8.13 ARBORICULTURAL DEVELOPMENT STATEMENT & SURVEY

March 2017
CBA10677 v1

English Heritage

ARBORICULTURAL DEVELOPMENT STATEMENT

Site:
Marble Hill House and Park

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ARBORICULTURAL DEVELOPMENT STATEMENT

Arboricultural Implications Assessment and Method Statement
guided by recommendations within BS5837:2012

Client:	English Heritage
Site:	Marble Hill House and Park
Arboricultural Consultant:	Stefan Rose *BSc (Hons), TechCert (Arbor.A), TechArborA*
Date:	March 2017

SUMMARY

There are development proposals to improve the existing café facilities at Marble Hill House and Park within the stable block area, improve the play facilities adjacent to the stable block and reinstate the landscaping around Marble Hill House and down to the River Thames towards and in line with the original landscaping of the House and grounds. The impact of these works have been assessed broadly in accordance with BS5837:2012 *"Trees in Relation to Design, Demolition and Construction – Recommendations"*.

This Arboricultural Development Statement (ADS) will demonstrate the protection measures for the trees and should be read in association with the Tree Protection Plans CBA10677.02 TPP and CBA10677.03 TPP and the Tree Retention and Removal Plan CBA10677.04 TRP that identifies tree protection, removal and retention measures. It follows the initial tree survey and implications assessment.

The emphasis of the report is predominantly that of preservation and tree protection. It identifies methodologies to provide protection for trees, to ensure their healthy and safe retention during and post development, as guided by BS5837:2012 and current best practice.

The tree survey exercise identified 66 (sixty six) individual trees and 24 (twenty four) groups of trees. Within these groups, 234 (two hundred and thirty four) trees were considered worthy of note. The development works focus on three areas of the park; improving the existing café facilities within the stable block area; improving the play facilities adjacent to the stable block and reinstating the landscaping around Marble Hill House and down to the River Thames.

Improvements to the café facilities at the stable block will require the removal of 2 (two) trees (T12 and T50), part of Group 3 will be removed and 1 (one) low grade tree (T56) will be removed to improve the visual aspect of the more dominant trees in that area.

Improvements to the play area adjacent to the stable block do not require any trees to be removed as a direct result of the works. One poor quality tree (T21) will be removed due to its condition.

The reinstatement of the landscaping to the four quarters around Marble Hill House and the grounds down to the River Thames will remove 3 (three) individual trees, 22 (twenty two) trees noted within groups and 1 (one) group of trees, plus the management of the four quarters woodland/groups to involve the coppicing of trees and the retention of the noted specimen trees.

Tree 14 (already noted by English Heritage for removal) and Trees 21, 46, G3.28 and G3.30 are recommended for removal for reasons of sound arboricultural management regardless of any development proposals. Therefore the removal of these poor quality trees should not have a bearing on this development proposal. If the client wishes G3.28 and G3.30 could be made safe and retained for habitat value as they stand within a group, subject to the acceptance of risk associated with the trees' health and condition.

CBA Trees believes that the trees highlighted for retention within this report can be retained without undue stress on their long-term health.

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SUPPORTING INFORMATION/APPENDICES:

CB1	Tree Survey Schedule including Root Protection Area Schedule
CB2	Tree Survey Plan CBA10677.01 TSP
CB3	Tree Protection Plan CBA10677.02 TPP
	Tree Protection Plan CBA10677.03 TPP
	Tree Retention and Removal Plan CBA10677.04 TRP
CB4	Tree Works Schedule

GUIDING PRINCIPLES/APPENDICES:

CB5	Tree Protection Guidance Leaflet
	Construction Exclusion Zone Site Notice
	Common Causes of Damage During Construction Works
CB6	Qualifications and Experience

PART 1
ARBORICULTURAL IMPLICATIONS ASSESSMENT

1.0 INTRODUCTION

1.1 There are development proposals to improve the existing café facilities at the park within the stable block area, improve the play facilities adjacent to the stable block and reinstate the landscaping around Marble Hill House and down towards the River Thames to re-establish part of the parks landscaping in line with the original landscaping of the House and grounds. The impact of these works have been assessed broadly in accordance with BS5837:2012 *"Trees in Relation to Design, Demolition and Construction – Recommendations"*.

1.2 Document disclosure provided:

- Landscape Proposals by J&L Gibbons
- Stable Block café Proposals by Van Heyningen and Haward Architects
- Structural Information by The Morton Partnership

1.3 The client and project architects and landscape architects provided the original site plans and locations of the trees, and these have been the basis for the production of subsequent plans. Whilst CBA Trees has had a limited input in defining the contents of the development plan, it broadly conforms to the requirements of BS5837:2012 *"Trees in Relation to Design, Demolition and Construction – Recommendations"* and current best practice advice.

1.4 Our advice has been sought on the principles of the development and landscape improvement works in relation to the potential impact on the existing tree stock, to inform and to facilitate the development layout.

2.0 CLIENT'S BRIEF

2.1 In line with our written quotation and verbal instructions, information has been compiled in accordance with BS5837:2012 and current best practice advice.

- To undertake a Tree Survey (schedule including Root Protection Areas appended at CB1).
- To produce an AutoCAD compliant Tree Survey Plan that relies on the accuracy of the topographical survey provided by the client. (Plan CBA10677.01 TSP appended at CB2).
- To undertake an Arboricultural Implications Assessment (AIA) of the proposed development provided by the client to identify which trees will be lost, which can be retained and suggest mitigating build techniques in order to retain trees.
- Based on the above and further on-going discussions, to provide an Arboricultural Development Statement detailing the methodologies for the retention of the tree stock where feasible, in relation to the approved development layout including Tree Protection Plans (CBA10677.02 TPP and CBA10677.03 TPP and Tree Retention and Removal Plan (CBA10677.04 TRP) appended at CB3.

2.2 The advice provided has been formulated without discussion with the contractors, who at this stage have not been appointed. Once the main contractors are appointed, amendments to this statement may be required for construction purposes. All amendments will be assessed by the retained arboricultural consultant and approved in writing by London Borough of Richmond Council.

3.0 DESCRIPTION OF THE SITE

3.1 Marble Hill House is a listed building standing relatively central to its immediately surrounding grounds. The overall site is accessed from Richmond Road that defines the northern boundary, with the River Thames defining the southern boundary.

3.2 Numerous trees and groups of trees grow across the site. Some of these trees may date back to when the Georgian house was built but many are planted or self set trees that have since grown.

3.3 The site is mainly formed by large open spaces that are currently used as various sports fields with trees providing separation to these areas. The open space between the House and the river is currently a lawned garden area

3.4 The stable block café is located on the western boundary with the play area located to the south east of this.

4.0 THE TREE STOCK

4.1 CBA Trees undertook a tree survey on 25th, 27th October and 2nd November 2016. The tree survey exercise identified 66 (sixty six) individual trees and 24 (twenty four) groups of trees; within these groups 234 (two hundred and thirty four) trees were considered worthy of note. The Tree Survey Schedule and Tree Survey Plan (CBA10677.01 TSP) are appended at CB1.

4.2 *Tree Categorisation Method*

Category U = Trees in such a condition that any value would be lost within 10 years, or should be removed for reasons of sound arboricultural management.

Note: BS5837:2012 states -
"Category U trees are those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years."

Category A = Trees of high quality and value: in such a condition as to make a substantial contribution, (40 years or more is recommended).

Category B = Trees of moderate quality and value, capable of making a significant contribution for in excess of 20 years.

Category C = Trees of low quality and value which might remain for a minimum of 10 years or young trees with stems of less than 150mm diameter.

Note:
Trees under these categories are trees that should be a material consideration in the development process; the subcategories are intended to reflect arboricultural, landscape and cultural values respectively.

4.3 For more details of the existing tree stock, refer to the Tree Survey Schedule (appended at CB1).

5.0 TREE PRESERVATION ORDER/CONSERVATION AREA

5.1 The London Borough of Richmond Council has confirmed that the site lies within the CA8 Twickenham Riverside Conservation Area but there are no Tree Preservation Orders protecting trees on the site at this time.

5.2 As trees can be legally protected at any time, checks with the London Borough of Richmond Council should be made prior to carrying out any tree works to see if a Tree Preservation Order has been served.

6.0 PROPOSED TREE RETENTION AND TREE LOSS

6.1 In accordance with the recommendations contained within BS5837:2012, an experienced arboriculturist has assessed the requirements for tree protection and the Root Protection Area (RPA). The implications of the proposed development are detailed below, along with any mitigating measures to ensure the retention of these trees.

6.2 As part of the assessment, dimensions have been scaled from the proposed drawing 581_161123_JLG_Landscape provided by J&L Gibbons prepared and modified, to include the relevant Tree Survey data appended at CB3.

7.0 SUMMARY OF ARBORICULTURAL IMPLICATIONS

7.1 The following is a summary of arboricultural implications as indicated on Tree Protection Plans CBA10677.02 TPP and CBA10677.03 TPP along with the trees detailed for works or potentially implicated by works for the reinstatement landscaping works.

