Stag Brewery, Mortlake – Permanent Filming Use Application

Arboricultural Survey Report and Impact Assessment

February 2023

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Quality Assurance – Approval Status

This document has been prepared and checked in accordance with Waterman Group's IMS (BS EN ISO 9001: 2008, BS EN ISO 14001: 2004 and BS OHSAS 18001:2007)

Issue	Date	Prepared by	Checked by	Approved by
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Comments

Disclaimer

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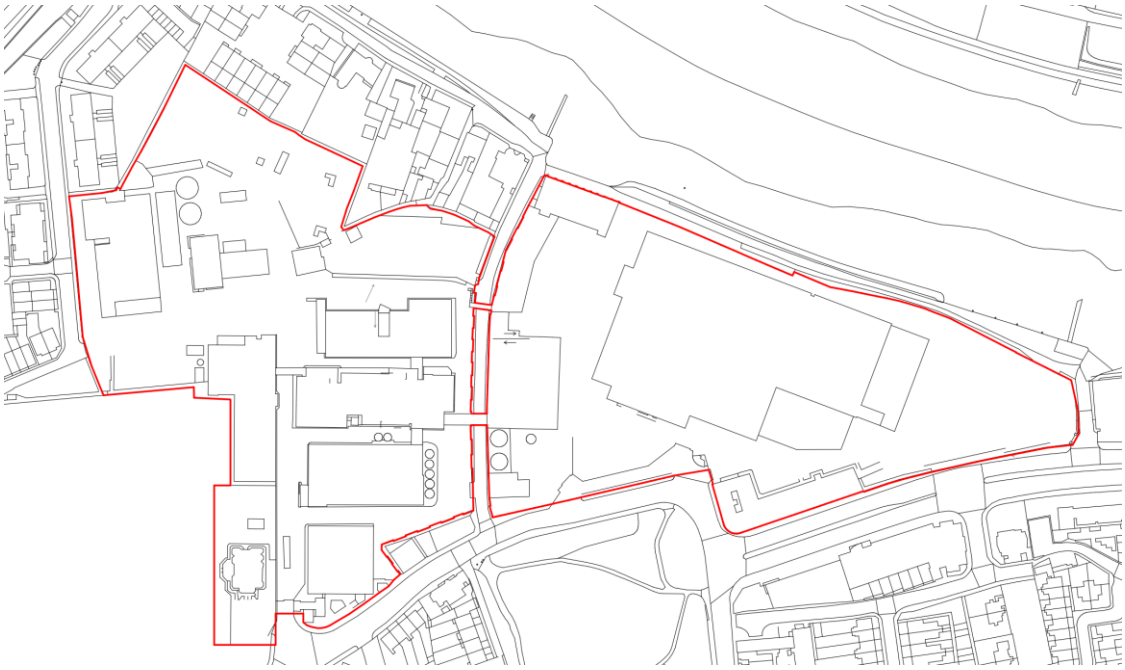
1. Introduction

1.1. Waterman Infrastructure & Environment Ltd (Waterman IE) was commissioned by Reselton Properties Ltd to produce an Arboricultural Impact Assessment (AIA) for the former Stag Brewery Site in Mortlake ('the Site') within the London Borough of Richmond Upon Thames ('LBRuT').

1.2. This AIA has been prepared to support a planning application for film production operations and ancillary activities within the Site (hereafter referred to as the 'Development'). The application seeks planning permission for the use of the whole Site for filming purposes and associated ancillary activities. Initially, it is envisaged that the operator will only utilise Buildings 11, 12, 14 and 15 as well as yard areas in the east of the Site and an external area adjacent to the Maltings building (Building 9). All necessary information has been submitted alongside the application to enable the immediate occupation of these buildings and should other buildings on the site be required to be utilised under the permission, it is envisaged that further details would be required to be provided by way of a suitably worded condition attached to the permission. It should also be noted that the application also includes the erection of external film sets outside of the Maltings building (Building 9). For full details of the proposed operations and activities as part of the Development please refer to the Environmental Assessment Report submitted with the planning application. The application would be limited in duration by a legal agreement, so that it would not preclude the hybrid 2022 planning application considered at the Site (Application A, planning ref: 22/0900/OUT) and the Detailed Application School (Application B, planning ref: 22/0902/FUL) coming forward as and when these are granted planning permission.

Figure 1: Planning Application Boundary



2. Tree Survey Methodology

2.1. The arboricultural survey is based upon existing topographical information relating to the Site provided by APR services (Job no. 915213, dated July 2015 and 916061, dated February 2017) and was otherwise conducted in accordance with the principles outlined within BS5837:2012 Trees in Relation to Design, Demolition and Construction - Recommendations[1] (BS5837) (refer to **Appendix A**).

2.2. Fieldwork was undertaken on the Site and immediately adjacent areas (the 'Survey Area') in December 2021. The tree survey methodology followed the recommendations set out in BS5837.

2.3. The tree survey fieldwork was undertaken in support of several linked planning applications that pertain to an area wider than that covered by this report.

2.4. The survey involved collecting the following information on all trees (both on and off-site) with a stem diameter over 75mm.

Tree Numbers

2.5. Individual trees surveyed were given the prefix 'T'. Trees have been grouped where they form cohesive aerodynamic (i.e. companion shelter), visual (i.e. screening) or cultural (i.e. parkland) arboreal features of similar quality, as identified by the prefix 'G'. Hedges and Woodland groups were given the prefixes 'H' and 'W' respectively.

Species

2.6. Species are listed by their common and Latin names, both in the schedule and in the report text.

Height

2.7. Tree heights are approximate and estimated in metres.

Stem Diameter

2.8. The stem diameter of single stemmed trees is measured at 1.5m above ground level and given in millimetres. The diameter measurement of multi-stemmed trees is taken as a combined measurement of all the major stems. Where stems fork or swell the measurement is taken at the narrowest point below the fork or swelling. Where access to the trunk of a tree is not available, an estimation of the stem diameter is made and identified by '*' on the accompanying tree survey table.

Crown Spread

2.9. Radial crown spread is measured in metres to the nearest decimal (rounded up). These are recorded for each of the four cardinal points where access allows. Where access is not available the spread is estimated and identified by '*' on the accompanying tree survey table. The canopy shape for surveyed trees depicted on the accompanying plans accurately represents the canopy spread as measured on Site.

[1] BS5837:2012 Trees in relation to design, demolition and construction – Recommendations, 2012, British Standards Institution.

Height of Crown Clearance and Canopy

2.10. The height of crown clearance is the height above ground in metres of the first significant branch and the direction of growth. The height of canopy is the height above ground in metres of the main canopy. These are measured to the nearest decimal point (rounded up) for dimensions up to 10m and the nearest whole metre for dimensions over 10m.

Age Class

2.11. The age of each tree is defined as follows:

- Young (Y): Within the first 1/4 of useful life expectancy.
- Semi-mature (SM): Within the second 1/4 of useful life expectancy.
- Early Mature (EM): Within the third 1/4 of useful life expectancy.
- Mature (M): Within the fourth 1/4 of useful life expectancy.
- Over Mature (OM): Tree has exceeded normal life expectancy.
- Veteran (V): Tree displaying veteran characteristics 2.

Physiological and Structural Condition

2.12. The physiological or structural condition of each tree group is described, highlighting specific features. The survey involved ground level examination of the external features of the trees. The structural condition for each tree is described as being Good, Fair or Poor and the physiological condition is described as Good, Fair, Poor, Moribund or Dead.

2.13. Where appropriate, notes on the structural integrity are provided on form, taper, forking habit, storm damage, decay, fungi, pests, etc. Where identified, signs of substantial defects or debility have been recorded. Where access to a tree was not possible, an estimation of physiological and structural condition has been made.

Estimated Remaining Contribution (ERC) in Years

2.14. The Estimated Remaining Contribution (ERC) for each tree is based on species and existing physiological and structural condition of the tree. The ERC may affect proposed development layout because the longer the tree is likely to live, the greater the contribution it will make and the greater the need for retention.

Category Grading

2.15. Each individual tree was given a Category Grading in accordance with BS5837: 2012 to reflect the overall quality and value. The Category Gradings are defined according to the following criteria, which are further divided into sub-categories based on arboriculture, landscape and/or historic value, as defined within BS5837:2012, contained at **Appendix A**:

- **Category Grading A:** Trees of high quality and value, (with a suggested remaining life expectancy exceeding 40 years);
- **Category Grading B:** Trees of moderate quality and value, (with a suggested remaining life expectancy of at least 20 years);

[2] http://www.ancienttreeforum.co.uk/ancient-trees/what-are-ancient-veteran-trees/

- **Category Grading C:** Trees of low quality and value, (with a suggested remaining life expectancy exceeding 10 years or young / immature trees which may have the potential to attract a higher Grade as they mature); and
- **Category Grading U:** Trees which are in such a condition that they are unsuitable for retention in the context of the current land use for longer than 10 years.

