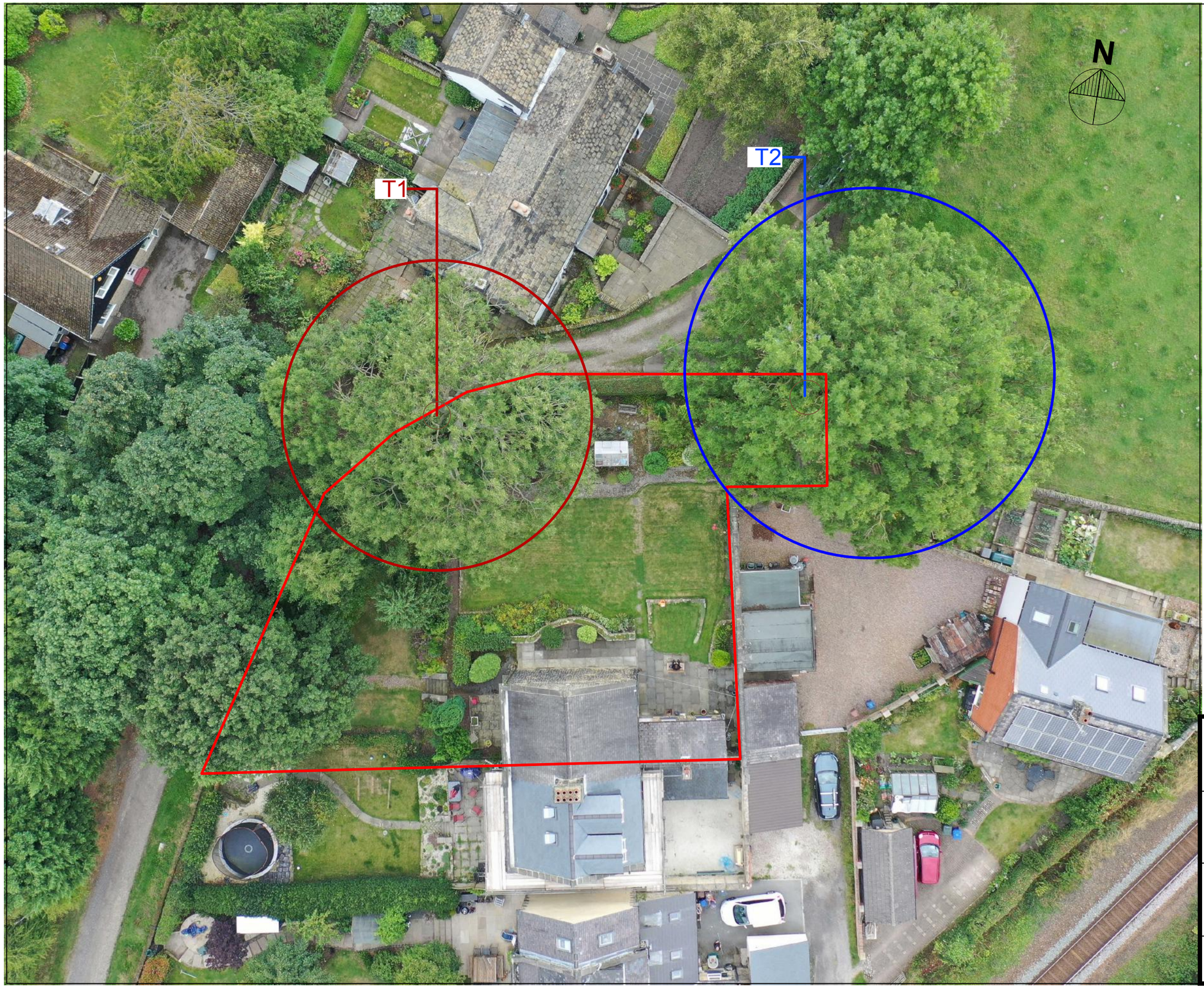
Figure 4. Canopy of T2 showing reasonable health.



Figure 5. Swelling around the lower stem indicative of internal cavitation.



Figure 6. Burr formation on a limb over the driveway.