Table 1: Arboricultural Implications for the stable block café works

Tree No.	*Species*	*BS 5837:2012 Cat*	*Potential cause of harm*	*Implication*	*Mitigation*
6	Sweet Chestnut	B1+2	• Damage to roots • General site activities and movements	• Retained	• Tree is set away from development

PART 1
ARBORICULTURAL IMPLICATIONS ASSESSMENT

Tree No.	Species	BS 5837:2012 Cat	Potential cause of harm	Implication	Mitigation
12	Horse Chestnut	B1+2	• Damage to roots • General site activities and movements	• Removed	• Replacement planting
14	Robinia	U	-	• Removed	• Already noted for removal by English Heritage due to poor condition
15	Flowering Cherry	B1+2	• Damage to roots • Damage to crown • General site activities and movements • Landscaping works	• Retained	• Tree is set away from development •
16	Common Yew	A1+2	• Damage to roots • General site activities and movements • Landscaping works	• Retained	• Tree is set away from development •
50	Common Elder	C1	• Under footprint of development	• Removed	• Replacement planting
51	Common Yew	B1+2	• Damage to roots • Damage to crown • General site activities and movements • Installation of fencing • Removal of existing wall and foundation • Construction of new wall and foundation	• Retained	• To be protected as detailed in Section 2 of this report
52	Sycamore	C1+2 Interim	• Damage to roots • Damage to crown • General site activities and movements • Removal of existing wall and foundation • Construction of new wall and foundation	• Retained	• To be protected as detailed in Section 2 of this report • Wall foundations to be removed and installed to minimise impact on tree
53	Common Hornbeam	C1+2	• Damage to roots • Damage to crown • General site activities and movements • Part removal of existing wall and foundation • Construction of new footpath	• Retained	• To be protected as detailed in Section 2 of this report
54	Common Hornbeam	B1+2	• Damage to roots • Damage to crown • General site activities and movements • Part removal of existing wall and foundation • Removal of existing wall and patio area • Construction of new footpath	• Retained	• To be protected as detailed in Section 2 of this report
55	Common Hornbeam	B1+2	• Damage to roots • Damage to crown • General site activities and movements • Part removal of existing wall and foundation • Removal of existing wall and patio area • Construction of new footpath	• Retained	• To be protected as detailed in Section 2 of this report
56	Common Hornbeam	C1+2	• Damage to roots • Damage to crown • General site activities and movements	• Removed	• Removed to provide a visually more appealing out look from the café and due to its poor shape and being dominated by T54, 55 and 57

Tree No.	Species	BS 5837:2012 Cat	Potential cause of harm	Implication	Mitigation
57	Common Hornbeam	B1+2	• Damage to roots • Damage to crown • General site activities and movements	• Retained	• To be protected as detailed in Section 2 of this report
59	Horse Chestnut	C1+2	• Damage to roots • Damage to crown • General site activities and movements	• Retained	• To be protected as detailed in Section 2 of this report
G1.70	Common Lime	A1+2	• Damage to roots • Damage to crown • New access to eastern side of existing driveway • General site activities and movements	• Retained	• To be protected as detailed in Section 2 of this report
G3.29	Horse Chestnut	C1+2	• Damage to roots • Damage to crown • Installation of new driveway area on an existing compacted ground area • General site activities and movements	• Retained	• To be protected as detailed in Section 2 of this report
Grp 3	Holly Cherry Laurel Sycamore Horse Chestnut Yew Elder	B1+2	• Damage to roots • Damage to crown • Construction of new service yard access • Construction of new sub station • General site activities and movements	• Removed in part	• Retained section to be protected as detailed in Section 2 of this report • Section of group to be removed as indicated on CBA10677.02 TPP

Table 2: Arboricultural Implications for the play area works

Tree No.	Species	BS 5837:2012 Cat	Potential cause of harm	Implication	Mitigation
6	Sweet Chestnut	B1+2	• Damage to roots • General site activities and movements	• Retained	• Tree is set away from development
15	Flowering Cherry	B1+2	• Damage to roots • General site activities and movements	• Retained	• Tree is set away from development
16	Common Yew	A1+2	• Damage to roots • General site activities and movements • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
17	Common Lime	B1+2	• Damage to roots • Damage to crown • General site activities and movements • Landscaping works	• Retained	• Tree is set away from development • Minimal dig works for footpath
18	Common Lime	C1+2	• Damage to roots • Damage to crown • General site activities and movements • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
19	Flowering Cherry	C1	• Damage to roots • Damage to crown • General site activities and movements Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
20	Flowering Cherry	C1+2	• Damage to roots • Damage to crown • General site activities and movements • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report

Tree No.	Species	BS 5837:2012 Cat	Potential cause of harm	Implication	Mitigation
22	Sycamore	C1+2	• Damage to roots • Damage to crown • General site activities and movements • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
23	Pedunculate Oak	B1+2	• Damage to roots • Damage to crown • General site activities and movements • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
24	Common Ash	B1+2	• Damage to roots • Damage to crown • General site activities and movements • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
25	Flowering Cherry	C1+2	• Damage to roots • Damage to crown • General site activities and movements • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
26	Holm Oak	B1+2	• Damage to roots • General site activities and movements	• Retained	• Tree is set away from development
27	Red Oak	A1+2	• Damage to roots • Damage to crown • General site activities and movements • Landscaping works	• Retained	• Tree is set away from development
28	Common Walnut	B1+2	• Damage to roots • Damage to crown • General site activities and movements • Landscaping works	• Retained	• Tree is set away from development
29	London Plane	A1+2	• Damage to roots • Damage to crown • General site activities and movements • Landscaping works	• Retained	• Tree is set away from development
30	London Plane	B1+2 Interim	• Damage to roots • Damage to crown • General site activities and movements	• Retained	• Tree is set away from development

Table 3: Arboricultural Implications for the landscape reinstatement works

Tree No.	Species	BS 5837:2012 Cat	Potential cause of harm	Implication	Mitigation
8	Pedunculate Oak	B1+2 Inteirm	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
9	Robinia	C1+2	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
10	Robinia	C1+2	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report

PART 1
ARBORICULTURAL IMPLICATIONS ASSESSMENT

Tree No.	*Species*	*BS 5837:2012 Cat*	*Potential cause of harm*	*Implication*	*Mitigation*
11	Atlas Cedar	B1	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
30	London Plane	B1+2 Interim	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
32	Turkey Oak	B1+2	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
33	London Plane	A1+2	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
34	London Plane	B1+2	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
35	Common Ash	B1+2	• General site activities and movements damaging roots, trunk and or crown Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
36	London Plane	A1+2	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
37	Silver Maple	B1+2 Interim	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
38	London Plane	A1+2	• General site activities and movements damaging roots, trunk and or crown Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
40	Common Lime	C1+2	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
41	Common Lime	B1+2	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
42	Common Lime	B1+2	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report

Tree No.	Species	BS 5837:2012 Cat	Potential cause of harm	Implication	Mitigation
43	Pedunculate Oak	A1 Interim	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
44	Common Lime	B1+2	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
45	Common Ash	B1+2	• General site activities and movements damaging roots, trunk and or crown • Landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
47	Common Yew	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
48	Holm Oak	B1	• Reinstatement landscaping works	• Removed	• Replacement planting
49	Birch 'Youngii'	C1	• Reinstatement landscaping works	• Removed	• Replacement planting
Grp 4	Poplar Oak Willow Sycamore Horse Chestnut Box Elder Tree of Heaven	B1+2	• Reinstatement landscaping works	• Management works	• Replacement planting
G4.1	Hybrid Black Poplar	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.2	Turkey Oak	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.3	Common Beech	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.4	Pedunculate Oak	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.5	Pedunculate Oak	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.6	Pedunculate Oak	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.7	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.8	Common Horse Chestnut	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.9	Common Horse Chestnut	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.10	Common Horse Chestnut	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.11	Hybrid Black Poplar	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.12	Ashleaf Maple	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.13	Swedish Whitebeam	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G4.14	Common Horse Chestnut	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.15	Ashleaf Maple	B1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G4.16	Ashleaf Maple	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting

Tree No.	Species	BS 5837:2012 Cat	Potential cause of harm	Implication	Mitigation
G4.17	Common Horse Chestnut	U	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.18	Hybrid Black Poplar	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.19	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.20	Mountain Ash	B1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G4.21	Western Balsam Poplar	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G4.22	Western Balsam Poplar	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G4.23	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.24	Western Balsam Poplar	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G4.25	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.26	Crack Willow	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.27	Lombardy Poplar	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.28	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.29	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.30	Lombardy Poplar	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.31	Lombardy Poplar	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.32	Lombardy Poplar	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.33	Lombardy Poplar	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.34	Lombardy Poplar	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.35	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.36	Tree of Heaven	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.37	Crack Willow	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G4.38	Crack Willow	C1+2 Interim	• Reinstatement landscaping works	• Removed	• Replacement planting
G4.39	Crack Willow	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G4.40 *	Crack Willow	B1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G4.41	Sycamore	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.42	Common Ash	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.43	Sycamore	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G4.44	Sycamore	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
Grp 5	Elder Sycamore Ash Holly	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G5.1	Common Ash	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G5.2	Common Ash	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G5.3	Common Ash	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting

Tree No.	Species	BS 5837:2012 Cat	Potential cause of harm	Implication	Mitigation
G5.4	Common Ash	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G5.5	Sycamore	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G5.6	Common Ash	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G5.7	Common Ash	U	• Reinstatement landscaping works	• Removed	• Replacement planting
G5.8	Sycamore	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
Grp 6	Sycamore Turkish Hazel Common Walnut Common Lime Common Ash Common Yew Norway Maple	B2	• Reinstatement landscaping works	• Management works	• Replacement planting • Specimen trees to be retained • Yew, Holly and understorey species to be coppiced • To be protected as detailed in Section 2 of this report
G6.1	Sycamore	B1+2 Interim	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.2	Turkish Hazel	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.3	Common Walnut	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.4	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.5	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.6	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.7	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.8	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.9	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.10	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.11	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.12	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.13	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.14	Turkish Hazel	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.15	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.16	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.17	Common Ash	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.18	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.19	Common Lime	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.20	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.21	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.22	Common Lime	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.23	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.24	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.25	Common Yew	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.26	Common Lime	B1+2 Interim	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.27	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report