Preliminary Management Recommendations

2.16. Any recommendations made for management of the trees (for example, tree surgery) prior to development are not a 'specification' for tree work. These recommendations are proposed on the basis that they are undertaken by a qualified arboricultural contractor, such as those listed in the Arboricultural Association's Approved Contractors Directory (www.trees.org.uk). Any work undertaken by the contractor should be in accordance with best practice, such as the European Tree Pruning Guide[3], or required by BS3998: 2010 'Tree work – recommendations'[4].

2.17. Where management recommendations are made, they are accompanied by a recommended timeframe in which they should be undertaken.

Limitations

2.18. All trees were visually inspected from ground level with no climbing, boring or sampling undertaken. All measurements are metric and where qualified, approximate. The comments made were based on the conditions and observable factors present at the time of inspection, including weather, seasonality and access.

2.19. This report is intended to assist with the planning and management of proposed site operations.

2.20. The Arboricultural Survey and this report does not constitute a tree risk assessment. This report is not intended to confirm the safety, (or otherwise) of surveyed trees or tree groups. References to defects or potential safety issues are not exhaustive and are intended as a guide only to inform the provision of further resources / more detailed investigations. The person(s) responsible for the management of the trees surveyed within this report are recommended to commission a separate tree condition survey by a suitably qualified and experienced person to manage the Health and Safety aspects of trees under their control and discharge their reasonable Duty of Care under the 'Duty of Care' owed under the Occupiers' Liability Act 1984[5].

Un-assessable Risks

2.21. Owing to the changing nature of trees and other Site circumstances, this report and any recommendations made remains valid for a period of 18 months between authorisation of this report and commencement of the Works. Any alteration to the Site or development proposals could change the current circumstances and may invalidate this report and any recommendations made. An updated survey would therefore be required.

2.22. Unless otherwise stated, trees should be inspected regularly to satisfy the 'Duty of Care' owed under the Occupiers' Liability Act 1984, or directly proceeding heavy storms (i.e. force 6-7 and above on the Beaufort scale). It is recommended that advice from an ecologist is sought prior to carrying out any works to trees, in order to ensure these are carried out in accordance with (in

[3] European Tree Pruning Guide, 2001, Arboricultural Association.

[4] BS3998:2010 'Tree work - recommendations', 2010, BSI.

[5] HMSO (1984); 'Occupiers' Liability Acts 1957 and 1984'. HMSO.

particular) the protection afforded to wild birds and bats under The Wildlife and Countryside Act[6] and The Conservation of Habitats and Species Regulations[7].

Root Protection Area

2.23. The Root Protection Area (RPA) defines the approximate underground area occupied by the tree roots based on a calculation relating to the girth of the tree, point above ground at which the trunk begins to branch out and the number of stems. BS5837 outlines the calculation of RPA as follows:

$$\text{RPA}(\text{m}^2) = \left(\frac{\text{stem diameter (mm) @ 1.5 m} \times 12}{1\ 000}\right)^2 \times \pi\ (3.142)$$

2.24. Trees with more than one stem below 1.5m above ground level are given an aggregate stem diameter using either of the following two calculations as outlined in BS5837. This diameter is then used in the above calculation to estimate RPA:

a) For trees with two to five stems:

$$\sqrt{(\text{stem diameter 1})^2 + (\text{stem diameter 2})^2 \ldots + (\text{stem diameter 5})^2}$$

b) For trees with more than five stems:

$$\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$$

2.25. The RPA of existing tree stock is an important material consideration when considering site constraints and planning development activities.

2.26. Construction activities, materials storage or changes in level should generally be avoided within the RPA of a tree to be retained. This is because these operations have the potential to damage or kill the tree, the safe retention of which may be a condition of planning permission. This is significant when considering construction in proximity to off-Site / third party land. Special construction techniques, i.e. no-dig construction / permeable surfacing may be considered for light loadings, e.g. pedestrian footpaths etc., within the RPA.

2.27. The RPA often varies in size to the physical area occupied by the canopy spread (due to particular tree species or management practices to artificially alter the canopy size). This is of particular importance when integrating new development in proximity of existing trees. Similarly, the canopy heights (as identified in the schedule of existing trees in **Appendix B**) should be considered as the usable space below a low branching tree, which will be severely restricted without specific arboricultural works to raise the canopy (which may not always be appropriate).

2.28. It should also be noted that BS5837 states that although RPAs should be plotted as a circle centred on the base of the stem, pre-existing site conditions or other factors may indicate that rooting has occurred asymmetrically, and so RPAs may instead be represented as a polygon of equivalent area.

[6] The Wildlife and Countryside Act 1981 (as amended), OPS.I
[7] The Conservation of Habitats and Species Regulations 2017, OPSI.

3. Fieldwork Observations

3.1. A total of 149 individual trees and 3 groups of trees were recorded within the Survey Area, with those within and adjacent to the Site shown in **Drawing 1**. The category grading of each feature is detailed within **Table 1**.

Table 1: Category Grading of Trees and Groups within the Survey Area

Category	Quantity	Description
A	22	T3, T29, T48, T49, T50, T51, T52, T53, T54, T55, T56, T57, T64, T74, T75, T77, T78, T82, T106, T107, T155, T321
B	56	T4, T5, T6, T7, T8, T9, T10, T11, T14, T15, T25, T26, T27, T31, T34, G58[8],T59, T84, T85, T86, T88, T89, T90, T93, T94, T95, T97, T98, T99, T100, T133, T134, T136, T137, T140, T145, T149, T154, T157, T163, T165, T166, T312-319, T320, T327, T329, T330, T331, T340
C	58	T2, T12, T16, T17, T19, T20, T24, T30, T33, T37, T38, T39, T40, T41, G42, T43, T44, T45, T46, T47, T60, T61, T62, T67, T70, T71, T73, T79, T81, T83, T96, T120, T144, T152, T158, G162, T171, T172, T300, T303, T304, T305, T306, T309, T310, T322, T323, T324, T325, T326, T332, T333, T334, T335, T336, T337, T338, T339
U	16	T22, T28, T32, T35, T68, T72, T76, T121, T139, T142, T143, T302, T307, T308, T311, T328

3.2. Trees present within the Site are located both adjacent to its boundaries and within the internal areas of the Site (**Photographs 1 and 2**).

Photograph 1 (T67-T82)

[8] G58 has been awarded a category B overall due to its value as a landscape feature (as prescribed in BS5837), however on Drawing 1 the individual trees within the group are identified as being within different categories in order to identify any trees whose individual merit may be lower.

Photograph 2 (T8-T11)

3.3. The majority of trees surveyed are broadly similar in age and are considered likely to date from the construction of the brewing facilities (circa late 19th and early 20th centuries).

3.4. Further details relating to the existing tree stock on or adjacent to the Site can be found in **Appendix B** and on **Drawing 1**.

4. Arboricultural Impact Assessment

Proposals

4.1. The Applicant is submitting a full planning application for the use of the existing buildings and land for film production operations, the erection of external film sets, and ancillary activities and the associated use of the existing on-site parking spaces with access from Lower Richmond Road and Ship Lane. Initially it is anticipated the operator's film production operations and ancillary activities would be limited to Buildings 11, 12, 14, with external filming in the open space adjacent to the Maltings (Building 9) and yard areas in the west of the Site for parking (**Figure 2**). The East Gatehouse (Building 15) would be used for security purposes.

Figure 2: Existing Buildings and Structures within the Site

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Proposed Operations and Activities

4.2. The following describes the operations, erection of external film sets and activities associated with the proposed use of the Site by the operator:

- Other than the external area adjacent to the Maltings building which would include the erection of external film sets, filming would occur within the existing buildings within the Site.
- For the operator's filming activities, the Bottling Plant / Packaging Building (refer to Building 12 of **Figure 2**) would be used as 'closed set'. The Sports Pavilion Building (refer to Building 14 of **Figure 2**) would be used intermittently for set location filming. Ancillary offices will be located within the Former Engineers Store / Former Bottling Hall (refer to Building 11 of **Figure 2**);
- No pyrotechnics or other noise or light generating effects are anticipated to be visible or audible outside the existing buildings;
- No modifications to the existing buildings would be required;
- No breaking of ground or vegetation clearance is required;
- Vehicles will be parked in existing yard areas;
- Operational hours, including servicing and deliveries, would be limited to between 06:00 - 21:00 Monday to Friday and 08:00 – 16:00 Saturday and Sunday, including Bank Holidays, 7 days per week;
- No overnight sleeping accommodation would be required, although security attendance on Site would be 24 hours, 7 days a week;
- Access and egress would be via the existing site access points, with car parking accessed through a gate adjacent to the East Gatehouse (refer to Building 15 of **Figure 2**), to the south of the Site off Lower Richmond Road. The intensity of vehicular movements on and off Site will vary;
- No power generators would be required with all power supplied from the mains grid;
- Waste would be stored in a designated waste disposal area on Site; and
- No chemicals/paints, fuel or oil are anticipated to be stored on the Site.

