KEY TREE SOLUTIONS

ARBORICULTURAL CONSULTANTS

Arboricultural Report
35 Woodwalk, Wombwell

Site Address:	35 Wood Walk Wombwell Barnsley S73 0lZ	Client:	Paula & Shaune Harrison
Report Ref:	WWB01-21	Report Date:	16th November 2021
Author:	Laurence Smith BSc (Hons) Arb, M Arbor A	Signed:	Laurence Smith

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 decade of experience within the arboricultural industry, initially as an arborist and for the last 6 years as a consultant.

1.1 Intention of the Report

Paula & Shaune Harrison requested that Key Tree Solutions conduct an independent arboricultural survey of the significant trees located within or adjacent to their property at 35 Wood Walk.

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 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 trees currently present on site.

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.

1.3 Survey Details

The arboricultural survey (Appendix 2) was undertaken on the week commencing 14th October 2021, which collected information on the tree stock.

The survey took place during the end of the summer season, when the trees were in a period of senescence. Weather conditions on the day were cloudy with low wind.

Tree data was collected using an electronic distometer and specialist measuring tape in all reasonable situations. In some 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, however to the rear of the property (south east) the garden backs onto a well established woodland (Wombwell Wood) with only a modest gap between the house and the first stem. Due to the heavy shade cast by overhead trees, there is minimal grass within the garden.

2.2 Topography

The site rises in height from north west to south east, making the mature trees within the rear of the property appear even more significant.

2.3 Soil

Information gathered from the British Geological Survey states that the bedrock geology is Woolley Edge Rock formed from sandstone.

Further data gathered from the Cranfield Soil and Agrifood Institute Soilscapes viewer states that in the soil is freely draining slightly acid loamy soils with a loamy texture and low fertility.

2.4 Local Tree Cover

The area around the site has a significant tree cover, with the Wood Walk street directly cutting through a large region of woodland (Wombwell Wood).

2.5 Age Class and Diversity

The surveyed trees and trees within the survey region appear to be a mixture of mature Beech, Sweet Chestnut, Oak and Birch.

3. Tree Status

Information obtained from the Barnsley Council website visited on the 16th November 2021 clearly indicates that the trees to the rear of the property are included within Wombwell Wood which is protected by a Tree Preservation Order (18). As such, no works can be conducted to these trees, with the exception of deadwood removal, without prior consent from the local planning authority.

A screen shot from this search can be viewed in Appendix 5: Statutory Protection.

4. Tree Descriptions and Recommendations

Where appropriate, trees have been described and allocated an ID alongside comments and relevant recommendations within the arboricultural survey found in Appendix 2. This can be cross-referenced with any images (Appendix 3), where applicable, and the site plans found in Appendix 5.

An explanation for the arboricultural survey, including any shorthand or acronyms, can be found in Appendix 1.

5. Conclusions

The property directly backs onto Wombwell Wood which is a protected woodland. Trees both within the garden and woodland are predominantly mature native or naturalised specimens. For the most part, the trees are in good condition with a typical woodland form, having tall main stems and deadwood in the lower canopy. This is due to the competition for light, forcing a rush to the top approach type of growth, shading out lower limbs which in turn die back as they can no longer return as much energy as they cost to produce.

This type of growth within woodlands means that a tree prioritises upright growth. This prioritisation is not a significant issue within woodlands, as the trees benefit from companion shelter and do not need to expend significant energy on defences from the wind. It is for this reason that a single tree grown in the open will never reach the lofty heights that a woodland tree can potentially reach.

While this is a perfectly reasonable method of growth, it does mean that under significant wind loading typically from a direction other than the prevailing wind, exposed limbs and branches can fail. This is true of any tree, woodland or individual.

T1 appears to have historically suffered a stem failure at approximately 9m. It is unclear what has caused this, however given the size and health of the remaining limb, it is likely that this stem was in a decline and failed as a result of this. A single branch now extends over the garden from just below the failure point which also appears to be in poor health. This branch should ideally be removed to prevent additional failures.

