



PROJECT RADIAL

**AUTOMOTIVE DEMONSTRATION
& EXPERIENCE**

DRAFT

ARBORICULTURAL IMPLICATIONS ASSESSMENT

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A Pre-Development Tree Survey

1.0 Introduction

- 1.1 This Arboricultural Implications Assessment and Arboricultural Method Statement is aimed at identifying and addressing those matters concerning the successful retention of suitable trees within and adjacent to the proposed Project Radial – Bomb Stores 2B development at Bicester Heritage Centre.
- 1.2 The trees were re-inspected during December 2018 by Brian Higginson who holds the RFS Professional Diploma in Arboriculture and is a professional member of the Arboricultural Association. The report follows the guidelines given in BS5837 : 2012.
- 1.3 All trees have been inspected from ground level only. Should further more detailed inspection be deemed appropriate, this will be covered under 'Recommendations'. Trees are dynamic living organisms, whose health and condition can be subject to rapid change, depending on a number of external and internal factors. The conclusions and recommendations contained in this report relate to the trees at the time of inspection.

2.0 Impact of Proposed Development

- 2.1 The proposed development has been carefully designed to ensure a successful juxtaposition between the existing trees and the proposed development.
- 2.2 The construction of the proposed development will involve the removal of the following trees.

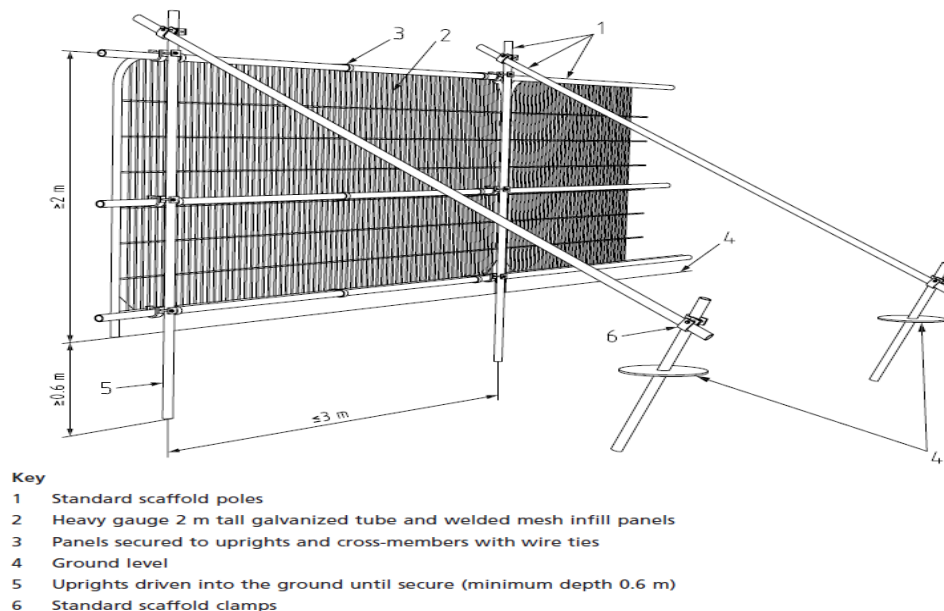
BS 5837 Cat	A	B	C	U
Trees to be removed	N/A	G418 (part of)	G419 (part of)	N/A

The vegetation to be removed is predominantly invasive scrub, of mixed broadleaved species. The scrub area is to be selectively thinned following good silvicultural practice, allowing the construction of the demonstration circuit.