Tree No.	Species	BS 5837:2012 Cat	Potential cause of harm	Implication	Mitigation
G6.28	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.29	Common Ash	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G6.30	Norway Maple	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
Grp 7	Pedunculate Oak Ash Yew Robinia Field Maple Sycamore Holm Oak Hawthorn Dogwood Holly Cherry Laurel Portugal Laurel Spotted Laurel Elm Snowberry Norway Maple	B1+2	• Reinstatement landscaping works	• Management works	• Replacement planting • Specimen trees to be retained • Yew, Holly and understorey species to be coppiced • To be protected as detailed in Section 2 of this report
G7.1	Common Yew	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G7.2	Common Ash	B1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
G7.3	Common Ash	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G7.4	Wild Cherry	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G7.5	Sycamore	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G7.6	Sycamore	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G7.7	Common Ash	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G7.8	Common Lime	U	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G7.9	Common Yew	U	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G7.10	Common Ash	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G7.11	Common Ash	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G7.12 *	Common Yew	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G7.13	Common Ash	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G7.14	Pedunculate Oak	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G7.15	Common Ash	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G7.16	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
Grp 8	Yew Sycamore Ash Oak Hornbeam Elm, Hazel, Laurel, Ivy, Butchers Broom	B2	• Reinstatement landscaping works	• Management works	• Replacement planting • Specimen trees to be retained • Yew, Holly and understorey species to be coppiced • To be protected as detailed in Section 2 of this report
G8.1	Common Hornbeam	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G8.2	Common Yew	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G8.3	Common Yew	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G8.4	Common Yew	C2+1	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report

Tree No.	Species	BS 5837:2012 Cat	Potential cause of harm	Implication	Mitigation
G8.5	Sycamore	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G8.6	Common Ash	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G8.7	Common Lime	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G8.8	Common Ash	B1+2 Interim	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G8.9	Common Yew	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G8.10	Common Yew	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G8.11	Common Yew	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G8.12	Common Holly	C1+2	• Reinstatement landscaping works	• Removed	• Replacement planting
Grp 9	Sycamore Lime Oak Yew Holly Cherry Laurel Elder Ash Rhododendron Portugal Laurel Snowberry Hornbeam	B1+2	• Reinstatement landscaping works	• Management works	• Replacement planting • Specimen trees to be retained • Yew, Holly and understorey species to be coppiced • To be protected as detailed in Section 2 of this report
G9.1	Common Lime	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.2	Common Ash	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.3	Common Yew	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.4	Common Yew	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.5	Pedunculate Oak	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.6	Common Beech	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.7	Pedunculate Oak	U	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.8	Pedunculate Oak	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.9	Pedunculate Oak	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.10	Pedunculate Oak	U	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.11	Pedunculate Oak	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.12	Common Horse Chestnut	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.13	Sycamore	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.14	Common Ash	U	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.15 *	Common Lime	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.16	Sycamore	C1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.17	Common Lime	U	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G9.18	Common Ash	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report

PART 1
ARBORICULTURAL IMPLICATIONS ASSESSMENT

Tree No.	*Species*	*BS 5837:2012 Cat*	*Potential cause of harm*	*Implication*	*Mitigation*
Grp 10	Ash Sycamore Yew Beech Laurel Elm	B2	• Reinstatement landscaping works	• Management works	• Replacement planting • Specimen trees to be retained • Yew, Holly and understorey species to be coppiced • To be protected as detailed in Section 2 of this report
G10.1	Common Ash	B1+2	• Reinstatement landscaping works	• Retained	• To be protected as detailed in Section 2 of this report
G10.2	Common Ash	B1+2	• Reinstatement landscaping works	• Removed	• Replacement planting

8.0 PRE-COMMENCEMENT SITE MEETING

8.1 It is recommended that a pre-commencement site meeting is be held prior to any works commencing on site, to agree all approved processes with the arboricultural consultant, the construction personnel and London Borough of Richmond Council Tree Officer. This meeting could be used to formally agree the methods of work, position of site offices, material storage, compounds, parking and tree protection measures prior to commencement of the development and the associated clearance work. It is advised that a pre commencement meeting is held prior to the start of works for the development of the stable block café, the improvement to the play area adjacent to the stable café and the landscape restoration works.

9.0 ADDITIONAL ARBORICULTURAL ADVICE FOR SITE PERSONNEL

9.1 To provide site personnel with additional information regarding the requirements of Tree Protection, a leaflet (appended at CB5) shall be issued to all staff at the time of their site induction. Spare copies of this leaflet shall be available in the site office as replacements.

9.2 In order to inform site personnel of the purpose of the barriers, information notices shall be fixed to the barriers at 5m intervals. These notices shall be of all-weather construction and shall be substantially in the form of the specimen provided at appendix CB5 and replaced as and when necessary.

10.0 PRE-DEVELOPMENT TREE WORKS

10.1 All tree works will be undertaken prior to the commencement of site preparation and construction works.

10.2 **All permitted or approved tree work** should be carried out in accordance with the British Standard *"Recommendations for Tree Work"* BS3998:2010, by suitably qualified and experienced professional arborists. Under no circumstances shall site personnel undertake any tree pruning operations. All tree surgery works should be carried out prior to the development of the site, and erection of protective barriers.

10.3 If additional tree works are required during the development works around the café or as part of the landscape improvement works, a written notification must be made prior to the works being programmed/commenced and are subject to the Council considering the works and allowing the tree works before the works are carried out.

10.4 Consideration should be given to the timing of any tree works to avoid the active growing period of trees. Therefore, all tree work should ideally be carried out during the dormant period from November through to February and then again from June to August.

10.5 Due to the bird-nesting season, considered to be from 1st March through to the 31st July (Natural England) depending on weather conditions, consideration must also be given to the potential for nesting birds. Therefore, where tree work is to be carried out within June, July or August the project ecologist must be consulted to:

- Complete or advise on a pre-works survey that needs to be carried out by a suitably competent person. As a general rule, it should be assumed that birds will be nesting in trees, and it is down to contactors to assess, record and confirm that any works carried out in the management of trees and other vegetation has not disturbed actively nesting birds.

- Ground vegetation, and therefore ground nesting birds, can often be overlooked by tree workers so additional care and controls should be taken when access and egress to the work site may also cause disturbance or damage to a nesting site. This is also true for retained trees on site as the removal of adjacent trees or remedial works on a tree may lead to an established nest being abandoned, exposed to the elements or predation. This action is also a breach of the Act and therefore could lead to prosecution due to the infringement of the Wildlife and Countryside Act 1981 and breaching the Conservation of Habitats and Species Regulations 2010 (as amended).

10.6 Although not apparent at the time of the site visit, consideration should also be given to the presence of bats, and a full visual assessment should be undertaken before any works are carried out on the trees. Where bats are identified as a serious concern, a bat survey should be undertaken by qualified and trained personnel to identify the needs of the bats (roosts, resting place etc) and no tree works can be carried out until the 'all clear' is given, or a programme of recommendations is received in writing.

10.7 Should additional tree works become apparent during the construction process; written consent will be required from London Borough of Richmond Council prior to these additional works being undertaken.

10.8 All tree works that are required to facilitate the development and landscape restoration works are detailed within the Tree Works Schedule appended at CB4.

11.0 TREE PROTECTION MEASURES

11.1 All site operations will be planned, implemented and supervised to prevent the following unless otherwise agreed within this report:

- Root severance
- Damage to the bark, branches and trunks
- Compaction of the soil within the Construction Exclusion Zone
- Alterations in soil level

- Soil contamination by phytotoxic materials such as herbicides, petrol, oils, diesel, cement and concrete washings or other construction additives

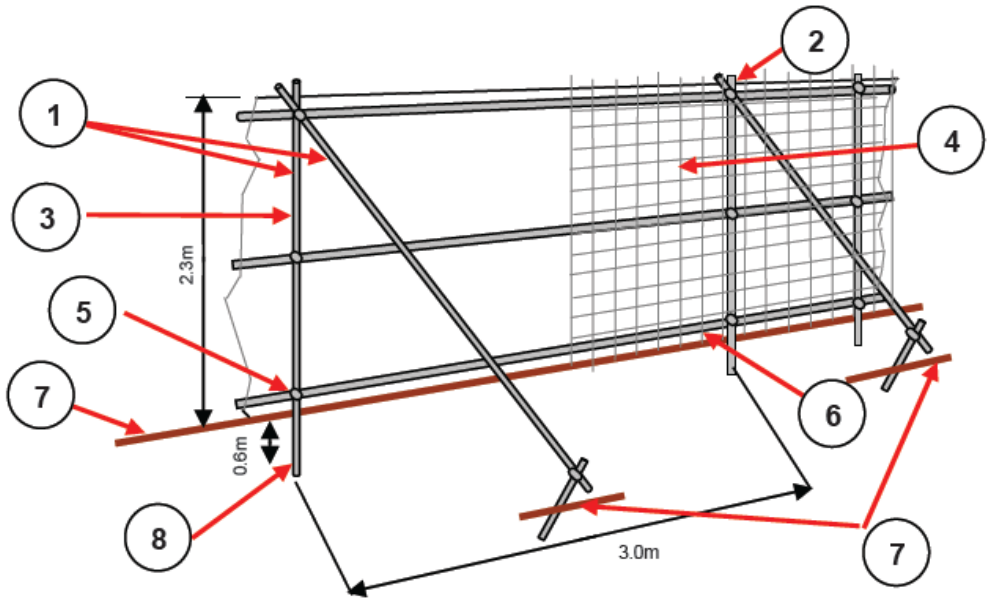
11.2 Before starting any site demolition, ground or construction works in relation to this development proposal; tree protection will be installed in accordance with Tree Protection Plans CBA10677.02 TPP for works relating to the stable block café, CBA10677.03 TPP for works relating to the play area adjacent to the stable block café and CBA10677.04 TRP for the tree removal and retention for the landscape restoration works around Marble Hill House and down to the River Thames (three plans appended at CB3). This will occur immediately following the completion of tree works for each phase of the site works and prior to any site preparation works starting.

A copy of the Tree Protection Plans will be displayed in the site office and canteen as a point of reference for all site operatives.

11.3 ***Standard Protective Barrier***

Installing the following protective barrier as indicated on Tree Protection CBA10677.02 TPP and CBA10677.03 TPP will protect retained trees. The barrier is to comprise of a vertical and horizontal framework, well braced to resist impacts, with vertical tubes spaced at a maximum interval of 3m. Onto this, weldmesh panels should be securely fixed with wire or scaffold clamps.