Arboricultural Impacts

4.3. The erection of an external film set and the proposed filming use of the Site will not have any greater impact on the existing trees than those caused by the historical use of the Site as the existing roads, footpaths and areas of hardstanding will be used for vehicle and pedestrian movements and all other activities are assumed to be within existing buildings. No vehicle or pedestrian movements will be through the RPAs of trees where they are not protected by existing hard surfaces.

Site Monitoring

4.4. A retained Arboricultural Consultant will be appointed for the duration of the Site's use as a filming location. Their purpose will be to ensure that adequate tree protection measures have been installed where needed. An initial visit will be held between the retained arboricultural consultant and a representative of the site occupiers within one month of the planning permission being granted, and prior to any new tenants taking occupancy. The frequency of any subsequent visits will be dependent on the proximity of any proposed works to the trees.

4.5. A written record of all Site meetings and supervisory visits will be produced by the retained Arboricultural Consultant and will include details of any required tree protection specifications. This record will be issued to the current occupier of the Site as a point of reference and a representative of the London Borough of Richmond Upon Thames.

Construction Exclusion Zone

4.6. Although it is not anticipated that specific tree protection measures will be required, if the range of proposed operations change, works may be required in proximity to existing trees, and therefore tree protection will be required to prevent unauthorised access within the RPAs. The factors which most commonly result in below ground damage affecting oxygen diffusion (and therefore must be avoided) include:

- Compaction of the ground;
- Any change in soil levels (even if temporary), including ground excavation and soil stripping;
- Covering the root zone with impervious surfaces;
- Changes in the water table level or ground saturation; and
- Damage by the direct toxicity of phytotoxic materials, dust and runoff.

4.7. In addition to the precautions set out below, the following general precautions will also be followed within the RPAs or close to the canopies of the trees:

- No excavations, including by hand;
- No storage of machinery;
- No storage or handling of materials, fuel, chemicals or spoil;
- No fires;
- No vehicular access;
- No pedestrian access;
- No alteration, increase or decrease, to existing ground levels; and
- No excavation or installation of services.

4.8. If deemed necessary, a **Construction Exclusion Zone (CEZ**) will be established around these trees. This will be secured by means of temporary protective fencing with weatherproof signage (see **Appendix E** for an example) or adequate ground protection.

Tree Protection Barriers

4.9. Following the principles set out in section 6.2.2 of BS5837:2012, the tree protection barriers should be "*fit for the purpose of excluding construction activity and appropriate to the degree and proximity of the work taking place around the retained trees*". The exact nature of these barriers will be dependent on the nature and proximity of the proposed operations in relation to the existing trees and other Site factors (such as existing surface treatments). An example of suitable fencing would be 2m tall braced weldmesh panels secured on rubber or concrete feet (as shown in **Appendix C**) or 4' high chestnut paling (as shown in **Appendix D).**

4.10. All-weather notices should be secured to the barrier, examples of which are contained in **Appendix E**.

5. Summary

5.1. The Site and Survey Area included trees of mostly semi-mature to early-mature age; a number of which are subject to an Area Tree Preservation Order or located within the Mortlake Conservation Area. Trees are largely located along the boundaries of the Site or in the middle of the Site, open green space or the River Thames towpath. The tree survey comprised a total of 149 individual trees and 3 groups of trees which are listed in the schedule of existing trees within **Appendix B** and of those relevant to the Site shown on **Drawing 1**. The trees on Site are mostly similar in age, likely dating to the current 20th century brewery development. A summary of the trees surveyed, and their Category Grading are described in **Table 1**.

5.2. It is not anticipated that the proposed use of the Site as a filming location will have any impact on the health or structural integrity of the existing trees if the precautions set out in Section 4 of this report are followed.

DRAWINGS

Drawing 1: Baseline Tree Survey (ref. 18671-113-WIE-ZZ-XX-DR-L-7702-P02)

CATEGORY GRADE A
Trees of high quality

CATEGORY GRADE B
Trees of moderate quality

CATEGORY GRADE C
Trees of low quality

CATEGORY GRADE U
Trees unsuitable for retention

ROOT PROTECTION AREAS (RPA)

TREES PREVIOUSLY SURVEYED BUT NO LONGER LIKELY TO BE IMPACTED BY THE PROPOSED SCHEME

INDICATIVE EXTENT OF GROUPED FEATURE

SITE BOUNDARY

TREES OUTSIDE OF SURVEY AREA

NOTES:

ROOT PROTECTION AREA
Root Protection Areas are calculated in accordance with BS5837: 2012. The precise morphology and disposition of roots may not be fully reflected by these areas, particularly where there are hard standings, however they provide a good indication of potential root constraint.

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH WATERMAN ARBORICULTURAL SURVEY REPORT AND IMPACT ASSESSMENT

GENERAL NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ENGINEER'S, ARCHITECT'S OR OTHER RELEVANT DRAWINGS AND SPECIFICATIONS.
2. ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE BY THE CONTRACTOR PRIOR TO PREPARING ANY WORKING DRAWINGS OR COMMENCING ON SITE.
3. THE CONTRACTOR MUST ENSURE AND WILL BE HELD RESPONSIBLE FOR THE OVERALL STABILITY OF THE BUILDING/STRUCTURE/EXCAVATION AT ALL STAGES OF THE WORK.
4. ALL WORK BY THE CONTRACTOR MUST BE CARRIED OUT IN SUCH A WAY THAT ALL REQUIREMENTS UNDER THE HEALTH AND SAFETY AT WORK ACT ARE SATISFIED.
5. ALL WORK IS TO BE CARRIED OUT IN COMPLIANCE WITH THE REQUIREMENTS OF THE RELEVANT STATUTORY AUTHORITIES AND REGULATIONS.

Rev	Date	Description	By
P02	25.05.22	UPDATED SITE BOUNDARY	MC
P01	18.01.22	PLANNING ISSUE	DC

Amendments

Project
STAG BREWERY

Title
BASELINE TREE SURVEY

Client
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Drawing Status
PLANNING

Designed by	RH	Checked by	RH
Drawn by	DC	Date	JANUARY 2022
Scales @ A1 work to figured dimensions only	1:500		

Project No
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Work Order No
113

Publisher	Zone	Category	Number	Revision
WIE	ZZ	XX	7702	P02

XREF_917061_2D

APPENDICES

A. Cascade Chart for Tree Quality Assessment (extract from BS5837:2012)

TREES FOR REMOVAL				
Category and Definition	**Criteria**			**Identification on Plan**
Category U Those in such a condition that that they cannot realistically be retained as living trees in the context 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 trees (i.e. 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; and • Trees infected with pathogens of significance to the 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.			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and Definition	**Criteria - Subcategories**			**Identification on Plan**
	1 Mainly Arboricultural Values	2 Mainly Landscape Values	3 Mainly Cultural Values, including Conservation	
Category A **Trees of high quality** with an estimated remaining life expectancy minimum of at least 40 years.	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of 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 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 150mm.	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