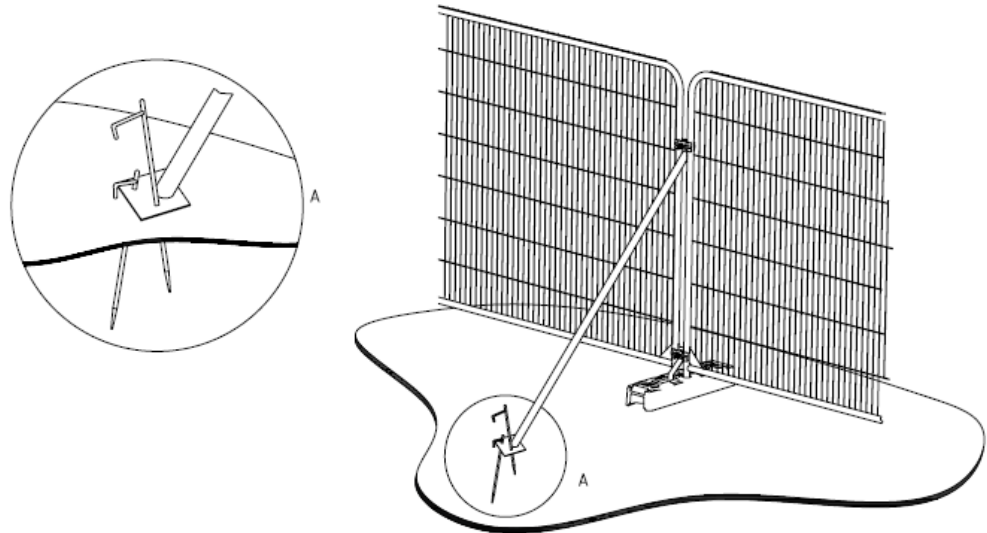
- 2.3 The proposed development will **NOT** fall within the root protection area of any retained tree.
- 2.4 The proposed development will **NOT** require any facilitation pruning to any retained trees.
- 2.5 Tree shading is **NOT** considered an issue, taking into account the orientation and location of the proposed building.

3.0 Tree Protection

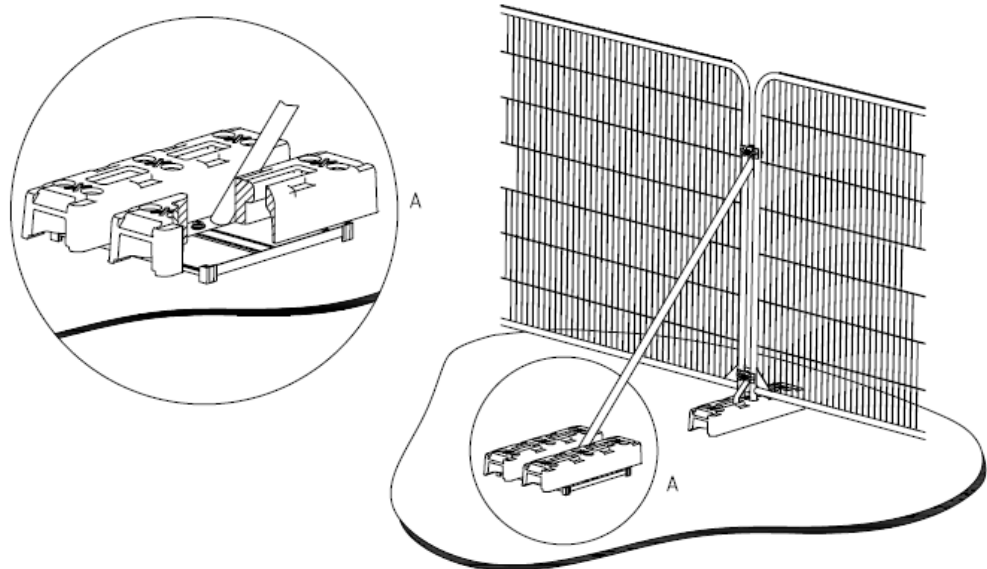
- 3.1 All trees that are to be retained on or in close proximity to the site will be protected by the use of stout fencing erected at specified distances from the base of the trees. This fencing will be constructed with weld mesh on a framework of scaffolding, or similarly sturdy material (Herras type fencing), driven into the ground to a suitable depth to ensure its stability all in line with BS5837:2012 figure 2 (shown below)



Alternatively, the herras fencing may be supported as shown below, and in line with BS5837 :2012 figure 3



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

- 3.2 All tree protection fencing will be erected prior to the commencement of the development so that trees are protected from the outset. This fencing will be regarded as inviolate. Once erected the fencing will remain in situ and will not be removed or altered without the prior consent of the Local Planning Authority Arboricultural Officer in consultation with the named arboriculturalist.
- 3.3 The protective fencing will be erected on the line shown on the Tree Protection Plan drawing.