Figure 1: Protective Barrier



1. Standard scaffold poles
2. Uprights to be driven into the ground
3. Panels secured to uprights with wire ties and where necessary standard scaffold clamps
4. Weldmesh wired to the uprights and horizontals
5. Standard clamps
6. Wire twisted and secured on inside face of barriers to avoid easy dismantling
7. Ground level
8. Approximately 0.6m driven into the ground

Example of protective barrier:

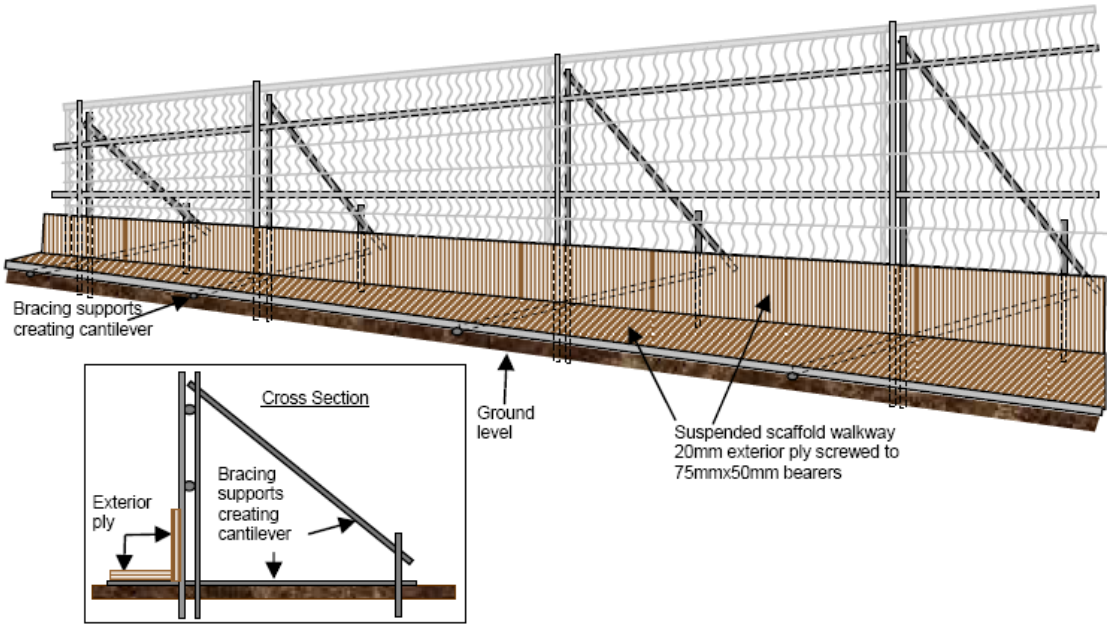
11.4 *Ground Protection*

11.4.1 *Pedestrian movements*

11.4.2 Trees 53, 54 and 56 require construction activity within the identified Construction Exclusion Zone (CEZ); ground protection will be implemented for these trees as per the Tree Protection Plan CBA10677.02 TPP.

11.4.3 Ground protection will be constructed in accordance with Figure 2 below for pedestrian movements, and consist of a suspended walkway decked with 20mm exterior grade Plyboard supported on 75 x 50mm bearers. The specification provides for pedestrian access only.

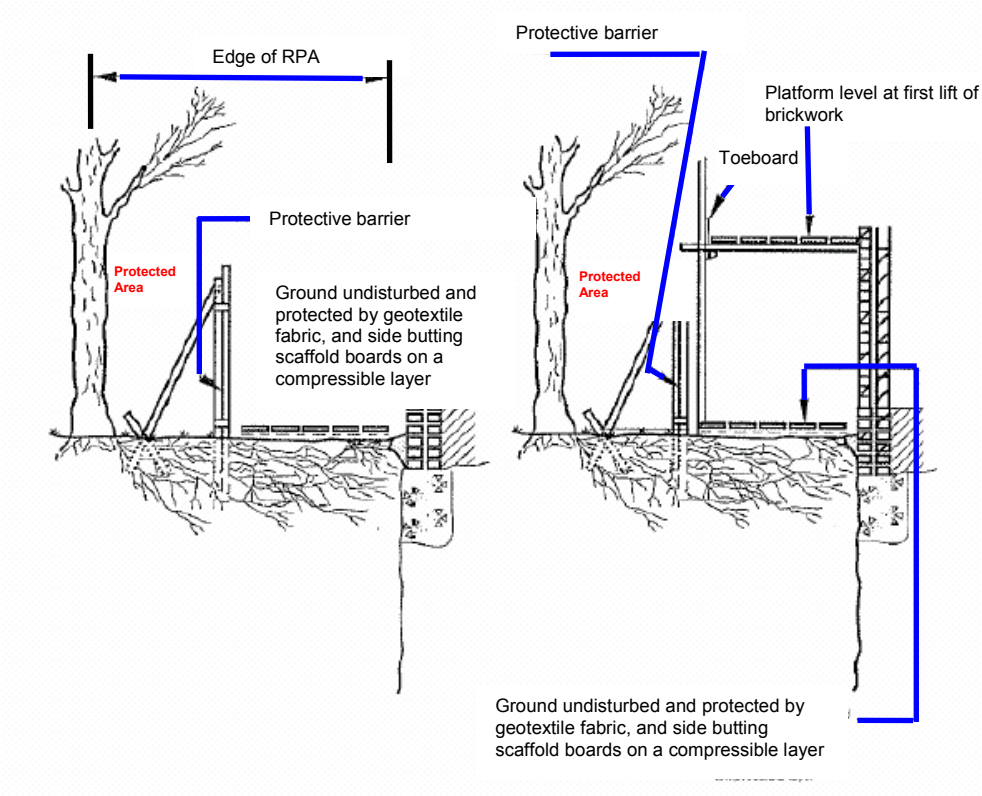
Figure 2: Pedestrian walkway within the Root Protection Area



11.4.4 An alternative approach is provided (Figure 3 below), the method will allow for construction and working space within the CEZ of trees. This method will consist of a single thickness of butt jointed scaffold boards supported on a 150mm thick layer

of composted woodchip that is prevented from mixing with the underlying soil by geotextile separation layer.

Figure 3: Ground Protection Specification



11.5 Site and Machinery Access within Construction Exclusion Zone

11.5.1 At this stage, no information has been provided as to the type, weight or ground pressure of the equipment to be deployed for the landscaping reinstatement works, and therefore the exact type of ground protection is yet to be specified if it is indeed required. The method of ground protection will be engineer designed and fit for purpose. Prior to the commencement of works, ground protection will be assessed by the retained arboricultural consultant and approved in writing by the London Borough of Richmond Council Tree Officer.

11.5.2 As a guide, a compressible layer will be incorporated into the design to minimise compaction of the rooting environment. This layer could consist of a thick layer of composted wood chip or preparatory neoprene mats.

11.6 Once the barriers and ground protection are in place it must remain *in-situ* throughout the following list:

- Contractor occupancy
- Plant and materials delivery
- Construction works
- Installation of porous surfacing
- Utility installation

- Completion of development
- Landscaping

11.7 The areas protected by barriers, fencing and ground protection will be regarded as **sacrosanct**, and the tree protective barriers shall not be taken down or relocated at any time without the written approval of London Borough of Richmond Council. An example of a CEZ notice is appended at CB5.

12.0 DEMOLITION, REMOVAL OF BUILT FORM AND HARD SURFACES IN CLOSE PROXIMITY TO RETAINED TREES

12.1 The demolition and removal of the existing boundary wall and its foundations will be carried out so as to prevent damage to existing retained trees.

12.2 Demolition of existing built form in close proximity to the retained trees must be done with due care and attention, in order to adequately respect overhanging canopies of all retained trees. To this end, the following rules will apply:-

- Site personnel are to undergo an induction session prior to being allowed to work on site. The induction will introduce the contractors to the requirements of the Protection Method Statement. A copy of the Method Statement will be made available as a point of reference in respect of tree protection requirements. In addition, a copy of the Tree Protection Plan will be provided or pinned up in the site hut. During the induction, trees that are to be retained and protected will be highlighted to the demolition personnel and they will be physically shown which trees are to be protected on site. In this way, it is hoped that unnecessary damage, by root disturbance and collision of machinery booms and operating arms with tree crowns can be avoided.

- All walls, foundations and basements are to be pulled in on themselves towards the centre of the site and away from retained trees. This will be done in a direction away from the tree protective barriers and all large machinery to be operated at least 2.5-3.0 metres outside the line of the tree protective fence line from where it is erected for the site preparation works.

- Any machinery used for this purpose is to stand and operate over existing hard surfaces wherever possible, but always outside the CEZ as defined by the protective barriers.

- Lightweight structures will be demolished and removed by hand. Work will be carried out from existing hard surface. If the structure is not served by existing hard surface, ground protection will be laid in accordance with Plan CBA10677.02 TPP.

- Where dust is created and deposited on adjacent retained trees, provision will be made to wash down the crowns of retained trees weekly to prevent excessive dust affecting the photosynthetic capacity of retained trees.

12.3 Any removal of hard surfacing, built form or other excavations in close proximity to trees will be undertaken by working only from the existing hard surface or protected ground area. The required work should then be completed with hand operated tools or appropriate machinery, but under the supervision of an arboriculturist. Any machinery or equipment to be used will need to be lightweight and run on additional ground protection, or working from the existing hard standing only.

13.0 EXISTING SERVICES

13.1 No information has been provided on the location and size of existing services. However, if there are any existing services within the RPA and CEZ of retained trees will not be chased out, but cut at the edge of any structure and left *in- situ.*

13.2 Cabling will only be recovered from beneath a CEZ where it is located in ducting, and can be removed by winching from an existing service manhole beyond the CEZ.