B. Tree Survey Table

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T2	Sycamore *(Acer pseudoplatanus)*	7m	2 stems @ 230mm 190mm 220mm	NE2m SE5m SW5m NW5m	2m	2m SW	SM	Good	Fair	40+	Boundary tree; of some boundary screening value; multi-stemmed from base; unbalanced crown biased to the S due to previous pruning; hard surfacing within RPA.	C (1)	5.2m	86.1m²
T3	London plane *(Platanus X acerifolia)*	14m	830mm	N8m E8m S10m W10m	1.5m	4m NW	M	Good	Good	40+	Large buttress roots; hard surfacing within RPA; twin-stemmed from 3m; broad dominant crown with no significant defects.	A (1)	10.0m	311.7m²
T4	London plane *(Platanus X acerifolia)*	10m	510mm	NE3m SE8m SW9m NW7m	2.5m	2m SW	SM	Good	Fair	40+	Boundary tree; large buttress roots; hard surfacing within RPA; unbalanced crown biased to the S due to previous pruning; bark wounds in crown.	B (1)	6.1m	117.7m²
T5	London plane *(Platanus X acerifolia)*	12m	560mm	N7m E8m S7m W9m	2m	2m S	SM	Good	Good	40+	Large buttress roots; hard surfacing within RPA; part of group.	B (1)	6.7m	141.9m²
T6	Fastigiate hornbeam *(Carpinus betulus 'Fastigiata')*	10m	430mm	N5m E4m S4m W5m	3.5m	2m NE	EM	Good	Good	40+	Part of group; hard surfacing within RPA; minor deadwood.	B (1)	5.2m	83.6m²
T7	London plane *(Platanus X acerifolia)*	12m	540mm	N7m E7m S7m W10m	2.5m	4m E	SM	Good	Good	40+	Part of group; trunk leans slightly to E; hard surfacing within RPA.	B (1)	6.5m	131.9m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T8	London plane *(Platanus X acerifolia)*	8m	420mm	N8m E8m S7m W2m	2m	2.5m S	SM	Good	Fair	40+	Part of group; crown shape distorted due to group pressure; hard surfacing within RPA; large buttress roots, with wounding.	B (2)	5.0m	79.8m²
T9	London plane *(Platanus X acerifolia)*	12m	440mm	N9m E4m S7m W3m	2.5m	4m W	SM	Good	Fair	40+	Part of group; hard surfacing within RPA; crown shape distorted due to group pressure; multiple pruning wounds on trunk not yet occluded.	B (2)	5.3m	87.6m²
T10	London plane *(Platanus X acerifolia)*	14m	470mm	N9m E4m S7m W4m	3m	4m E	SM	Good	Fair	40+	Part of group; crown shape distorted due to group pressure; hard surfacing within RPA; trunk leans slightly to W; multiple pruning wounds on trunk now occluded.	B (2)	5.6m	99.9m²
T11	London plane *(Platanus X acerifolia)*	14m	440mm	N8mE4m S7mW7 m	2m	4m S	SM	Good	Fair	40+	Part of group; crown shape distorted due to group pressure; hard surfacing within RPA.	B(1)	5.3m	87.6m²
T12	Sycamore *(Acer pseudoplat anus)*	6m	260mm	N5m E2.5m S4m W3m	2m	1m NE	SM	Fair	Fair	10+	Large buttress roots, with wounding; small suppressed tree; of low value; of limited potential.	C (1)	3.1m	30.6m²
T14	London plane *(Platanus X acerifolia)*	14m	450mm	N9m E8m S8m W4m	2m	3m	SM	Good	Fair	40+	Part of group; broad dominant crown of trees in group; crown has been previously topped at 3m; multi-stemmed from 3m.	B (2)	5.4m	91.6m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T15	London plane *(Platanus X acerifolia)*	13m	320mm	N7m E3m S6m W3m	2.5m	2.5m SE	EM	Good	Fair	40+	Part of group; crown shape distorted due to group pressure; temporary building below crown; branches in contact with adjacent structure.	B (2)	3.8m	46.3m²
T16	Sycamore *(Acer pseudoplatanus)*	8m	220mm 260mm	N4m E3m S5.5m W3.5m	2m	2m W	SM	Fair	Fair	40+	Part of group; twin-stemmed from 0.5m; crown shape distorted due to group pressure.	C (2)	4.1m	52.5m²
T17	Sycamore *(Acer pseudoplatanus)*	8m	310mm	N4m E4.5m S4.5m W4m	2m	2m S	SM	Fair	Poor	10+	Branches in contact with adjacent structure; bark wound with exposed heartwood; of low value.	C (1)	3.7m	43.5m²
T19	Sycamore *(Acer pseudoplatanus)*	7m	280mm	NE3.5m SE4.5m SW4m NW5m	2.5m	2.5m S	SM	Good		40+	Boundary tree; of low level screening value only.	C (1)	3.4m	35.5m²
T20	Wild cherry *(Prunus avium)*	10m	320mm	NE6m SE4m SW5m NW6m	1.5m	3m W	EM	Good	Good	20+	Boundary tree; low hanging branches.	C (1)	3.8m	46.3m²
T22	Whitebeam *(Sorbus aria)*	6m	130mm	N3m E4m S3m W2m	1m	2.5m SE	SM		Poor	<10	Small, recently planted tree.	U	1.6m	7.6m²
T24	Wild cherry *(Prunus avium)*	10m	310mm	N6mE5m S5.5mW 6m	1m	2m	EM	Good	Fair	20+	Surface roots with damage on upper sides; multi-stemmed from 2.5m.	C(1)	3.7m	43.5m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T25	London plane *(Platanus X acerifolia)*	14m	630mm	N6.5m E9m S10m W7.5m	1m	3m S	EM	Good	Good	40+	Part of group; building below crown; branches in contact with adjacent structure; lower branches pruned clear of building.	B (1)	7.6m	179.6m²
T26	London plane *(Platanus X acerifolia)*	13m	480mm	N6.5m E8m S5m W8m	1.5m	3m S	EM	Good	Fair	40+	Part of group; hard surfacing within RPA; crown has been previously topped at 5m above ground level.	B (1)	5.8m	104.2m²
T27	London plane *(Platanus X acerifolia)*	14m	510mm	N5m E8m S5m W6.5m	3m	5m S	EM	Good	Fair	40+	Part of group; large buttress roots; trunk leans slightly to E; crown has been previously topped at 5m above ground level; multiple pruning wounds on trunk now occluded.	B (1)	6.1m	117.7m²
T28	Ash *(Fraxinus excelsior)*	20m	350mm	N7m E1m S6m W7m	5m	4m N	SM	Fair	Fair	<10	Dieback at branch ends; one-sided crown as suppressed by adjacent tree; suspected early ash dieback disease.	U	4.2m	55.4m²
T29	London plane *(Platanus X acerifolia)*	20m	740mm	N9.5m E11m S9.5m W10.5m	1.5m	4m SW	M	Good	Good	40+	Grows in low planter; hard surfacing within RPA; crown shape distorted due to group pressure; large buttress roots; broad dominant crown.	A (1)	8.9m	247.7m²
T30	Whitebeam *(Sorbus aria)*	6m	220mm	N1m E2m S4m W2m	2m	4m S	SM	Fair	Fair	10+	One-sided crown as suppressed by adjacent tree; of low value.	C (1)	2.6m	21.9m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T31	London plane *(Platanus X acerifolia)*	11m	440mm	N6.5m E6m S6m W5.5m	2.5m	3m N	SM	Good	Good	40+	Hard surfacing within RPA; building below crown; branches in contact with adjacent structure; of good form.	B (1)	5.3m	87.6m²
T32	Swedish whitebeam *(Sorbus intermedia)*	6m	290mm	N3.5m E3.5m S3.5m W2.5m	3m	2m N	SM	Poor	Fair	<10	Suppressed as overtopped by adjacent tree; of low value.	U	3.5m	38.0m²
T33	London plane *(Platanus X acerifolia)*	9m	210mm	N4mE5m S3mW3 m	2m	3m NE	Y	Fair	Fair	40+	Hard surfacing within RPA; trunk leans heavily to E.	C(1)	2.5m	20.0m²
T34	London plane *(Platanus X acerifolia)*	10m	280mm	N5m E5m S4m W4m	2m	3m N	Y	Good	Good	40+	Hard surfacing within RPA; of good form.	B (1)	3.4m	35.5m²
T35	Ash *(Fraxinus excelsior)*	8m	185mm	N1m E2m S2m W2m	5m	3m S	Y	Poor	Poor	<10	Hard surfacing within RPA; large buttress roots, with wounding; sparse leaf coverage; suppressed; of low value.	U	2.2m	15.5m²
T37	Sycamore *(Acer pseudoplatanus)*	15m	500mm est	N7m E7m S7m W7m	3m	4m S	EM	Good	Fair	40+	Boundary tree; twin-stemmed from 2m; tight compression forks; dense vegetation limits survey; some dimensions estimated.	C (1)	6.0m	113.1m²
T38	Apple *(Malus sp.)*	6m					SM	Fair	Fair	10+	Suppressed as overtopped by adjacent tree; of low value; dense vegetation limits survey.	C (1)		