4.0 On Site Storage of Spoil and Building Materials

- 4.1 Prior to and during construction works on site no spoil or construction materials will be stored within the crown-spread of any tree on, or adjacent to the site, even if the proposed development is to be within the crown-spread. This is to reduce to a minimum the compaction of tree roots. Any encroachment within this protected area will only be with the prior agreement of the Local Planning Authority Arboricultural Officer.

5.0 Location of Site Office

- 5.1 The location of the site office will not be within the crown spread of the trees on or adjacent to the site. Any re-siting of the office through the various stages of development will be agreed prior to the re-siting with the Local Planning Authority Arboricultural Officer.

6.0 Programme of Works

- 6.1 All tree surgery works and felling works approved by the Local Planning Authority Arboricultural Officer will be carried out prior to any other site works. Once completed, the proposed protective fencing will be erected along the lines indicated above.
- 6.2 This work will be carried out prior to commencement of any construction or demolition works on the site.
- 6.3 During the construction works on site the protective fencing will be maintained and every effort will be made to prevent unnecessary damage to the trees. The Arboricultural Officer will be notified immediately of any unforeseen damage. The necessary remedial tree surgery will be carried out at the earliest opportunity to the approval of the Arboricultural Officer. The site should be inspected on a regular basis by a competent and qualified arboriculturalist.

- 6.4 On completion of the development works on site it would be advisable to carry out a further tree survey to identify any remedial tree surgery necessary as a result of the development works, and suggest details for future management of trees,

7.0 Remedial Tree Surgery

- 7.1 Any proposed tree surgery works identified and agreed with the Local Planning Authority will be carried out in accordance with BS3998:2010 (Tree Work - Recommendations). A competent arboricultural contractor will carry out the work. Any alterations to the proposed schedule of works will be agreed with the Arboricultural Officer prior to the commencement of the works.
- 7.2 Accidental damage to trees during the construction phase of the development will be noted and reported as per paragraph 11.2 of this document.

8.0 Levels

- 8.1 No changes or alterations to levels have been identified on this site. It is recommended that existing site levels are retained in order to minimise the potential for adverse impact on the frontage trees.
- 8.2 Should levels need to be changed in areas adjacent to the trees or within the minimum distance recommended, then appropriate measures will be taken to minimise the detrimental effects to the tree(s) in question, subject to prior approval.
- 8.3 If excavations have to be so close to the tree(s) that roots greater than 25mm diameter are likely to be encountered, particular care will be taken to avoid damage. Excavation in these areas will be undertaken by hand, avoiding any damage to the bark. The roots will be surrounded with sharp sand prior to the replacement of any soil or other material in the vicinity.

9.0 Services

- 9.1 It is proposed that all service runs will be placed outside the crown spread of the trees on or adjacent to the site. Where it is not possible to achieve this, the section of service run, which passes within the tree protection area around a retained tree, will be hand dug in accordance with 'broken trenches' (NJUG 4). This will ensure that tree roots are not damaged during the installation of the service. All root pruning will be agreed before hand with the named arboriculturalist in consultation with the Local Planning Authority Arboricultural Officer. All root pruning will be in accordance with BS3998:2010. All routes for overhead services will aim to avoid the trees. Where this is unavoidable any tree work will be agreed prior to commencement with the Arboricultural Officer.
- 9.2 All service runs to be agreed with the Local Planning Authority prior to the commencement of works.