13.3 Service pipes and ducts, where they are located within the CEZ or RPA of retained trees, will be made redundant either by pipe bursting or by filling with an inert material such a foamed concrete.

14.0 AVOIDING DAMAGE TO STEMS AND BRANCHES

14.1 Care shall be taken when planning site operations, to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact could result in serious damage to them, and might make their safe retention impossible. Consequently, any transit or traverse of plant in close proximity to trees, will be conducted under the supervision of a banksman, in order to ensure adequate clearance from trees is maintained at all times.

15.0 VEHICULAR MOVEMENTS

15.1 There should be minimal vehicular movement in the potential rooting zone and outside the CEZ identified on plans CBA10677.02 TPP and CBA10677.03 TPP and CBA10677.04 TRP.

15.2 It is not anticipated that there will be a need for excess vehicular movement near the retained trees for works relating to the café development given that there is an established vehicle access and areas of hard standing.

15.3 For works relating to the improvements to the play area adjacent to the café, the existing boundary fence and additional tree protection measures will limit vehicle movements so that tree roots and their environment are not adversely damaged by vehicles tracking over the soft ground.

15.4 For the landscape restoration works around Marble Hill House and down to the River Thames, all vehicles must remain at least 12m from the trunks of retained trees at all times.

16.0 SITING OF TEMPORARY OFFICES, TOILETS AND MATERIAL STORAGE COMPOUNDS

16.1 It is anticipated that all storage materials and deliveries shall make use of the open space outside of the RPAs of retained trees, the existing site compound and areas of existing hard standing in order to avoid unnecessary damage to tree roots.

16.2 The locations shall be agreed in writing with London Borough of Richmond Council prior to the commencement of works on site, and will remain in only those agreed locations throughout the construction phases. If an alternative location is required, this must be agreed in writing with London Borough of Richmond Council. This will also include the delivery; storage and movement of all essential facilities, as well as aspects such as temporary contractor vehicle parking and site location of chemical mixing (e.g. concrete). All such locations will be outside of the RPAs, and avoid areas where 'run off' of chemicals may flow into RPAs.

16.3 ***Site Huts***

All site huts that are to be situated on ground soft ground, shall have appropriate footings or be situated on a temporary surface, which will aid in reducing the potential for compaction of the ground, where they are in close proximity to the existing tree protective barrier line. Site huts can be used as part of the protective barrier boundary, and in some cases, can be beneficial where installation does not conflict with the aerial parts of the tree.

If it is proposed that site huts, ground protection or stores are to be located within the RPA of retained trees for more than 3 months, a temporary irrigation and aeration system will be installed to ensure that the rooting environment is maintained in a good condition. The system will include a compressible layer of composted wood chip or forest bark over a geotextile separation layer, on which ground protection or site huts can be placed. Watering will depend on permeability of the soil, weather conditions, and the extent of the area covered, but should include weekly watering from April to September, when no rainfall has occurred for more than four consecutive days.

16.4 ***Material Storage***

This shall be accommodated outside of the CEZ, particularly to avoid harmful spillages of fuel, or phytotoxic substances that may damage the health of retained trees.

17.0 GENERAL CONSIDERATIONS WITHIN AND OUTSIDE THE CONSTRUCTION EXCLUSION ZONE (CEZ)

17.1 Inside the CEZ formed by the protective barrier measures, the following prohibitions shall apply:

- No construction activity will occur within the CEZ unless otherwise stated in this report, or agreed in writing with London Borough of Richmond Council prior to the specific activity taking place.

17.2 In addition to the above, further precautions are necessary adjacent to trees outside the CEZ:

- Materials, which will contaminate the soil e.g. concrete mixing, diesel oil and vehicle washings, shall not be discharged within 10 metres of the tree stem. This should take into consideration the topography of the site and slopes, to avoid materials such as concrete washings running towards trees.

- Fires shall not be lit in a position where their flames can extend to within 5 metres of foliage, branches or trunk. This will depend on the size of the fire and the wind direction.

- Notice boards, telephone cables or other services shall not be attached to any part of the tree. (See appendix CB5 Common Causes of Damage During Construction Works)

18.0 UTILITY SERVICE CONNECTIONS

18.1 Details of all service location proposals for the stable block café works have not been forwarded to CBA Trees at the time of compiling this assessment. It is however assumed that, given the location of the trees to be retained and that existing services are present on site that serve the current stable block, any new services will be installed outside the root protection areas of retained trees, and connected to the existing where practicable, this will avoid disturbance of tree roots and ensure their healthy retention.

18.2 Where it is not possible to design services to be outside of root protection areas, services will be installed in accordance with the following specification:

18.3 All required excavation for service installation within the root protection areas of retained trees must be carried out by hand using non-metallic tools. Preferably, a compressed air lance (Soil Pick) will be used to loosen soil around existing roots. Any large roots greater than 25mm diameter or clusters of smaller roots will be retained and protected using damp Hessian before proceeding with further excavation.

Photograph 1:
Compressed Air Lance
removing soil from around roots

Photograph 2:
Exposed undamaged roots following excavation with soil pick

18.4 Great care should be taken to preserve and work around roots greater than 25mm in diameter, and clusters of smaller roots avoiding breakage, splitting or damage to the exposed bark. Within the area of excavation, split sections of appropriately sized plastic pipe will be tied around Hessian wrapped roots to prevent impact damage to bark occurring.

Photograph 3:
Exposed roots protected from damage with wet Hessian and split plastic pipe

Photograph 4:
Trench sides protected from drying by wet Hessian

18.5 If it is absolutely necessary to sever roots greater than 25mm in diameter, arboricultural advice must be sought. Where smaller roots must be severed, they should be cut back cleanly using secateurs or a sharp pruning saw.

18.6 No trenches containing exposed tree roots must be left open overnight. If the trench is to remain open for any period of time during the day, and/or the weather is hot, Hessian wrappings will be kept moist to prevent the roots from drying out and trench sides will be draped with damp Hessian to reduce the potential for root tip death through lack of moisture.

18.7 Backfilling of initial trenches should be carried out using the excavated soil, which should be worked in around roots and lightly "tamped" to remove air pockets whilst respecting the original soil profile. Compaction of the material by the use of pneumatic tools or a trench hammer will not be permitted. The backfill should be left proud of surrounding levels to allow for settlement.

18.8 Further advice on the installation of services is set out in NJUG Publication Volume 4 2007, and Section 7.7 of BS5837:2012.

19.0 FOUNDATION DESIGN AND CONSTRUCTION

19.1 Replacement foundations are proposed within the calculated RPA of Trees 51, 52, 53, 54 and 55.

19.2 These new foundations have been designed to be located on the footprint of the existing boundary wall foundations and the same depth, therefore the new foundation will not cause any detriment to the trees.

19.3 Where piles are to be used, these will be as small as possible to reduce the need for the use of heavy machinery within the RPA, and to minimise the risk of root damage. Pile layout will be designed to allow a minimum of 150mm movement each way from their centre line, to avoid damage to any roots discovered at the time of construction.

19.4 Consideration will be given to the type of machinery required for pile installation and necessary operating clearance, particularly where the crown overhangs the work area. Crown heights are given within the attached tree survey information appended at CB1.

19.5 Piles located within the RPA of retained trees should be sheathed to protect the soil and adjacent roots from the potential toxic effects of the concrete. Bored and poured piles are preferential to driven piles, as these require smaller machines that have a reduced risk of soil compaction and root disturbance.

20.0 GROUND LEVEL ALTERATIONS

20.1 There will be no increases or decreases to the ground levels within the root protection areas of the retained trees other than those that are detailed within this report or footpaths. If levels adjacent to the RPAs are affected then retaining structures must be designed to account for the retention of ground levels to avoid root loss through battering ground back.

21.0 INSTALLATION OF HARD SURFACING IN CLOSE PROXIMITY TO RETAINED TREES

21.1 The proposed footpath within the root protection area of Tree 17 within the play area and all footpaths within the four quarters of woodland/groups around Marble Hill House will follow the principles below:

- The proposed wearing surface will consider site-specific factors and will be designed in accordance with advice from a structural engineer drainage engineer and arboricultural consultant as appropriate. This will result in a design that is fit for purpose, adequate for the task and sympathetic to the biological requirements of the trees.
- If ground levels are to be raised, this should be achieved with a granular material that does not inhibit gaseous exchange (such as no-fines gravel, washed aggregate or cobbles).
- Sub-bases will consist of a non-binding, no fines granular material which does not inhibit water percolation or gaseous exchange.
- If a substantial area of fill is to be installed, provision will be made for the installation of irrigation and aeration system within the RPA of retained trees. Distance between pipes will not exceed 400mm, irrigation pipes will be connected to the surface water drainage system. Aeration pipes will be installed in between and will be protected by paving mounted grills.
- Depending on the load-bearing capacity of the soil determined through engineering testing, and the expected loads to be exerted on the soil, it may be necessary to incorporate a load suspension layer such as a 3-dimensional cellular confinement system. This layer must allow gaseous exchange both vertically and horizontally. Any load suspension system should only be used in accordance with the manufacturer's guidelines, and its installation should comply with any relevant health and safety guidance. CBA Trees can provide further information relating to appropriate systems on request.
- If the proposed area of surfacing is greater than 3 metres wide on one side of the tree, or it covers more than 20% of the RPA, it will be finished with a surface treatment which is permeable to gaseous and water movements.
- Any proposed hard surfacing will be designed to allow future growth of the roots and the base of the trunk, and as such should be no closer than 500mm from the

trunk base. This will avoid future damage, both to the tree and engineered surface.

- If edge supports are required, they will be designed to have minimal excavation of the existing soil surface, and be in the form of either wooden, aluminium or other edging materials, approved by a structural engineer and the retained arboriculturist. These edgings should be pinned in place, and the location of the pins should seek to avoid exposed surface or structural roots exceeding 25mm diameter.