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T39	Elder *(Sambucus nigra)*	8m	200mm est	N3m E2m S2m W4m	3m	2.5m	EM	Fair	Fair	10+	Dense vegetation limits survey; all dimensions estimated; of low value.	C (1)	2.4m	18.1m²
T40	Holly *(Ilex aquifolium)*	7m	210mm est	N2m E3m S3m W2.5m	2m	2.5m	SM	Good	Fair	40+	Dense vegetation limits survey; all dimensions estimated; one-sided crown as suppressed by adjacent tree.	C (1)	2.5m	20.0m²
T41	London plane *(Platanus X acerifolia)*	12m	4 stems @ 200mm est	N5m E6m S7m W6m	2m	1m	M	Good	Poor	10+	Multi-stemmed coppice.	C (1)	4.8m	72.4m²
G42	Ash *(Fraxinus excelsior)* and Golden rain tree *(Koelreuteria paniculata)*	18m	Avg 400mm				EM	Good	Fair	20+	Drawn-up, mutually suppressed trees; ash showing signs of ash dieback disease; dense vegetation limits survey.	C (2)	4.8m	72.4m²
T43	Golden rain tree *(Koelreuteria paniculata)*	16m	760mm	N4m E4m S3m W1m	7m	7m NE	M	Fair	Poor	20+	Crown has been previously topped; of some boundary screening value.	C (1)	9.1m	261.3m²
T44	Golden rain tree *(Koelreuteria paniculata)*	16m	400mm est600mm est	N1mE5m S4mW5m	10m	10m N	M	Fair	Fair	40+	Crown has been previously topped; of some boundary screening value; some dimensions estimated; twin-stemmed from 1m; tight compression fork with included bark.	C(1)	8.7m	235.2m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T45	Golden rain tree *(Koelreuteria paniculata)*	16m	200mm est 450mm est	N2m E5m S4m W4m	6m	6m E	M	Fair	Fair	20+	Crown has been previously topped; some dimensions estimated; dense vegetation limits survey; twin stemmed from base; of some boundary screening value.	C (1)	5.9m	109.7m²
T46	Holly *(Ilex aquifolium)*	11m	300mm est	N2m E3m S3m W2m	2.5m	4m	EM	Good	Good	20+	Some dimensions estimated; of some boundary screening value.	C (1)	3.6m	40.7m²
T47	Holly *(Ilex aquifolium)*	5m	2 stems @ 190mm	N3m E4m S4m W3m	2.5m	4m	SM	Fair	Fair	10+	Small suppressed tree; twin stemmed from base.	C (1)	3.2m	32.7m²
T48	London plane *(Platanus X acerifolia)*	16m	620mm	N7m E7m S3.5m W7m	3m	6m E	EM	Good	Fair	40+	Of high amenity value; part of linear boundary group; bark wound on trunk; hard surfacing within RPA; unbalanced crown biased to the N; building below crown; branches in contact with adjacent structure.	A (2)	7.4m	173.9m²
T49	London plane *(Platanus X acerifolia)*	16m	580mm	N6m E7m S5.5m W8.5m	4m	3m E	EM	Good	Fair	40+	Part of linear boundary group; of high amenity value; crown has been previously topped at 3m; hard surfacing within RPA; large buttress roots.	A (2)	7.0m	152.2m²
T50	London plane *(Platanus X acerifolia)*	16m	390mm	N4m E5m S4.5m W8m	3m	5m SW	EM	Good	Good	40+	Part of linear boundary group; crown shape distorted due to group pressure; hard surfacing within RPA; bark wound on trunk; of high amenity value.	A (2)	4.7m	68.8m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T51	London plane *(Platanus X acerifolia)*	17m	640mm	N9m E8m S4.5m W6m	5m	4m NE	EM	Good	Fair	40+	Part of linear boundary group; of high amenity value; hard surfacing within RPA; western side of crown previously reduced; large buttress roots.	A (2)	7.7m	185.3m²
T52	London plane *(Platanus X acerifolia)*	16m	600mm	N5.5m E8m S3.5m W4m	5m	3m E	EM	Good	Fair	40+	Part of linear boundary group; of high amenity value; hard surfacing within RPA; western side of canopy previously reduced; crown shape distorted due to group pressure.	A (2)	7.2m	162.9m²
T53	London plane *(Platanus X acerifolia)*	16m	480mm	N2.5mE8 mS2.5m W4m	5m	3m S	EM	Good	Fair	40+	Part of linear boundary group; of high amenity value; western side of canopy previously reduced; unbalanced crown biased to the E; crown shape distorted due to group pressure; hard surfacing within RPA.	A(2)	5.8m	104.2m²
T54	London plane *(Platanus X acerifolia)*	18m	590mm	N3m E8m S6.5m W6.5m	7m	4m E	EM	Good	Fair	40+	Part of linear boundary group; lower branches on western side of crown previously reduced; hard surfacing within RPA; of high amenity value; building below crown; branches in contact with adjacent structure; crown shape distorted due to group pressure.	A (2)	7.1m	157.5m²
T55	London plane *(Platanus X acerifolia)*	18m	630mm	N7m E7m S5.5m W8m	6m	6m E	EM	Good	Good	40+	Part of linear boundary group; of high amenity value; building below crown; branches in contact with adjacent structure; twin-stemmed from 4m; hard surfacing within RPA.	A (2)	7.6m	179.6m²
T56	London plane *(Platanus X acerifolia)*	17m	510mm	N3.5m E8m S8m W7.5m	3.5m	2.5m N	EM	Good	Fair	40+	Part of linear boundary group; three-stemmed from 2.5m; hard surfacing within RPA; underground services within 1m of base; crown shape	A (2)	6.1m	117.7m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
											distorted due to group pressure; temporary building below crown.			
T57	London plane *(Platanus X acerifolia)*	15m	650mm	N7.5m E8m S8m W7.5m	3m	4m NE	EM	Good	Good	40+	Part of linear boundary group; of high amenity value; temporary building below crown; large buttress roots; hard surfacing within RPA.	A (2)	7.8m	191.1m²
G58	Sycamore (*Acer pseudoplatanus)* *Ash (Fraxinus excelsior)* *Goat Willow (Salix caprea)*	Max 15m	Various	N/A			SM	Good	Good	40+	Group of trees growing on riverbank; some deadwood and stubs; category grading based on overall group merit, but group shown as smaller groups and individual trees on Constraint's plan in order to identify trees of lower quality within group. Individual RPAs also plotted	B2	Various	
T59	English oak *(Quercus robur)*	9m	210mm	NE3m SE3m SW3m NW2m	3m	2.5m S	SM	Good	Good	40+	Crown shape distorted due to proximity of adjacent structure.	B (1)	2.5m	20.0m²
T60	Norway maple *(Acer platanoides)*	7m	120mm	NE3m SE3m SW3m NW2m	3m	2m S	Y	Fair	Fair	20+	Crown shape distorted due to proximity of adjacent structure.	C (1)	1.4m	6.5m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T61	Himalayan birch *(Betula utilis)*	12m	240mm	N4m E5m S4.5m W3m	1.8m	2m E	SM	Fair	Fair	10+	Roadside tree growing in raised planter within pavement; multiple pruning wounds on trunk not yet occluded.	C (1)	2.9m	26.1m²
T62	Himalayan birch *(Betula utilis)*	9m	230mm @1.25m	N3m E4m S4m W3m	0.5m	1.4m	SM	Fair	Fair	10+	Grows in raised planter in pavement; low hanging branches.	C (1)	2.8m	23.9m²
T64	London plane *(Platanus X acerifolia)*	12m	400mm	N7.5mE6 mS6.5m W6m	1.5m	2.5m W	SM	Good	Good	40+	Of good form.	A(1)	4.8m	72.4m²
T67	Red Horse chestnut *(Aesculus X carnea 'Briottii')*	7m	550mm	N4m E4.5m S4m W3m	3m	3.5m N	EM	Fair	Fair	20+	Part of linear feature along busy road; old pruning wounds forming pocket cavities in trunk; some bark necrosis and suspected stem decay; epicormic growth on trunk.	C (12)	6.6m	136.8m²
T68	Red Horse chestnut *(Aesculus X carnea 'Briottii')*	7m	480mm	N3.5m E4.5m S4m W4.3m	3m	4m	EM	Poor	Poor	<10	Fungal fruiting bodies at base; ganoderma adspersum; basal decay; old pruning wounds forming pocket cavities throughout; twin-stemmed from 2.5m.	U	5.8m	104.2m²
T70	Red Horse chestnut *(Aesculus X carnea 'Briottii')*	8.5 m	490mm	N4m E3m S3.5m W3.5m	3m	4m	EM	Fair	Poor	10+	Part of linear feature along busy road; bark wound on trunk; decaying heartwood in trunk; old pruning wounds forming pocket cavities in trunk; twin-stemmed from 2.5m.	C (12)	5.9m	108.6m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T71	Red Horse chestnut *(Aesculus X carnea 'Briottii')*	7m	490mm	N4m E5.5m S4m W4m	1.5m	2m W	EM	Fair	Poor	10+	Part of linear feature along busy road; old pruning wounds forming pocket cavities in trunk; fungal fruiting bodies on trunk; inonotus dryadeus.	C (12)	5.9m	108.6m²
T72	Common Hawthorn *(Crataegus monogyna)*	5m	350mm @1m	3m	1.5m	2m	M	Fair	Poor	<10	Twin-stemmed from 1.5m; crown has been previously heavily reduced; significant dieback at branch ends; of limited potential.	U	4.2m	55.4m²
T73	Common Hawthorn *(Crataegus monogyna)*	5m	350mm	N4m E3m S4m W3m	1.5m	1.5m	M	Fair	Fair	10+	Twin-stemmed from 1.5m; significant dieback at branch ends; trunk leans slightly to E.	C (1)	4.2m	55.4m²
T74	Red Horse chestnut *(Aesculus X carnea 'Briottii')*	8m	580mm	N4.5m E4.5m S5m W5m	2m	4m	EM	Good	Good	40+	Part of linear feature along busy road; of high amenity value.	A (2)	7.0m	152.2m²
T75	Red Horse chestnut *(Aesculus X carnea 'Briottii')*	10m	460mm	N5mE4.5 mS5mW 4m	2m	4.5m	EM	Good	Good	40+	Part of linear feature along busy road; of high amenity value; old pruning wounds forming pocket cavities in trunk.	A(2)	5.5m	95.7m²
T76	Common Hawthorn *(Crataegus monogyna)*	7m	420mm @1m	N4.5m E3m S5m W3m	1m	1.5m	EM	Fair	Poor	<10	Crown shape distorted due to group pressure; twin-stemmed from 1.5m; main union has begun to fail.	U	5.0m	79.8m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T77	Red Horse chestnut *(Aesculus X carnea 'Briottii')*	11m	630mm	N5.5m E4.5m S6m W4.5m	2m	2.5m NW	EM	Good	Good	40+	Part of linear feature along busy road; of high amenity value.	A (2)	7.6m	179.6m²
T78	Red Horse chestnut *(Aesculus X carnea 'Briottii')*		630mm	N4m E5.5m S5m W4.5m	2m	4m	EM	Good	Good	40+	Part of linear feature along busy road; of high amenity value; twin-stemmed from 3m; old pruning wounds forming pocket cavities in trunk.	A (2)	7.6m	179.6m²
T79	Cockspur thorn *(Crataegus crus-galli)*	4.5 m	310mm	N4.5m E1m S4.5m W3m	1.5m	2m S	EM	Fair	Fair	10+	One-sided crown as suppressed by adjacent tree; multiple pruning wounds on trunk not yet occluded.	C (1)	3.7m	43.5m²
T81	Common Hawthorn *(Crataegus monogyna)*	3.5 m	180mm	N3m E3m S3m W2m	0.5m	0.5m	SM	Good	Fair	40+	Suppressed as overtopped by adjacent tree.	C (1)	2.2m	14.7m²
T82	Red Horse chestnut *(Aesculus X carnea 'Briottii')*	9m	370mm	N5.5m E4m S4.5m W5m	N1m S2.5m	2.5m NE	EM	Good	Good	40+	Part of linear feature along busy road; of high amenity value; of good form.	A (2)	4.4m	61.9m²
T83	Box elder *(Acer negundo)*	8m	580mm	N7.5m E4m S8m W9.5m	2.5m	2.5m S	M	Fair	Poor	10+	Part of group; crown has been previously topped at 5m; wounds on trunk with decay; polyporus squamosus (Dryad's Saddle) emerging from wound.	C (2)	7.0m	152.2m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T84	London plane *(Platanus X acerifolia)*	12m	550mm	N6mE6m S6mW5 m	3m	2m N	EM	Good	Fair	40+	Part of group; of moderate amenity value; crown has been previously topped at 3m; roots growing between kerb stones.	B(2)	6.6m	136.8m²
T85	Box elder *(Acer negundo)*	9m	540mm	N7.5m E6m S6.5m W5m	4m	2.5m SW	M	Fair	Fair	20+	Crown has been previously heavily reduced; part of group; of moderate amenity value.	B (2)	6.5m	131.9m²