T2 has a significant buildup of deadwood in the lower canopy. As previously discussed, this isn't considered to be a reflection of the tree's health, however removal of the deadwood would prevent it from uncontrollably falling into the garden. As this tree is not located within the property, dialog should be opened with the neighbours before conducting deadwood removal.

T3 has a marginally exposed root plate. It is unclear why or how this has happened. Although surface roots have clearly been damaged, the main buttressing roots still extend below the level of disturbance and as such, structural stability is not believed to be compromised. On the southerly side of this stem there is a significant historic region of damage extending from the ground level to a height of approximately 3m. Large columns of growth on either side of this damaged region suggests that the tree is reacting well to the forming decay cavity which, at present, is minimal. Probing of this cavity was only achieved to a depth of 20mm.

The more significant finding, however, was that almost the entire length of this cavity was covered with the old fruiting bodies of *Kretzschmaria deusta.* This is a particularly aggressive fungi which breaks down both cellulose and lignin in both stem and root structures. This decay method causes what is termed as 'soft rot' and can lead to failures in visually healthy trees. Given the current condition of the wood inside the cavity and the species' ability to cope with cavitation, it is reasonable to suggest that the infection is in the early stages and that the tree is currently sound. Despite this, the decay will continue to breakdown structures within the tree and will eventually lead to the death or failure of the specimen.

While this tree is currently believed to be sound and ***with ongoing monitoring*** potentially retainable for the next 10 years, considerations should be given to how easily this tree could be removed at a later date if a workshop was built in the rear of the garden. While any tree can be dismantled avoiding static objects, it would likely take significantly longer without a clear drop zone which would be reflected in the arborist's price.

The remaining two trees T4 and T5, both appear to be in good condition with only minor deadwood in the lower canopy. It was noted that T4 has a significant limb heading south west at 7m which is growing into a large unoccupied region of light. The unions were visually inspected along this limb and considered sound with no observed significant defects. While it would be possible to undertake some reduction work on this limb, any meaningful reduction would lead to large wounds exposing the damaged region to decay any potentially further problems.

T5 is the specimen that has most recently shed a limb causing some concern. Upon closer inspection, 3 additional failure sites were observed on the south westerly side of this specimen. With the exception of the one union failure, all further failures were as a result of stem fracture. From what could be observed from the ground, the union did not appear to have been a weak union type. Given these findings of multiple failures on one side, it is likely that these failures are as a result of high wind conditions from a direction opposing the prevailing winds. Unfortunately these type of failures are not possible to predict as there are no visual defects. While some pruning could be achieved to limit the extent of branches in this aspect, there is no guarantee that this will prevent failures in the future and it may possibly affect the wind exposure on other parts of the tree. In relation to this, no recommendations have been given for this specimen other than the tidying up of damaged branches and removal of deadwood.

6. Caveats and Limitations

6.1
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.

6.2
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.

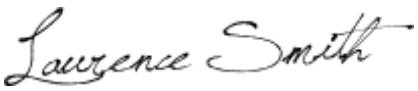
6.3
No reports regarding underground utilities or past construction works have been made available to the author. The client should note that such documentation may affect the recommendations of this report.

6.4
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.

6.5
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.

6.6
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.

Signed:



Laurence Smith BSc (Hons) Arboriculture, M Arbor A

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7. References

British Geological Survey (Online) https://www.bgs.ac.uk

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

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

Cranfield Soil and Agrifood Institute (Online) http://www.landis.org.uk/soilscapes/

Barnsley Council Website (Online) https://www.barnsley.gov.uk

Appendix 1: Survey Reference Information

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.
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.
Branch Spread (m) N E S W	The distance the live crown extends in each fo the four cardinal directions.
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.
Preliminary 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 1.1.