10.0 Construction Within The Tree Protection Area

- 10.1 The proposed buildings have been carefully sited to fall outside the RPA of any retained tree, with only poorer quality specimens being removed to facilitate this.
- 10.2 No specific mitigation measures are required, apart from the regular monitoring of the tree protection fence during the development process.

11.0 Reporting Procedure

- 11.1 For the period of the development a qualified arboriculturalist should be named as the contact so that arboricultural issues that arise during the period of the development can be dealt with effectively.

- 11.2 When an inspection occurs, planned or otherwise, a report will be written and provided to the client. If appropriate the report will be copied to the Local authority Arboricultural Officer.
- 11.3 The site and associated development will be monitored/inspected regularly by the named arboriculturalist to ensure that the arboricultural aspects of the planning permission are enforced and to deal with and advise upon any problems that may arise during the development process. Should any problems arise during the development the site manager will contact the named arboriculturalist. The Local Planning Authority will be notified of any arboricultural issues that arise and appropriate action taken with the prior permission of the client.

12.0 Tree Protection Plan

- 12.1 The Tree Protection Plan drawing indicates the trees marked for retention and identified with a continuous canopy outline.
- 12.2 The drawing also indicates the location for the erection of the tree protection barriers, based upon the calculations of Root Protection Areas (RPA) as part of the Tree Constraints Plan. This drawing shows the actual position of the tree protection barriers.

Drawings

Tree Constraints & Protection Plan

Appendices

Appendices A – Pre-Development Tree Survey

APPENDICES A

In conforming to the guidelines of BS5837 : 2012, the following details were recorded:

Tree No.	Cross-referenced to the tree survey plan
Species	Common names used
Height in metres	Approximately measured on site
Stem Diameter	Taken in millimetres at 1.5m from ground level where Applicable
Branch Spread	Taken at the four cardinal points to derive a more accurate representation of the tree canopy, N,E,S,W.
Crown Clearance	Height in metres of branches from the ground
Age Class	Y =Young, SM = Semi-Mature, EM = Early-Mature, M = Mature, OM =Over-Mature
Physiological Condition	G =Good, F =Fair, P =Poor, D =Dead
Structural Condition /Comments	e.g. Collapsing, the presence of any decay and physical defect, or any other useful comments/observations
Preliminary Management Recommendations	Work required before commencing on-site
Remaining Contribution In years;	less than 10, 10-20, 20-40, more than 40
Grading Category	U (remove), A (high quality), B (medium quality) or C (low quality)
	Sub-Categories
	1 = mainly arboricultural qualities
	2 = mainly landscape qualities
	3 = mainly cultural values
	Assessed by visual inspection, taking into account species, age, condition, location and suitability.