T86	London plane *(Platanus X acerifolia)*	13m	550mm	N6.5m E6m S6m W7m	2.5m	3m SE	EM	Good	Fair	40+	Large buttress roots; roots causing pavement deflection; branches in contact with adjacent boundary wall; crown shape distorted due to group pressure.	B (2)	6.6m	136.8m²
T88	London plane *(Platanus X acerifolia)*	14m	370mm	N5m E6m S5m W4m	2m	3m N	Y	Good	Good	40+	Part of group.	B (2)	4.4m	61.9m²
T89	Golden rain tree *(Koelreuteria paniculata)*	10m	320mm	NE8.5m E4m S5m W7m NW1m	2m	3m W	SM	Good	Fair	20+	Part of group; crown shape distorted due to group pressure; minor deadwood.	B (2)	3.8m	46.3m²
T90	London plane *(Platanus X acerifolia)*	15m	510mm	N8m E5.5m S8m W7.5m	2m	3m S	SM	Good	Good	40+	Trunk leans slightly to W; branches in contact with adjacent structure; crown has been previously topped at 4.5m; part of group; surface roots with damage on upper sides.	B (2)	6.1m	117.7m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T93	Golden rain tree *(Koelreuteria paniculata)*	12m	420mm	N2m E3m S5.5m W5.5m	2.5m	3m S	EM	Good	Fair	20+	Unbalanced crown biased to the W; crown shape distorted due to group pressure; part of group; minor deadwood.	B (2)	5.0m	79.8m²
T94	London plane *(Platanus X acerifolia)*	13m	390mm	N2m E6m S7m W8.5m	2m	3m W	SM	Good	Fair	40+	Part of group; multiple pruning wounds on trunk not yet occluded; crown shape distorted due to group pressure; strimmer damage.	B (2)	4.7m	68.8m²
T95	Manna ash *(Fraxinus ornus)*	11m	300mm	N4m E0m S5m W6.5m	2.5m	3m W	Y	Good	Fair	20+	Part of group; crown shape distorted due to group pressure; bark wound on trunk; unbalanced crown biased to the W.	B (2)	3.6m	40.7m²
T96	Manna ash *(Fraxinus ornus)*	10m	300mm	N2mE3m S2.5mW 3m	3m	3.5m N	SM	Fair	Fair	20+	Part of group; crown has been previously heavily reduced.	C(2)	3.6m	40.7m²
T97	Golden rain tree *(Koelreuteria paniculata)*	10m	450mm	N4.5m E6m S7m W7m	3.5m	2.5m S	M	Good	Good	40+	Part of group; bark wound on trunk; temporary building below crown.	B (2)	5.4m	91.6m²
T98	London plane *(Platanus X acerifolia)*	11m	400mm	N6.5m E8m S6.5m W5m	2m	2m SW	SM	Good	Good	40+	Part of group of three trees; crown shape distorted due to group pressure; branches in contact with adjacent structure.	B (2)	4.8m	72.4m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T99	Golden rain tree *(Koelreuteria paniculata)*	10m	490mm	N7m E6m S8m W7m	2.5m	2m W	EM	Good	Fair	40+	Part of group of three trees; grows around adjacent fence; crown shape distorted due to group pressure.	B (2)	5.9m	108.6m²
T100	Manna ash *(Fraxinus ornus)*	10m	370mm	N5m E6m S6m W6m	1.5m	2m SW	EM	Good	Fair	40+	Part of group of three trees; crown shape distorted due to group pressure; trunk leans slightly to S.	B (2)	4.4m	61.9m²
T106	Common lime *(Tilia x europaea)*	7m	260mm	N4m E3.5m S3.5m W4m	2.5m	2.5m W	Y	Good	Good	40+	Street tree; of good form.	A (12)	3.1m	30.6m²
T107	Small-leafed lime *(Tilia cordata)*	6m	370mm	N4m E4m S4.5m W5m	3m	3m	SM	Good	Good	40+	Street tree; multi-stemmed from 2m.	A (12)	4.4m	61.9m²
T120	Norway maple *(Acer platanoides)*	12m	420mm	N4.5m E4m S4m W4m	3.5m	2m S	SM	Fair	Fair	20+	Minor deadwood; multiple pruning wounds on trunk not yet occluded.	C (2)	5.0m	79.8m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T121	Wild cherry *(Prunus avium)*	4m	700mm	1m			OM		Poor	Dead	Dead stump.	U	8.4m	221.7m²
T133	Red Horse chestnut *(Aesculus X carnea 'Briottii')*	15m	460mm	6m	2m	1.5m N	SM	Fair	Fair	20+	Multiple pruning wounds on trunk not yet occluded; surface roots with damage on upper sides; crown shape distorted due to group pressure; twisted trunk.	B (2)	5.5m	95.7m²
T134	Common alder *(Alnus glutinosa)*	15m	535mm	N5mE5m S5mW3 m	2m	3m W	EM	Fair	Fair	20+	Trunk leans slightly to SE; multiple pruning wounds on trunk not yet occluded; crown shape distorted due to group pressure.	B(2)	6.4m	129.5m²
T136	Red Horse chestnut *(Aesculus X carnea 'Briottii')*	15m	300mm	4m	2.5m	3m E				20+	Swollen base of trunk; multiple pruning wounds on trunk not yet occluded.	B (2)	3.6m	40.7m²
T137	Common alder *(Alnus glutinosa)*	15m	330mm	N4m E4m S4m W3.5m	2.5m	3m E	SM	Fair	Fair	20+	Trunk leans slightly to S.	B (2)	4.0m	49.3m²
T139	Unkno*wn*	5m	110mm	N0.5m E1.5m S1.5m W1m	2.5m	2m E	Y		Poor	Dead	Dead tree.	U	1.3m	5.5m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T140	Common Horse Chestnut *(Aesculus hippocastanum)*	8m	460mm @1m	N5m E5m S6m W6m	2m	2.5m	SM	Good	Fair	40+	Three-stemmed from 2m; tight compression forks with included bark; multiple pruning wounds on trunk not yet occluded.	B (12)	5.5m	95.7m²
T142	Elder *(Sambucus nigra)*	5m	6 stems @ 90mm est	N2m E4m S4m W4m	2m	1.5m	M	Fair	Poor	<10	Stems growing around gas cabinet resulting in extensive cankers.	U	2.6m	22.0m²
T143	Chanticleer pear *(Pyrus calleryana Chanticleer)*	6m	280mm	2m	4m	4m	EM	Poor	Poor	<10	Fungal fruiting bodies at base; ganoderma adspersum; crown has been previously heavily reduced; unlikely to last more than ten years due to poor condition.	U	3.4m	35.5m²
T144	Norway maple *(Acer platanoides)*	11m	380mm	N4m E3m S4m W4m	3m	2.5m N	EM	Fair	Fair	10+	Twin-stemmed from 2m; tight compression forks with included bark; roots causing significant pavement damage; eastern side of crown reduced to clear building.	C (1)	4.6m	65.3m²
T145	Ash *(Fraxinus excelsior)*	10m	250mm	N3m E4m S4m W4m	2m	2m E	SM	Good	Poor	20+	Street tree; crown biased to south due to presence of building to north.	B (1)	3.0m	28.3m²
T149	Raywood ash *(Fraxinus angustifolia 'Raywood')*	12m	250mm	4m	4m	2.5m S	EM	Fair	Fair	20+	Street tree; multiple pruning wounds on trunk not yet occluded.	B(1)	3.0m	28.3m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T152	Norway maple *(Acer platanoides)*	4m	100mm	2m	0.5m	1m	Y	Good	Good	20+	Young tree (stem diameter less than 150mm).	C (1)	1.2m	4.5m²
T154	Common Horse Chestnut *(Aesculus hippocastanum)*	11m	600mm @1m	N4m E4m S5m W5m	3m	4m E	EM	Fair	Fair	40+	Crown shape distorted due to group pressure; twin-stemmed from 1.5m; one-sided crown as suppressed by adjacent tree.	B (1)	7.2m	162.9m²
T155	London plane *(Platanus X acerifolia)*	20m	1100mm @1m	9m	4m	5m SE	M	Good	Good	40+	Three-stemmed from 1.5m.	A (1)	13.2m	547.4m²
T157	London plane *(Platanus X acerifolia)*	14m	500mm	N4m E3m S2m W3m	7m	2m N	EM	Fair	Fair	40+	Crown has been previously heavily reduced.	B (1)	6.0m	113.1m²
T158	Common Horse Chestnut *(Aesculus hippocastanum)*	12m	2 stems @ 360mm	3m	1.5m	2m N	SM	Good	Fair	20+	Suppressed as overtopped by adjacent tree; twin stemmed from base.	C (1)	6.1m	117.3m²
G162	2x False Acacia (*Robinia pseudoacacia*)	15m	Avg. 550mm	7.5m	4m	3m W	M	Fair	Fair	10+	Sparse leaf coverage; crossing branches; minor deadwood	C (1)	6.6m	136.8m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T163	Common Horse Chestnut *(Aesculus hippocastanum)*	15m	370mm	Avg. 5m	1.5m	2.0m W	E	Fair	Fair	20+	Within area of mown grass; exposed shallow surface roots with mower damage noted. Linear cracks to bark. Signs consistent with Bleeding Canker of Horse Chestnut (BCHC) (Pseudomonas syringae pv aesculi).	B (1)	4.4m	60.8m²
T165	Norway maple *(Acer platanoides)*	12m	450mm	5m	1.5m	3m S	SM	Fair	Fair	40+	Part of group of three trees in park; unbalanced crown biased to the E; multi-stemmed from approx. 3m.	B (1)	5.4m	91.6m²
T166	London plane *(Platanus X acerifolia)*	14m	500mm	N6m E6m S6m W4m	3m	4m E	SM	Good	Good	40+	Part of group of three trees in park; crown shape distorted due to group pressure.	B (1)	6.0m	113.1m²
T171	Apple *(Malus sp.)*	8m	250mm @1m	N4m E3m S3m W3m	2m	1.5m	EM	Good	Good	20+	Grows in grass area above low retaining wall; multi-stemmed from 1.5m above ground level.	C (2)	3.0m	28.3m²
T172	English oak *(Quercus robur)*	6m	150mm	2.5m	1m	1.5m E	Y	Good	Good	40+	Small tree within park setting.	C (1)	1.8m	10.2m²
T300	Sycamore *(Acer pseudoplatanus)*	15m	300mm est	N2mE4m S4.5mW 4m	4m	4m S	SM	Fair	Fair	10+	Off-site tree; crown shape distorted due to proximity of adjacent structure; all dimensions estimated; unable to view lower trunk due to boundary fence.	C(1)	3.6m	40.7m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T302	Golden rain tree *(Koelreuteria paniculata)*	16m	300mm est	N6m E4m S2m W1m	4m	4m N	SM	Fair	Fair	<10	Grows against wall with limited space for future development; etiolated specimen.	U	3.6m	40.7m²
T303	Holly *(Ilex aquifolium)*	6m	350mm est	N3m E3m S2m W3m	0m	1m	EM	Fair	Fair	20+	Small suppressed tree; crown has been previously topped.	C (1)	4.2m	55.4m²
T304	Golden rain tree *(Koelreuteria paniculata)*	16m	500mm est 400mm est	N3m E5m S3m W4m	6m	5m W	M	Fair	Fair	20+	Crown has been previously topped; dense vegetation limits survey; some dimensions estimated; twin stemmed from base; of some boundary screening value.	C (1)	7.7m	185.5m²
T305	Sweet chestnut *(Castanea sativa)*	3m	80mm	2m	1.5m	1m	Y	Fair	Fair	40+	Young tree (stem diameter less than 150mm).	C (1)	1.0m	2.9m²
T306	Sweet chestnut *(Castanea sativa)*	4m	110mm	2m	1.5m	2m	Y	Fair	Fair	40+	Young tree (stem diameter less than 150mm).	C (1)	1.3m	5.5m²
T307	Common alder *(Alnus glutinosa)*	4m	80mm	2m	1.5m	2m	Y	Poor	Poor	<10	Young tree (stem diameter less than 150mm); significant dieback at branch ends; bark wound on trunk; unlikely to last more than ten years due to poor condition.	U	1.0m	2.9m²
T308	Common alder *(Alnus glutinosa)*	4m	100mm	1m	2m	2m E	Y	Poor	Poor	<10	Young tree (stem diameter less than 150mm); extensive bark wounds on trunk; dieback at top of crown; unlikely to last more than ten years due to poor condition.	U	1.2m	4.5m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T309	Common alder *(Alnus glutinosa)*	6m	210mm	2m	2.5m	2m E	Y	Fair	Poor	10+	Bark wounds with exposed heartwood; minor deadwood.	C (12)	2.5m	20.0m²
T310	Common alder *(Alnus glutinosa)*	6m	150mm	2m	2.5m	2m E	Y	Fair	Poor	10+	Bark wound with exposed heartwood; minor deadwood.	C (12)	1.8m	10.2m²
T311	Common alder *(Alnus glutinosa)*	7m	320mm	3m	3.5m	23m	SM	Poor	Poor	<10	Bark wound with exposed heartwood; major deadwood; dieback at top of crown; unlikely to last more than ten years due to poor condition.	U	3.8m	46.3m²
T312-319	Common lime *(Tilia x europaea)*	#T312 8m#T313 8m#T314 7m#T315 11m#T316 12m#T317 10m#T318 11m#T3	#T312 490mm#T313 460mm#T314 460mm#T315 520mm#T316 510mm#T317 500mm#T318 560mm#T319 510mm	2m	4m	4m	EM	Good	Fair	40+	Row of street trees growing in small pavement planting pits; managed dense epicormic growth t base; all trees heavily reduced;#315 bark wound on trunk;#316 exudations on trunk;#317 longitudinal crack at base.	B(2)	5.9m5.5m5.5m6.2m6.1m6.0m6.7m6.1m	108.6m² 95.7m²9 5.7m²12 2.3m²11 7.7m²11 3.1m²14 1.9m²11 7.7m²