22.0 INSTALLATION OF BOUNDARY FENCES

22.1 Boundary fences are proposed within the CEZ of Tree 51. Tree roots extend well in excess of the RPA of retained trees and are mainly located in the upper 600mm of soil. As such, even minor levelling and excavation can result in extensive damage to the root system. Inappropriate access within the CEZ for fence construction purposes can result in soil compaction and deterioration of the soil structure. Concrete used to support the posts is poisonous to plants and, if not controlled, can leach into the surrounding soil.

22.2 Fencing will be constructed in accordance with the following specification:

- Fencing will be designed so as to minimise the need for excavation and allow minor variations between post spacings to allow repositioning of posts to permit the retention of all roots where possible, that are greater than 25mm, which are discovered during the excavation of postholes within the RPA of retained trees.

- Fencing will be installed during period of dry weather so as to maintain soil structure and prevent compaction of the rooting environment.

- Fit for purpose ground protection will be placed along the line of construction within the trees root protection area to prevent compaction of the rooting environment of retained trees. This may take the form of robust plywood boards.

- New post holes will be carefully excavated by hand to avoid damage to roots greater than 25mm in diameter.

- Although postholes lined with heavy gauge polythene to prevent contamination of the rooting environment from drying concrete is the best option for the tree. It does not allow for the concrete to cure adequately against the surrounding soil. It is therefore imperative that fresh concrete is poured as dry as possible to avoid excessive leaching into the soil. If tree roots are exposed in post holes then heavy gauge polythene must be used to avoid direct contact between root and concrete.

- Bracing of posts off retained trees will not be permitted under any circumstances

23.0 SOFT LANDSCAPING WORKS

23.1 Any soft landscaping works within the development area around the stable café, the play area and the landscape improvement works for the grounds around Marble Hill House and down to the River Thames will be in accordance with the approved landscape plans provide by J&L Gibbons, and any specification of such works approved by London Borough of Richmond Council.

23.2 Landscaping will accord with following requirements where in close proximity to retained trees:

- Where landscaping works are to be carried out within the CEZ of retained trees after the main phase of construction has been completed. At this stage, it will be necessary to alter the line of/remove protective barriers in order to facilitate the landscaping works.

- The CEZ will remain off limits for all site plant and machinery unless fit for purpose ground protection is installed. Pedestrian traffic must be kept to an absolute minimum only permitted for the ground preparation and landscape installation works.

- Contractors will utilise existing or newly created areas of hand standing for vehicle access. Where plant and/or vehicles are to be used within the root protection areas of trees, fit for purpose ground protection or specific load spreading tyres on light weight vehicles will be used to avoid excessive compaction of the ground.

- The landscaping works will need to be undertaken in such a way as to avoid level changes, deep digging or mechanical rotovating. Excavation of planting pits with the RPA can cause serious harm the root system of retained trees. Planting pits within the RPA of retained trees will be excavated by hand to avoid roots greater than 25mm and masses of smaller roots.

- If any planting pits are required within the CEZ of retained trees, these will be dug by hand and with care avoiding roots greater than 25mm diameter or masses of smaller roots.

Figure 4:
Root severance as a result of planting within RPA

Planting Trees and Shrubs. Watson G. W. and Himelick E. B. 1997

- Where there are stumps of removed trees or shrubs, these will be ground out to 300mm below ground level and resulting holes filled with sharp horticultural sand to provide a stable base for laying of the new turf.

23.4 Any surface mulch will consists of well-composted material such as bark or wood chips. This is necessary to avoid potential nutrient loss from the soil, such as Nitrogen, as the mulch breaks down, as nutrient loss can be detrimental to the health and longevity of retained trees.

24.0 SITE MONITORING AND SUPERVISION

24.1 To ensure that the tree protection measures are maintained correctly and as per the approved documents (subject to any written approval for amendments where required), arboricultural supervision will be completed.

24.2 The client will be responsible for ensuring that the tree protection measures are set up and maintained correctly throughout the site works.

24.3 As part of this process, photographic records will be taken and kept by the client. An email copy of the photographs will be sent to the London Borough of Richmond upon Thames Council Tree Team and CBA Trees showing works during each phase and stage of on site works:

- This will take the form of the client signing off in a weekly logbook, that the agreed protection measures are in situ and fit for purpose as per the approved documents and as agreed by the representative of London Borough of Richmond upon Thames Council.
- The tree protection measures will be photographed and emailed to the Tree Team in the planning department with a request to visit site and confirm that the protection measures are acceptable. The London Borough of Richmond upon Thames Council representative will then sign off the protective measures:
- Following tree works
- Setting out and erection/establishment of tree protection measures for the café area
- Demolition of existing wall
- Excavation of foundations for new wall and café area
- Removal of existing hard surface area and creation of new path adjacent to T53-55
- Setting out and erection/establishment of tree protection measures for the play area
- Excavation and setting out of new play area access and path
- Creation and establishment of new landscaping works within the four quarters of woodland type groups surrounding Marble Hill House

24.4 CBA Trees will be retained throughout the project by the client to enable tree related concerns for the site to be discussed and acted upon quickly and efficiently to ensure that any tree related issue that may arise on site during the project can be dealt with, without detriment to the long term health of the trees.

Example pro-forma:

Date	Activity	Checked	Comments/ damage noted	By whom	Signed	Action taken
	Pre commencement meeting					
	Erection of protective measures					
	Tool box talk with appointed contractors advising on the importance of the protection of the trees					
	Weekly inspection of protective barriers					
	Assessment of foundation excavation adjacent to T51 and T52					
	Supervised removal of existing hard surface and minimal hand dig footpath adjacent to T53-55					
	Arboricultural assessment of any discovered roots >25mm diameter by CBA Trees prior to any further works commencing to western footpath via email and telephone					

25.0 REPORT DAMAGE TO TREES AND TREE PROTECTION BARRIERS

25.1 Should any damage be caused to trees noted for retention, either by the above works or as the result of any other action, the damage should be reported to the site supervisor immediately. The site supervisor shall report up the chain of responsibility to the retained consultant arboriculturist, or in the absence of such an appointment, to an appropriately qualified arboriculturist, to enable remedial measures to be implemented as necessary and as agreed with London Borough of Richmond Council Tree Officer.

25.2 Should damage occur to a protective barrier to impair its function in protecting trees, all work will cease near the damage, until the barrier has been returned to standard.

26.0 REMOVAL OF PROTECTIVE BARRIERS

26.1 When each development phase is complete, all drainage and service runs are in place, all site machinery has been removed and any landscaping for the principal area of the site has been implemented, the protective measures where they have been installed will be dismantled/removed.

26.2 This dismantling/removal of the tree protection measures must be undertaken with great care, and will need to be supervised to avoid heavy machinery being used

within the Root Protection Areas. Hoarding, scaffolding and other barrier materials will need to be removed from site immediately.

27.0 COMPLETION MEETING

27.1 Upon completion of all the works specified above, and in line with procedures also specified, the retained arboricultural consultant will invite London Borough of Richmond Council Tree Officer to meet on site, to discuss the project and to agree on any remedial works that may required.

28.0 CONCLUSIONS

28.1 There are development proposals to improve the existing café facilities at the park within the stable block area; improve the play facilities adjacent to the stable block and reinstate the landscaping around Marble Hill House and down towards the River Thames to re-establish part of the parks landscaping in line with the original landscaping of the House and grounds. The impact of these works have been assessed broadly in accordance with BS5837:2012 *"Trees in Relation to Design, Demolition and Construction – Recommendations"*.

28.2 The development works focus on three areas of the park:

- To improve the café facilities at the stable block area will require the removal of 2 (two) trees (T12 and T50, one a low grade tree and one a moderate grade tree), part of Group 3 (moderate grade) plus 1 (one) low grade tree (T56) which will be removed to improve the visual aspect of the more dominant trees in that area.

- The improvements to the play area adjacent to the stable block do not require any trees to be removed as a direct result of the works. One poor quality tree (T21) will be removed due to its condition.

- The reinstatement of the landscaping to the four quarters around Marble Hill House and the grounds down to the River Thames will remove 3 (three) individual trees (T47, T48 and T49), 22 (twenty two) trees noted within groups (for detail of tree numbers refer to Table 3 at Section 7) and 1 (one) group of trees (G5) along the boundary of the park and the Thames path. The management of the four quarters woodland/groups will involve the coppicing of Holly and Yew trees with the retention of the noted specimen trees.

28.3 Tree 14 (already noted by English Heritage for removal) and Trees 21, 46, G3.28 and G3.30 are recommended for removal for reasons of sound arboricultural management regardless of any development proposals. Therefore the removal of these poor quality trees should not have a bearing on this development proposal. If the client wishes G3.28 and G3.30 could be made safe and retained for habitat value as they stand within a group, subject to the acceptance of risk associated with the trees health and condition.

28.4 It is our opinion that the trees identified for retention can be afforded due respect and provided adequate protection throughout each stage and phase of works on site, ensuring their safe and healthy retention during the development process and have been fully considered throughout the design of the site development.

28.5 The landscaping reinstatement works will, in time, provide a landscape setting that is more in keeping within the original landscape plans for the House and its grounds. Given the extensive number of trees on site both individually and within groups the loss of the trees as detailed within this report will not have a detrimental impact on the treed nature of the grounds of Marble Hill House when considered with the detailed landscaping proposals that have been proposed by J&L Gibbons.

28.6 Provided the recommendations included within this report are strictly adhered to, CBA Trees believes the trees highlighted for retention within this report can be retained without undue stress on their long-term health.