Tree / Group / Hedge Ref. No.	Latin Name (Common Name)	Height (m)	Crown Clearance (m) & compass direction	Crown Spread (m)				Stem Diameter @ 1.5m (mm) (Where up to 5 stems present)	No. of Stems (6+)	Stem Diameter average (@1.5 m (mm) Five Stems or more)	Age Class: Y (Young), SM (Semi-Mature), EM (Early-Mature), M (Mature), LM (Late-mature), V (Veteran)	Condition			Estimated Remaining Contribution: (≤10, 10+, 20+, 40+)	BS5837 Categorisation Grading	Comments	Preliminary management recommendations / further works	Root Protection Area Radius (m) - Capped to 15m	Root Protection Area (m²)
				North	East	South	West					Physiological Condition: Good, Fair, Poor, Dead.	Structural Condition: Good, Fair, Poor.							
G422	Betula pendula Youngii (Silver Birch), Salix caprea (Goat Willow), Salix fragilis (Crack Willow), Crataegus monogyna (Hawthorn), Acer pseudoplatanus (Sycamore), Sambucus nigra (Elder)	11	1	3	3	3	3	300	1	EM	Fair	Fair	10+	C2	Dense invasive scrub. Mixed species. Average form, shape and condition	None	3.6	40.72		
G422A	Betula pendula Youngii (Silver Birch), Salix caprea (Goat Willow), Salix fragilis (Crack Willow), Crataegus monogyna (Hawthorn), Acer pseudoplatanus (Sycamore), Sambucus nigra (Elder)	11	1	3	3	3	3	300	1	EM	Fair	Fair	10+	C2	Dense invasive scrub. Mixed species. Average form, shape and condition	None	3.6	40.72		
G423	Crataegus monogyna (Hawthorn), Salix caprea (Goat Willow), Sambucus nigra (Elder), Betula pendula (Silver Birch)	3	1	2	2	2	2	50	1	M	Fair	Fair	10+	C2	Dense invasive scrub. Mixed species. Average form, shape and condition	None	0.6	1.13		
G424	Crataegus monogyna (Hawthorn), Salix caprea (Goat Willow), Sambucus nigra (Elder), Betula pendula (Silver Birch)	3	1	2	2	2	2	50	1	M	Fair	Fair	10+	C2	Dense invasive scrub. Mixed species. Average form, shape and condition	None	0.6	1.13		
G424A	Crataegus monogyna (Hawthorn), Salix caprea (Goat Willow), Sambucus nigra (Elder), Betula pendula (Silver Birch)	3	1	2	2	2	2	50	1	M	Fair	Fair	10+	C2	Dense invasive scrub. Mixed species. Average form, shape and condition	None	0.6	1.13		

Tree / Group / Hedge Ref. No.	Latin Name (Common Name)	Height (m)	Crown Clearance (m) & compass direction	Crown Spread (m)				Stem Diameter @ 1.5m (mm) (Where up to 5 stems present)				No. of Stems (6+)	Stem Diameter average (@1.5 m (mm) Five Stems or more)	Age Class: Y (Young), SM (Semi-Mature), EM (Early-Mature), M (Mature), LM (Late-mature), V (Veteran)	Condition			Estimated Remaining Contribution: (<10, 10+, 20+, 40+)	BSS837 Categorisation Grading	Comments	Preliminary management recommendations / further works	Root Protection Area Radius (m) - Capped to 15m	Root Protection Area (m²)
				North	East	South	West								Physiological Condition: Good, Fair, Poor, Dead.	Structural Condition: Good, Fair, Poor.							
G425	Crataegus monogyna (Hawthorn), Salix caprea (Goat Willow), Sambucus nigra (Elder), Betula pendula (Silver Birch)	3	1	2	2	2	2	50					1	M	Fair	Fair	10+	C2	Dense invasive scrub. Mixed species. Average form, shape and condition	None	0.6	1.13	
G426	Crataegus monogyna (Hawthorn), Salix caprea (Goat Willow), Sambucus nigra (Elder), Betula pendula (Silver Birch)	3	1	2	2	2	2	50					1	M	Fair	Fair	10+	C2	Dense invasive scrub. Mixed species. Average form, shape and condition	None	0.6	1.13	
G427	Crataegus monogyna (Hawthorn), Salix caprea (Goat Willow), Sambucus nigra (Elder), Betula pendula (Silver Birch)	3	1	2	2	2	2	50					1	M	Fair	Fair	10+	C2	Dense invasive scrub. Mixed species. Average form, shape and condition	None	0.6	1.13	
G428	Crataegus monogyna (Hawthorn), Salix caprea (Goat Willow), Sambucus nigra (Elder), Betula pendula (Silver Birch)	3	1	2	2	2	2	50					1	M	Fair	Fair	10+	C2	Dense invasive scrub. Mixed species. Average form, shape and condition	None	0.6	1.13	
G429	Crataegus monogyna (Hawthorn), Salix caprea (Goat Willow), Sambucus nigra (Elder), Betula pendula (Silver Birch)	3	1	2	2	2	2	50					1	M	Fair	Fair	10+	C2	Dense invasive scrub. Mixed species. Average form, shape and condition	None	0.6	1.13	
G430	Crataegus monogyna (Hawthorn), Salix caprea (Goat Willow), Sambucus nigra (Elder), Betula pendula (Silver Birch)	5	1	2	2	2	2	50					1	M	Fair	Fair	10+	C2	Dense invasive scrub. Mixed species. Average form, shape and condition	None	0.6	1.13	