KEY TREE SOLUTIONS
ARBORICULTURAL CONSULTANTS

KEY- Arboricultural Survey and Constraints Plan
(to be read in conjunction with report ref. WVBH01-22)

- Tree surveyed by Key Tree Solutions - tree location approximated by surveyor

Tree categories (BS 5837:2012)

- Category A Trees
- Category B Trees
- Category C Trees
- Category U Trees
- Approximate Site Boundary

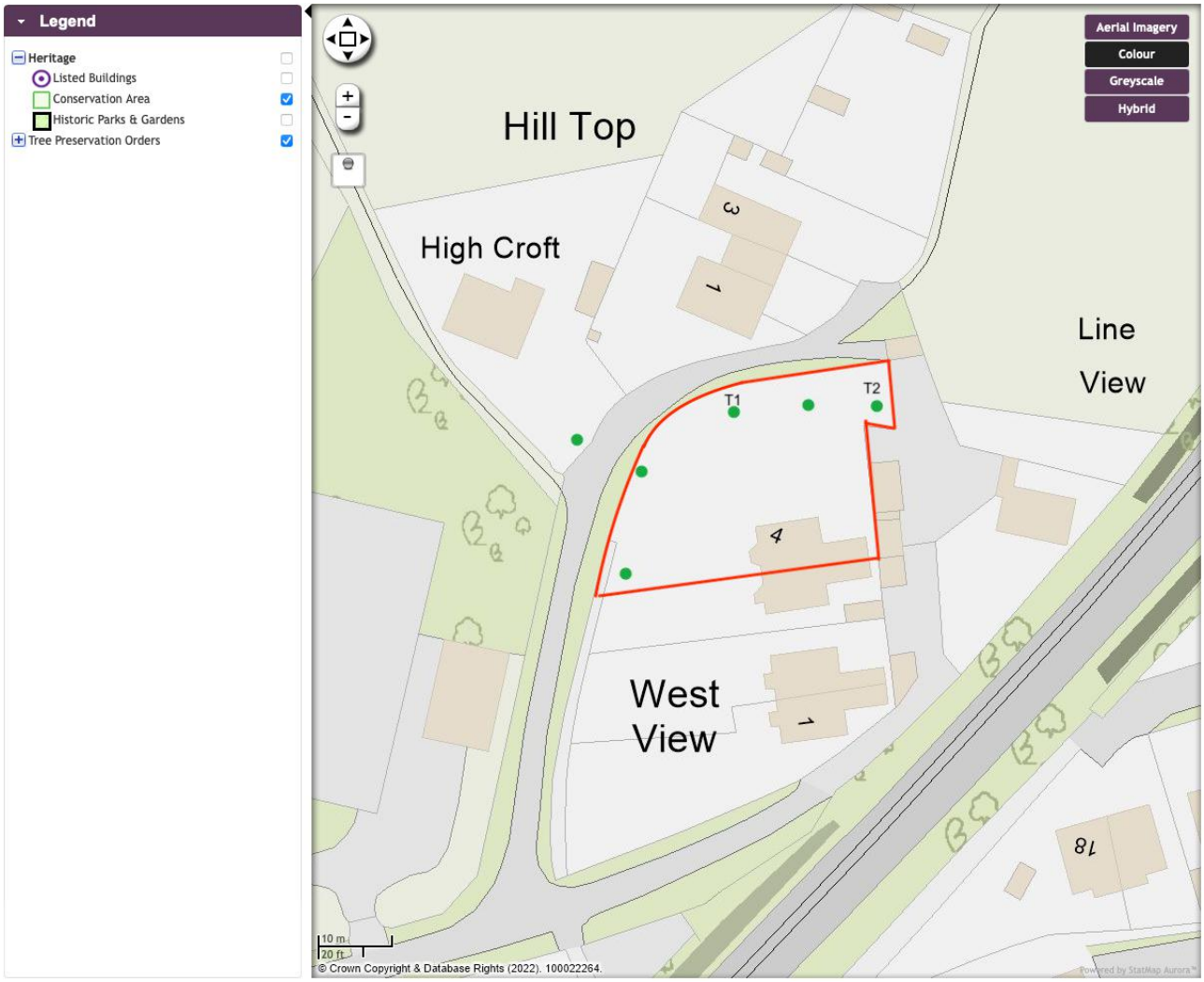
Site Address	Key Tree Solutions
4 West View, Beacon Hill, Silkstone Common S75 4QE	Rolys Cottage, YO61 2QY Tel. 07716 638 613 www.KeyTreeSolutions.co.uk

Job
Arboricultural Hazard Assessment

Title
Appendix D:
Site Plan

Drawn by	Date	Scale @ A3	Drg. no.
L Smith	**Sep 2022**	**NTS**	**1/1**

Appendix E: Statutory Protection



Screen Shot 1. An image taken from the Barnsley Council's website showing the Tree Preservation Orders (TPOs) located on site (Green dots). Labels have been added above the TPO designations which match up to the surveyed trees' locations. The red line denotes the property boundary.