29.0 CONTACT LIST

29.1 It is suggested that points of contact and lines of communication are established prior to commencement of the works on site including:-

29.2 It is advised that the site supervisor establishes their own listing of contact details It is suggested that points of contact and lines of communication are established prior to commencement of the works on site including:-

Client: Ndai Halisch, English Heritage Ndai.Halisch@english-heritage.org.uk	07584 591 442
Project Architects: Josh McCosh, Van Heyningen and Haward mailto:Josh@vhh.co.uk	020 3362 4488
Landscape Architects: Neil Davidson, J&L Gibbons neil@jlg-london.com	020 7226 1345
Project Engineer: Jane Cook, The Morton Partnership Jane.Cook@themortonpartnership.co.uk	0207324 7270
Project Arboricultural Consultant: Stefan Rose, CBA Trees srose@cbatrees.co.uk	02380 986229 07917138978
Tree Officer London Borough of Richmond Council trees@richmond.gov.uk	0208 891 1411
Site foreman/Supervisor	To be appointed

30.0 BIBLIOGRAPHY

- British Standard 5837:2012 –
  "Trees in Relation to Design, Demolition and Construction - Recommendations"
- British Standard 3998:2010 –
  "Recommendations for Tree Work"
- National Joint Utilities Group Publication Volume 4 –
  "Guidelines for the planning, installation and maintenance of utility services in proximity to trees"
- Wildlife and Countryside Act 1981
- Conservation of Habitats and Species Regulations 2010 (as amended)
- Town and Country Planning Acts


CB1

The Professional Arboricultural Consultancy

TREE SURVEY NOTES

This Tree Survey has been undertaken within the recommendations of British Standards 5837:2012 and current arboricultural best practice.

- Each tree has been numbered and, where instructed, for future identification on site, has been tagged using small durable metal or plastic tags.
- Due to variations of existing ground levels through the site, height dimensions are estimated and are given in metres. Accurate heights, measured with the aid of optical instruments can be provided where instructed.
- Trunk/stem diameters are measured in mm at 1.5 metres above ground level, using a standard measuring tape as defined by British Standards, unless otherwise stated.
- Estimated branch spread is taken in metres from the centre of the trunk, at the four cardinal points of a compass, to achieve an accurate representation of the crown shape which will be recorded on the tree survey plan.
- An assessment of a tree's age classification is made in terms of its maturity within the site's landscape and defined as:

  Y = young trees
  SM = semi-mature trees
  EM = early mature trees
  M = mature trees
  OM = over-mature trees

- An assessment of a tree's physiological condition is defined as:

  Good = fully functioning biological system showing average vitality i.e. normal bud growth, leaf size, crown density and wound closure
  Fair = fully functioning biological system showing below average vitality i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure
  Poor = a biological system with limited functionality showing significantly below average vitality i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure
  Dead = dead

- An assessment of a tree's structural condition is defined as:

  Good = no significant structural defects
  Fair = structural defects which could be alleviated through remedial tree surgery or management practices
  Poor = structural defects which cannot be alleviated through tree surgery or management practices
  Dead = dead

- An assessment of a tree's future life expectancy is defined as: **<10, 10+, 20+ or 40+ years.**

Categorisation of Trees

The category for each tree is assessed using the recommendations of BS5837:2012. The assessment has not considered any site-specific development proposals, but will have considered any changes on or off-site which may have an effect on the conditions surrounding the surveyed trees.

The trees have been classified into one of the following categories (and one or more sub-categories [this will however not increase the value of the tree]) and are indicated on the associated drawings by colours as indicated.

Category U				Identification colour on plan
Trees in such a condition 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 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 • 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			**DARK RED**
Category A	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
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	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
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 down-graded 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 value or other cultural value	**MID BLUE**
Category C	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
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**

Clients are advised that Tree Surveys are a basic data collection exercise and record of tree condition at the time of survey. This will identify any visible signs of ill-health or major defects, advising a further detailed investigation where appropriate. This will most often take the form of a request for either "*full ground level inspection"* or "*climbing inspection required".* There may also be a further reference to the need for "*decay detection equipment"* to aid diagnosis. A tree survey does not include a comprehensive schedule or specification of remedial tree works, but may contain a guide to the work which might be undertaken by a prudent tree owner, purely for reasons of health and safety.

A Tree Survey should not be confused with a Tree Inspection or Arboricultural Implication Assessment, which are totally separate exercises.

CBA10677

	BS5837:2012 TREE SURVEY REPORT	
	Site:	Marble Hill House and Park
	Date:	25 & 27 October & 02 November 2016
	Consultant:	Stefan Rose *BSc (Hons), TechCert (Arbor.A)* James Fuller *FdSc.Arb, BTEC Nat.Dip.Arb, TechArbor.A*
	Tagged:	No

Notes:

1. It may be advised that some trees should have the ivy removed to enable a re-survey to be carried out. This would also alleviate the tree from becoming suppressed; carrying additional weight that increases the chance of windthrow due to a larger dense crown area; and only receiving restricted light. Unless otherwise stated, in order to prevent regrowth, it is only necessary to remove a 300mm section of ivy and clear around the base.
2. It may be advised that it was only possible to estimate the diameter of some trees because of ivy smothering, dense vegetation, or trees located off-site with no access.
3. The estimated remaining contribution in years, and the tree grading category have been calculated for the current situation and may alter where further investigation works are advised.
4. Some trees or groups may have been given an interim grade. The reason for the interim grading is addressed in the timescales given as this may have a bearing on health and safety and/or any development proposals.
5. Tree Groups have been assessed with estimated and representative data.
6. This is not a Tree Works Schedule. Any preliminary management recommendations are listed in the interests of health and safety and should be carried out by a prudent tree owner.
7. Any management recommendations are suggested for reasons of health and safety only, regardless of development proposals at this stage. However, the defects requiring remedial tree surgery are by their very nature potential wildlife habitats, including protected species which needs consideration prior to any tree surgery works commencing.
8. a) At this stage the Root Protection Area (RPA) information is for your guidance and ongoing discussion purposes only as it assumes that all but the 'U' grade trees will be retained, which may not be the case.
   b) For all single stem trees with a stem diameter greater than 1250mm, and multi-stem trees with a stem diameter greater than 1500mm, the calculated RPA has been capped at 707m2 in accordance with Section 4.6.1 of BS5837.2012.
9. Trees marked with * are indicatively plotted on the associated Tree Survey Plan.

TREE PRESERVATION ORDER/CONSERVATION AREA:

CBA Trees has been instructed to investigate whether trees on or adjacent to the site are protected by a Tree Preservation Order or located within a Conservation Area and Richmond Council has confirmed that the site lies within the CA8 Twickenham Riverside Conservation Area but there are no Tree Preservation Orders protecting trees on the site.

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
1	Tree of Heaven *Ailanthus altissima*	9	S	220	22	2.6	N 4 E 4 S 4 W 3	N 4 E 4 S 4 W 4	Semi-mature	Good	Structural Condition - Fair Developing tree Old pruning wounds Minor deadwood in crown Bark wound on north side of trunk at 1m above ground level occluding	None required at time of survey	20+	C1+2
2	Common Hornbeam *Carpinus betulus*	5	S	75	3	0.9	N 1 E 1.5 S 1 W 1.5	N 2 E 2 S 2 W 2	Young	Good	Structural Condition - Fair Old pruning wounds Epicormics on trunk Developing tree	None required at time of survey	40+	C2+1
3	Pedunculate Oak *Quercus robur*	5	S	150	10	1.8	N 3 E 3 S 2.5 W 3	N 1.5 E 1.5 S 1.5 W 1.5	Young	Good	Structural Condition - Fair Bifurcated at 2.5m above ground level Tight forks with included bark Epicormics in crown Developing tree Low hanging branches Minor deadwood in crown Old pruning wounds	Remove secondary leader	40+	B2+1
4	Pedunculate Oak *Quercus robur*	3	S	80	3	1.0	N 3 E 2.5 S 2.5 W 2.5	N 1 E 1 S 1 W 1	Young	Good	Structural Condition - Good Developing tree Low hanging branches Old pruning wounds	None required at time of survey	40+	C1+2
5	Silver Birch *Betula pendula*	5	S	100	5	1.2	N 2 E 2 S 2.5 W 2.5	N 1 E 1 S 1 W 1	Young	Good	Structural Condition - Good Developing tree Low hanging branches Good shape and form	None required at time of survey	40+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
6	Sweet Chestnut *Castanea sativa*	19	S	930	391	11.2	N 8 E 8 S 10 W 8	N 1.5 E 2 S 1.5 W 2	Mature	Good	Structural Condition - Good Epicormics on trunk and in crown Low hanging branches Minor deadwood in crown Old pruning wounds	None required at time of survey	20+	B1+2
7	Pedunculate Oak *Quercus robur*	18	S	970	426	11.6	N 10 E 9 S 11 W 10	N 1.5 E 2 S 2 W 2	Mature	Good	Structural Condition - Good Large surface roots Exposed surface roots Epicormics in crown Major deadwood in crown	Remove major deadwood	40+	A1
8	Pedunculate Oak *Quercus robur*	16	S	1000	452	12.0	N 7.5 E 9 S 8 W 9	N 4 E 5 S 5 W 5	Mature	Good	Structural Condition - Fair Bifurcated at 5.0m above ground level Epicormics in crown Major deadwood in crown Old pruning wounds Bark wounds Branch tear out wounds and wildlife holes on main scaffold branches on trunk	Climbing inspection Remove major deadwood	20+	B1+2 Interim
9	Robinia *Robinia pseudoacacia*	15	S	990	443	11.9	N 9 E 3 S 4 W 6	N 4 E 3 S 6 W 3	Mature	Fair	Structural Condition - Fair Major deadwood in crown Old pruning wounds Previously crown reduced Crown shape distorted due to group pressure Dessicated fungal fruiting body at base Bifurcated at 3m above ground level	None required at time of survey	10+	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
10	Robinia *Robinia pseudoacacia*	21	S	830	312	10.0	N 5 E 5 S 4 W 4	N 3 E 3 S 3 W 3	Mature	Good	Structural Condition - Fair Previously crown reduced Old pruning wounds Minor deadwood in crown Epicormics on trunk and in crown Crown shape distorted due to group pressure	None required at time of survey	10+	C1+2
11	Atlas Cedar *Cedrus atlantica Blue Atlas Cedar*	14	S	620	174	7.4	N 8 E 8.5 S 8 W 8	N 1 E 1 S 1 W 1	Early Mature	Good	Structural Condition - Fair Minor deadwood in crown Low hanging branches Numerous branch tears on trunk Upper crown shape distorted due to lost branches	None required at time of survey	20+	B1
12	Common Horse Chestnut *Aesculus hippocastanum*	21	S	990	443	11.9	N 7 E 7 S 8 W 7	N 5 E 6 S 6 W 6	Mature	Fair	Structural Condition - Fair Epicormics on trunk and in crown Old pruning wounds Previously crown reduced Bifurcated at 13m above ground level Minor deadwood in crown	None required at time of survey	20+	B1+2
13	Sycamore *Acer pseudoplatanus*	20	S	1000	452	12.0	N 4 E 5 S 5 W 3	N 8 E 7 S 8 W 8	Mature	Fair	Structural Condition - Fair Basal suckers Epicormics on trunk and in crown Old pruning wounds Previously crown reduced Crown shape distorted Old pruning wounds on trunk and in crown Large wound on trunk to south-west side at 4m above ground level with decay present	Climbing inspection of large wound	10+	C1+2 Interim