Appendix 1.1 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	**Mid 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	**Grey**
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 2: Arboricultural Survey Data

ID	Age Class	Species	Height (m)	Stem Diameter (mm)	Vitality	General Observations	Preliminary Management Recommendations	Priority	Estimated Remaining Contribution	Category Grading
T1	Mature	Sweet Chestnut	23	380, 460	Good	Bifurcation from 1m with adequate union. Minor cavitation around the base, not considered significant. North westerly stem has failed at 9m with lower branch poorly attached and hanging over the garden. Minor lower deadwood.	Remove poorly attached limb at 9m and tidy the damaged area. Remove deadwood over the garden.	High	20>	B2
T2	Mature	Sweet Chestnut	26	770	Fair	Located off site with root plate extending under the fence and onto the property. Stem bifurcation at 3m with adequate union. High volume of deadwood in the lower canopy due to self shading. Declining limb at 7m north with two lower lateral branches. Unions between mains limbs appear adequate.	Remove deadwood to allow for better ongoing monitoring.	Low	20>	B2
T3	Mature	Beech	26	820	Good	Excavations around the northerly aspect with visible damage to surface roots. Tree still appears to be well anchored with structural buttress roots extending below the excavation. Historic stem damage on the south side from 3m to ground level. Almost fully occluded with vertical reaction growth pillars. Fruiting bodies of *Kretzschmaria deusta* within decay cavity. Currently minimal penetration when probed. Tree displays a high vigour canopy with only minor lower deadwood.	Remove deadwood and monitor root plate for fruiting bodies and canopy for visual decline.	Low / Ongoing	10>	C2

ID	Age Class	Species	Height (m)	Stem Diameter (mm)	Vitality	General Observations	Preliminary Management Recommendations	Priority	Estimated Remaining Contribution	Category Grading
T4	Mature	Sweet Chestnut	23	720	Good	Tree has been slightly suppressed by the surrounding trees resulting in an asymmetrical canopy. Heavy lateral limb extending south west at 7m. Union is well formed and considered adequate. Limb extends approximately 10m where it becomes more exposed. Deadwood within the canopy. Dieback of north easterly limb at 12m east.	Remove deadwood, inspect limb with dieback from a rope and harness.	Low	10>	C2
T5	Mature	Sweet Chestnut	23	890	Good	Located at the edge of the woodland. A number of pruning wounds along the stem suggest that branches extending towards the house have been removed. 4 historic minor branch failure sites on the south westerly aspect, possibly due to a higher level of exposure. With one exception, failures have been as a result of branch fracture. In comparison to other trees of the same variety, very minimal deadwood.	Remove deadwood and tidy damaged/ torn branches.	Low	20>	B2

Appendix 3: Images

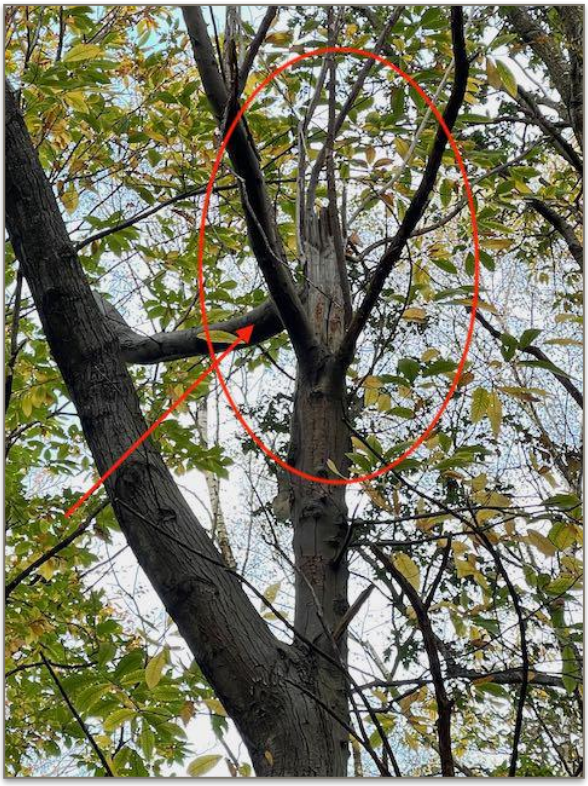

Figure 1. Damaged stem at the crown of T1.