Tree / Group / Hedge Ref. No.	Latin Name (Common Name)	Height (m)	Crown Clearance (m) & compass direction	Crown Spread (m)				Stem Diameter @ 1.5m (mm) (Where up to 5 stems present)				No. of Stems (6+)	Stem Diameter average (@1.5 m (mm) Five Stems or more)	Age Class: Y (Young), SM (Semi-Mature), EM (Early-Mature), M (Mature), LM (Late-mature), V (Veteran)	Condition			Estimated Remaining Contribution: (≤10, 10+, 20+, 40+)	BS5837 Categorisation Grading	Comments	Preliminary management recommendations / further works	Root Protection Area Radius (m) - Capped to 15m	Root Protection Area (m²)
				North	East	South	West								Physiological Condition: Good, Fair, Poor, Dead.	Structural Condition: Good, Fair, Poor.							
G431	Crataegus monogyna (Hawthorn), Salix caprea (Goat Willow), Sambucus nigra (Elder), Betula pendula (Silver Birch)	5	1	2	2	2	2	50					1	M	Fair	Fair	10+	C2	Dense invasive scrub. Mixed species. Average form, shape and condition	None	0.6	1.13	
G432	Crataegus monogyna (Hawthorn), Salix caprea (Goat Willow), Sambucus nigra (Elder), Betula pendula (Silver Birch)	5	1	2	2	2	2	50					1	M	Fair	Fair	10+	C2	Dense invasive scrub. Mixed species. Average form, shape and condition	None	0.6	1.13	
G433	Crataegus monogyna (Hawthorn), Salix caprea (Goat Willow), Sambucus nigra (Elder), Betula pendula (Silver Birch)	5	1	2	2	2	2	50					1	M	Fair	Fair	10+	C2	Dense invasive scrub. Mixed species. Average form, shape and condition	None	0.6	1.13	
G434	Fraxinus excelsior (Ash), Acer pseudoplatanus (Sycamore)	13	1	4	4	4	4	300					1	EM	Fair	Fair	10+	C2	Average form, shape and condition	None	3.6	40.72	
G434A	Crataegus monogyna (Hawthorn), Salix caprea (Goat Willow), Sambucus nigra (Elder), Betula pendula (Silver Birch)	3	1	2	2	2	2	50					1	M	Fair	Fair	10+	C2	Invasive scrub	None	0.6	1.13	
G434B	Crataegus monogyna (Hawthorn), Salix caprea (Goat Willow), Sambucus nigra (Elder), Betula pendula (Silver Birch)	3	1	2	2	2	2	50					1	M	Fair	Fair	10+	C2	Dense invasive scrub. Mixed species. Average form, shape and condition	None	0.6	1.13	