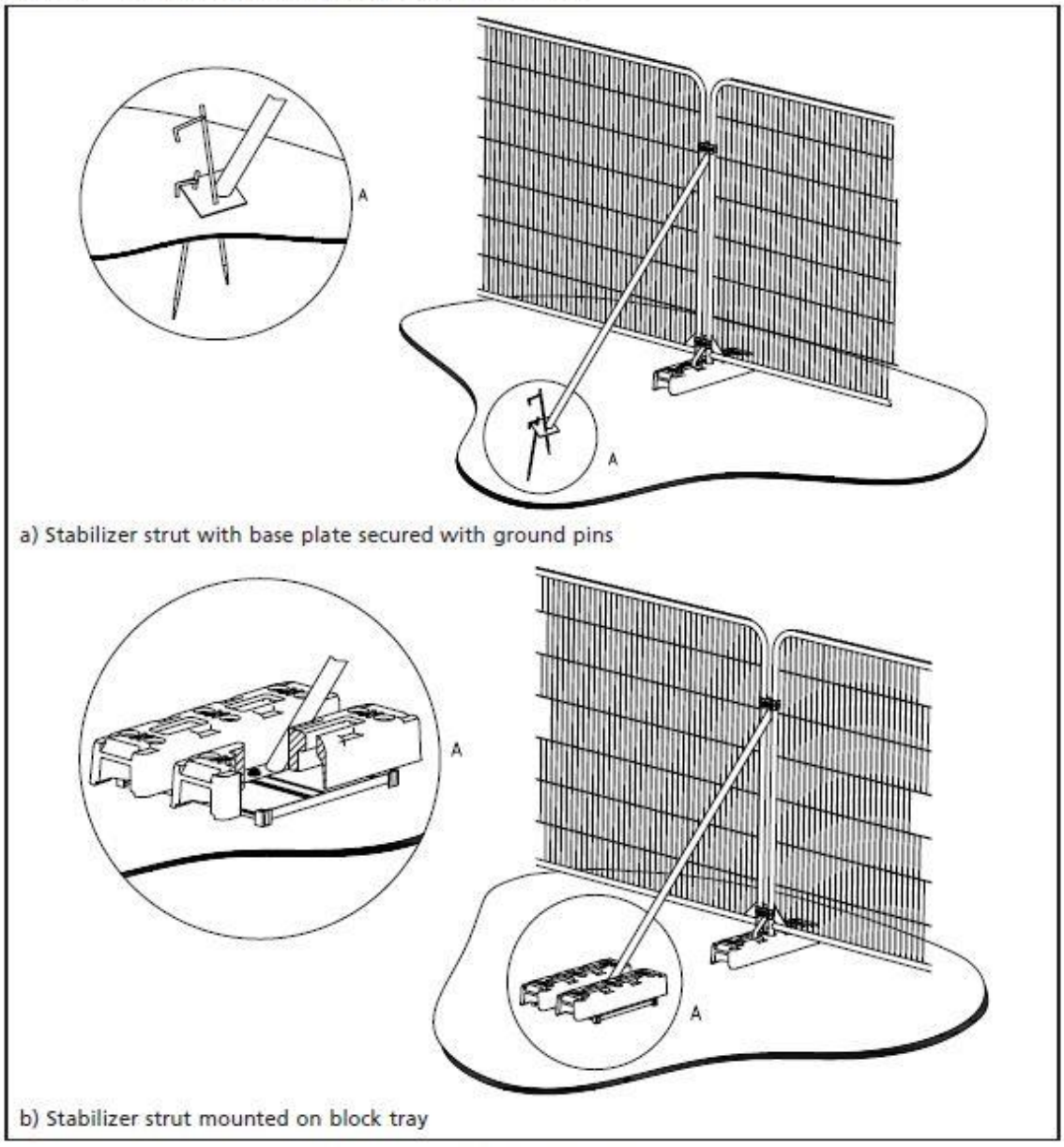
No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
		19 10m												
T320	London plane *(Platanus X acerifolia)*	16m	650mm	N7m E4m S7m W7m	3m	2m W	EM	Good	Good	40+	Part of group of three trees in park; large dominant tree in group; crown shape distorted due to group pressure.	B (1)	7.8m	191.1m²
T321	London plane *(Platanus X acerifolia)*	20m	1100mm	N4m E6m S7m W6m	4m	3m	M	Good	Good	40+	Three-stemmed from 3m; crown shape distorted due to group pressure.	A (1)	13.2m	547.4m²
T322	Norway maple *(Acer*	4m	90mm	1m	1.5m	1.5m W	Y	Good	Good	20+	Young tree (stem diameter less than 150mm).	C (1)	1.1m	3.7m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
	platanoides)													
T323	Pear *(Pyrus communis)*	3m	80mm	1m	1.5m	1m NE	Y	Good	Good	20+	Young tree (stem diameter less than 150mm).	C (1)	1.0m	2.9m²
T324-326	Pear *(Pyrus communis)*	#T324 6m #T325 6m #T326 5m	#T324 140mm #T325 140mm #T326 140mm	2m	2m	1.5m	Y	Fair	Fair	20+	#326 sparse leaf coverage; young trees (stem diameter less than 150mm).	C (1)	1.7m 1.7m 1.7m	8.9m² 8.9m² 8.9m²
T327	Apple *(Malus sp.)*	8m	250mm	N4m E4m S2m W2m	3.5m	2m W	EM	Fair	Fair	20+	Street tree; unbalanced crown biased to the N due to presence of building to south.	B (2)	3.0m	28.3m²
T328	Whitebeam *(Sorbus aria)*	7m	250mm	N4mE4m S2mW4m	4m	2m S	EM	Poor	Poor	Dead	Leaf buds 90% dead.	U	3.0m	28.3m²
T329	Raywood ash *(Fraxinus angustifolia 'Raywood')*	10m	320mm	N5m E3m S5m W4m	3m	2m S	EM	Fair	Fair	20+	Street tree; unbalanced crown biased to the N due to S; twin-stemmed from 4m.	B (1)	3.8m	46.3m²