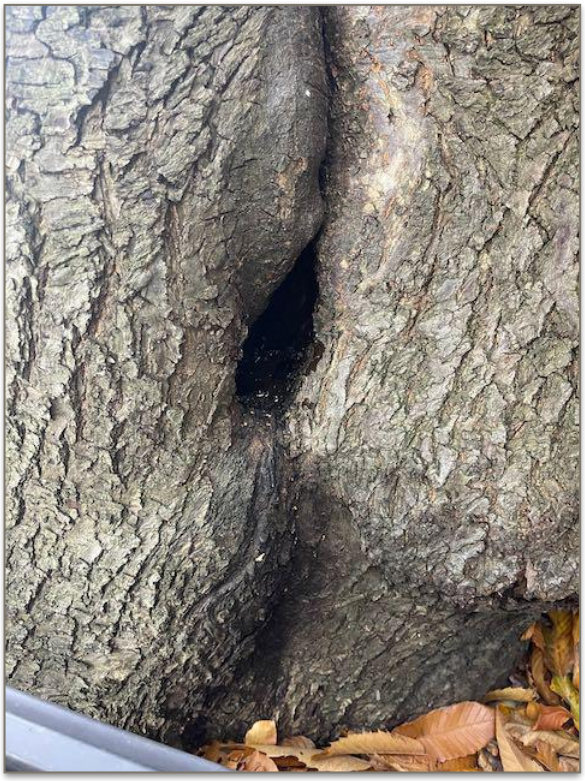

Figure 2. Minor cavity at the base of T1 not considered to be significant.

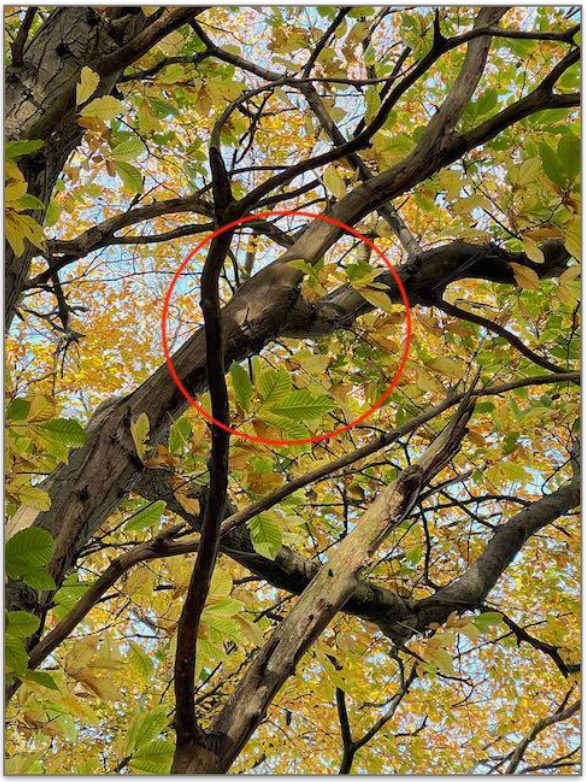

Figure 3. Declining limb on T2 over neighbouring property at 7m north.

Figure 4. Historic vertical column of damage on T3.

Figure 5. Excavations around the stem of T3.

Figure 6. Black bubbly historic fruiting bodies of *Kretzschmaria deusta* located within the cavity of T3.