Tree / Group / Hedge Ref. No.	Latin Name (Common Name)	Height (m)	Crown Clearance (m) & compass direction	Crown Spread (m)				Stem Diameter @ 1.5m (mm)				No. of Stems (6+)	Stem Diameter average (@1.5 m (mm) Five Stems or more)	Age Class: Y (Young), SM (Semi-Mature), EM (Early-Mature), M (Mature), LM (Late-mature), V (Veteran)	Condition			Estimated Remaining Contribution: (<10_10+_20+_40+)	BSS837 Categorisation Grading	Comments	Preliminary management recommendations / further works	Root Protection Area Radius (m) - Capped to 15m	Root Protection Area (m²)
				North	East	South	West	(Where up to 5 stems present)							Physiological Condition: Good, Fair, Poor, Dead.	Structural Condition: Good, Fair, Poor.							
G435	Acer pseudoplatanus (Sycamore),Crataegus monogyna (Hawthorn),Ulmus procera (English Elm),Fraxinus excelsior (Ash),Salix fragilis (Crack Willow)	14	1	4	4	4	4	350				1		EM	Fair	Fair	20+	B2	Average form, shape and condition		4.2	55.42	
G436	Acer pseudoplatanus (Sycamore),Crataegus monogyna (Hawthorn),Ulmus procera (English Elm)	5	1	2	2	2	2	100				1		EM	Fair	Fair	10+	C2	Roadside mixed vegetation	Remove dead stems	1.2	4.52	
G437	Acer pseudoplatanus (Sycamore),Crataegus monogyna (Hawthorn),Ulmus procera (English Elm)	5	1	2	2	2	2	100				1		EM	Fair	Fair	10+	C2	Roadside mixed vegetation	Remove dead stems	1.2	4.52	
G438	Acer pseudoplatanus (Sycamore),Fraxinus excelsior (Ash),Quercus robur (Common Oak),Crataegus monogyna (Hawthorn)	14	2	4	4	4	4	350				1		EM	Fair	Fair	20+	B2	Roadside mixed vegetation	Remove dead stems	4.2	55.42	
T439	Ulmus procera (English Elm)	8	1	3	3	3	3	200				1		SM	Poor	Poor	<10	U	Poor form, shape and condition	Remove dead stems	2.4	18.1	
T440	Ulmus procera (English Elm)	8	1	3	3	3	3	200				1		SM	Poor	Poor	<10	U	Poor form, shape and condition	Remove dead stems	2.4	18.1	
T441	Ulmus procera (English Elm)	8	1	3	3	3	3	200				1		SM	Poor	Poor	<10	U	Poor form, shape and condition	Remove dead stems	2.4	18.1	
T442	Fraxinus excelsior (Ash)	9	1	4	4	4	4	265				1		EM	Fair	Fair	10+	C2	Average form, shape and condition	None	3.18	31.77	
T443	Fraxinus excelsior (Ash)	9	2	5	5	5	5	265				1		EM	Fair	Fair	10+	C2	Average form, shape and condition	None	3.18	31.77	
T444	Fraxinus excelsior (Ash)	9	2	4	4	4	4	250				1		EM	Fair	Fair	10+	C2	Average form, shape and condition	None	3	28.28	
T445	Fraxinus excelsior (Ash)	9	2	2	2	2	2	230				1		EM	Fair	Fair	10+	C2	Average form, shape and condition	None	2.76	23.93	
T446	Fraxinus excelsior (Ash)	9	2	3	3	3	3	230				1		EM	Fair	Fair	10+	C2	Average form, shape and condition	None	2.76	23.93	

Tree / Group / Hedge Ref. No.	Latin Name (Common Name)	Height (m)	Crown Clearance (m) & compass direction	Crown Spread (m)				Stem Diameter @ 1.5m (mm) (Where up to 5 stems present)	No. of Stems (6+)	Stem Diameter average (@1.5 m (mm) Five Stems or more)	Age Class: Y (Young), SM (Semi-Mature), EM (Early-Mature), M (Mature), LM (Late-mature), V (Veteran)	Condition			Estimated Remaining Contribution: (≤10, 10+, 20+, 40+)	BS5837 Categorisation Grading	Comments	Preliminary management recommendations / further works	Root Protection Area Radius (m) - Capped to 15m	Root Protection Area (m²)			
				North	East	South	West					Physiological Condition: Good, Fair, Poor, Dead.	Structural Condition: Good, Fair, Poor.										
T447	Fraxinus excelsior (Ash)	9	2	3	3	3	3	260					3		SM	Fair	Fair	10+	C2	Average form, shape and condition	None	3.12	30.16