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T330-331	English oak *(Quercus robur)*	12m	#T330 400mm #T331 400mm	6m	2.5m	3m	SM	Good	Good	40+	Two large street trees of generally good form.	B (1)	4.8m 4.8m	72.4m² 72.4m²
T332-338	Pear *(Pyrus communis)*	10m	250mm	2.5m	4m	2.5m	Y	Good	Good	40+	Some trees with sparse canopies.	C (2)	3.0m	28.3m²
T339	False acacia *(Robinia pseudoacacia)*	10m	6 stems @ 150mm	N5m E5m S5m W4m	2m	2m N	SM	Good	Fair	20+	Multi-stemmed coppice; low retaining wall approximately 1m to east.	C (1)	4.4m	61.1m²
T340	Common lime *(Tilia x europaea)*	10m	400mm est	4m	1.5m	2m E	EM	Fair	Fair	40+	Grows above low retaining wall; epicormic growth at base limits survey; some insignificant dieback.	B (1)	4.8m	72.4m²

C. Extract from BS5837:2012 – Examples of Above-Ground Stabilizing Systems

Figure 3 **Examples of above-ground stabilizing systems**



a) Stabilizer strut with base plate secured with ground pins

b) Stabilizer strut mounted on block tray

D. Example Specification for Tree Protection Barrier.

E. Tree Protection Signage (Example)

Our vision

"Engineering a better environment for people and the planet"

Our mission

"To solve complex problems for the benefit of clients, communities and the climate"

Our values

People orientated

Individually and collectively, people are our business.
We strive to create environments for everyone to flourish and thrive.

Flexible

Pragmatic by nature and dedicated to getting the job done to the highest possible standard.

Professional

Operating at pace with integrity to deliver technical and robust solutions.

Environmentally aware

We understand our responsibility to the environment, it shapes our decision making and informs our practice.

Innovative

Our forensic questioning provides the ability to deliver appropriate innovations at every stage on every project.

Relationship focused

We value individuality and the benefits of working collaboratively to achieve positive outcomes for all.