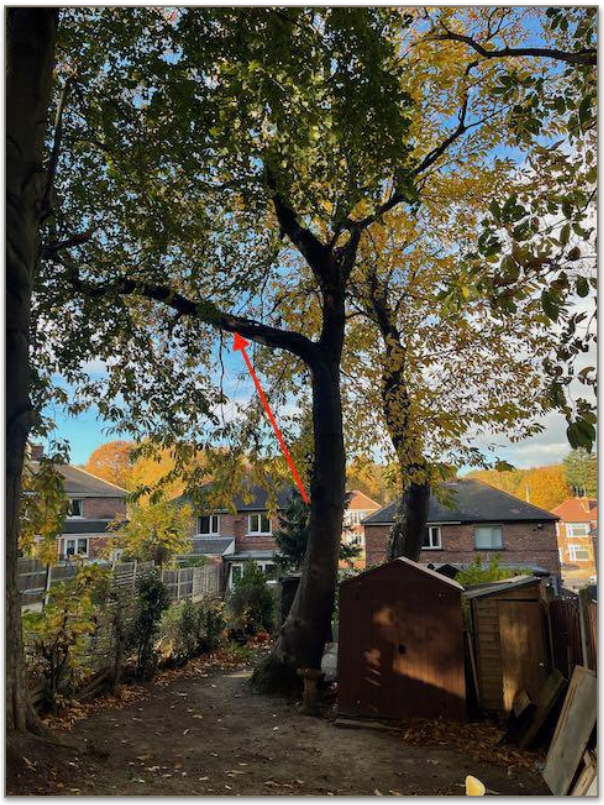

Figure 7. Heavy lateral limb on T4 with a well formed Union.

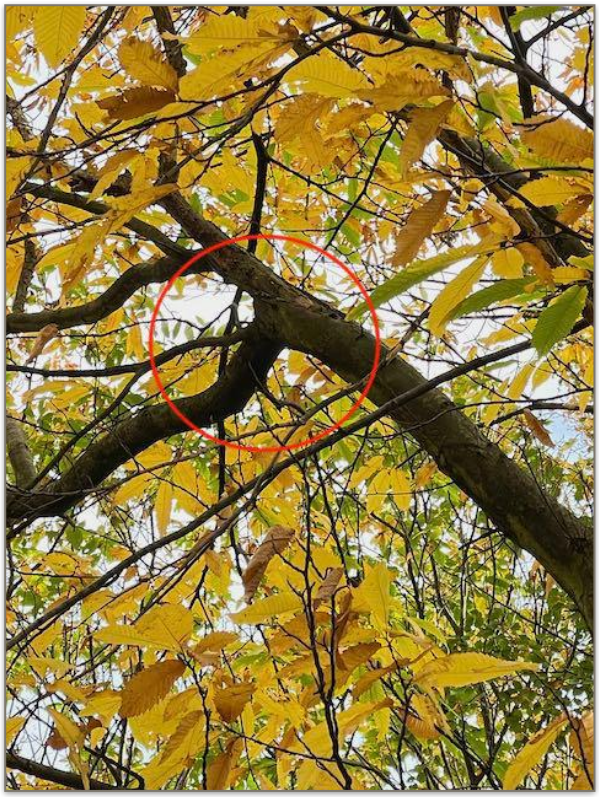

Figure 8. Dieback of a limb at 12m east.

Figure 8. Failure wound on T5

Figure 9. Two further historic failure locations on T5.

Appendix 4: Site Plans

Please see the following page

KEY TREE SOLUTIONS

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KEY

To be read in conjunction with Key Tree Solutions arboricultural survey, report ref. WWB01-21)

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

Site Boundary

Site Location: **35 Wood Aalk, Wombwell, Barnsley, S73 0lZ**			
Document Type: **Arboricultural Report**			
Plan Title: **Site Plan**			
Drawn By: L. Smith	Date / Version: 16/11/2021(1)	Scale at A3: Indicative Only	Drawing: 1/1

Appendix 5: Statutory Protection