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
14	Robinia *Robinia pseudoacacia*	14	S	860	-	-	N 6 E 7 S 7 W 7	N 4 E 4 S 4 W 4	Early Mature	Good	Structural Condition - Poor Minor deadwood in crown Old pruning wounds Polyporous squimosus fungal fruiting bodies on trunk Branch tears in crown	Advise removal	<10	U
15	Flowering Cherry *Prunus sp.*	4	S	200 140	18	2.4	N 3.5 E 3 S 3 W 3	N 2 E 2 S 2 W 2	Early Mature	Good	Structural Condition - Fair Bifurcated at 1.2m above ground level Bark wounds Low hanging branches Minor deadwood in crown Old pruning wounds Grafted at 1.0m above ground level	None required at time of survey	20+	B1+2
16	Common Yew *Taxus baccata*	11	S	910	375	10.9	N 6.5 E 6 S 6.5 W 6	N 3 E 2.5 S 2.5 W 2.5	Mature	Good	Structural Condition - Good Epicormics in crown Minor deadwood in crown Ground compaction around base	None required at time of survey	40+	A1+2
17	Common Lime *Tilia europaea*	19	S	980	434	11.8	N 6 E 4 S 8 W 7	N 2 E 3 S 1.5 W 1.5	Mature	Good	Structural Condition - Good Large buttress roots Minor deadwood in crown Low hanging branches Crown shape distorted due to group pressure	None required at time of survey	20+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
18	Common Lime *Tilia europaea*	16	S	970	426	11.6	N 5 E 9 S 9 W 2	N 2 E 2 S 1 W 2	Mature	Good	Structural Condition - Fair Bifurcated at 2.0m above ground level Basal suckers Epicormics on trunk and in crown Low hanging branches Minor deadwood in crown Old pruning wounds Trunk shape distorted due to group pressure Previously crown reduced Leans east	None required at time of survey	10+	C1+2
19	Flowering Cherry *Prunus sp.*	4	S	190	16	2.3	N 3 E 3 S 3 W 3	N 2 E 2 S 2 W 2	Semi-mature	Good	Structural Condition - Good Multi-stemmed at 2m above ground level	None required at time of survey	20+	C1
20	Flowering Cherry *Prunus sp.*	6	S	180	15	2.2	N 3 E 2 S 3 W 2	N 2 E 2 S 2 W 2	Semi-mature	Good	Structural Condition - Fair Minor deadwood in crown Tight forks with included bark Multi-stemmed at 1.75m above ground level	None required at time of survey	20+	C1+2
21	Common Elder *Sambucas nigra*	6	MS x 6	120	-	-	N 4 E 0.5 S 3 W 1.5	N 2 E 2 S 2 W 2	Semi-mature	Fair	Structural Condition - Poor Multi-stemmed at ground level Bark necrosis on stems	Advise removal	<10	U
22	Sycamore *Acer pseudoplatanus*	11	MS	240 250	54	4.2	N 5 E 3.5 S 4.5 W 2	N 2 E 2 S 2 W 2	Semi-mature	Good	Structural Condition - Fair Bifurcated at 1.0m above ground level Crown shape distorted due to group pressure Epicormics in crown Low hanging branches Minor deadwood in crown Weighted east	None required at time of survey	10+	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
23	Pedunculate Oak *Quercus robur*	8	S	350	55	4.2	N 5.5 E 5.5 S 5.5 W 1	N 2 E 1.5 S 1.5 W 2	Semi-mature	Good	Structural Condition - Good Crown shape distorted due to group pressure Minor deadwood in crown Multi-stemmed at 2m above ground level	None required at time of survey	40+	B1+2
24	Common Ash *Fraxinus excelsior*	13	S	330	49	4.0	N 6 E 4 S 5 W 5	N 3 E 3 S 2 W 2	Semi-mature	Good	Structural Condition - Good Crown shape distorted due to group pressure Low hanging branches Minor deadwood in crown	None required at time of survey	20+	B1+2
25	Flowering Cherry *Prunus sp.*	4	S	400	72	4.8	N 6 E 4.5 S 8 W 7	N 2 E 2 S 1.5 W 2	Early Mature	Good	Structural Condition - Fair Large buttress roots Minor deadwood in crown Crown shape distorted due to group pressure Low hanging branches Old pruning wounds Multi-stemmed at 1.5m above ground level	None required at time of survey	10+	C1+2
26	Holm Oak *Quercus ilex*	9	S	530	127	6.4	N 7 E 7 S 7 W 7	N 2 E 2 S 2 W 2	Early Mature	Good	Structural Condition - Fair Epicormics in crown Minor deadwood in crown Old pruning wounds Multi-stemmed at 4.0m above ground level	None required at time of survey	20+	B1+2
27	Red Oak *Quercus rubra*	15	S	830	312	10.0	N 9 E 9 S 10 W 9	N 4 E 2 S 2 W 2	Mature	Good	Structural Condition - Good Large buttress roots Old pruning wounds Minor deadwood in crown	None required at time of survey	40+	A1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
28	Common Walnut *Juglans regia*	7	S	350	55	4.2	N 6 E 6 S 6.5 W 6	N 2 E 2 S 2 W 2	Semi-mature	Good	Structural Condition - Good Bifurcated at 3.0m above ground level Low hanging branches Minor deadwood in crown Old pruning wounds	None required at time of survey	20+	B1+2
29	London Plane *Platanus x hispanica*	22	S	1320	707	15	N 11 E 7 S 12 W 12	N 2 E 4 S 1.5 W 1.5	Mature	Good	Structural Condition - Good Major deadwood in crown Low hanging branches Old pruning wounds	Remove deadwood	40+	A1+2
30	London Plane *Platanus x hispanica*	14	S	1220	673	14.6	N 9 E 8 S 9 W 7	N 4 E 4 S 3 W 4	Mature	Fair	Structural Condition - Fair Crown shape distorted due to group pressure Major deadwood in crown Old pruning wounds Cavity at base on east side	Full ground level inspection using decay detection equipment Remove major deadwood	20+	B1+2 Interim
31	Honey Locust *Gleditsia triacanthos*	14	S	570	147	6.8	N 8 E 8 S 7 W 9	N 3 E 2.5 S 2.5 W 2	Mature	Good	Structural Condition - Fair Bifurcated at 3.5m above ground level Major deadwood in crown Old pruning wounds Mechanical damage to surface roots	None required at time of survey	20+	B1+2
32	Turkey Oak *Quercus cerris*	15	S	640	185	7.7	N 7.5 E 9 S 9 W 10.5	N 3 E 4 S 2 W 3	Early Mature	Good	Structural Condition - Fair Exposed surface roots Tight forks with included bark Major deadwood in crown Crown shape distorted due to group pressure Bifurcated at 2m above ground level Bark wounds on under side of branches to west	Remove major deadwood	20+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
33	London Plane *Platanus x hispanica*	20	S	1750	707	15	N 11 E 9 S 11 W 10	N 2 E 4 S 3 W 5	Mature	Good	Structural Condition - Good Boundary line tree Ivy on trunk Major deadwood in crown Crown shape distorted due to group pressure	Remove major deadwood	40+	A1+2
34	London Plane *Platanus x hispanica*	22	S	1650	707	15	N 17 E 14 S 11 W 6	N 3 E 3 S 4 W 3	Mature	Good	Structural Condition - Fair Crown shape distorted due to group pressure Epicormics in crown Minor deadwood in crown Old pruning wounds Leans and weighted east	None required at time of survey	40+	B1+2
35	Common Ash *Fraxinus excelsior*	20	S	1190	641	14.3	N 8 E 11.5 S 11 W 7	N 4 E 3 S 2 W 6	Mature	Good	Structural Condition - Fair Boundary line tree Previously pollarded Minor deadwood in crown Crown shape distorted due to group pressure Branch tears in crown Cavities in crown	None required at time of survey	20+	B1+2
36	London Plane *Platanus x hispanica*	16	S	2000	707	15	N 17 E 15 S 14 W 13	N 0 E 1 S 2 W 0	Mature	Good	Structural Condition - Good Minor deadwood in crown Low hanging branches Boundary line tree	None required at time of survey	40+	A1+2
37	Silver Maple *Acer saccharinum*	18	S	1210	662	14.5	N 15 E 16 S 5 W 9	N 0 E 2 S 3 W 2	Mature	Good	Structural Condition - Fair Trunk and crown shape distorted Low hanging branches Ganoderma fungal fruiting body at base on south-east side Bifurcated at 3m above ground level	Full ground level inspection using decay detection equipment	20+	B1+2 Interim

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
38	London Plane *Platanus x hispanica*	18	S	1650	707	15	N 13 E 13 S 12 W 16	N 2 E 2 S 2 W 1.5	Mature	Good	Structural Condition - Good Major deadwood in crown Low hanging branches Old pruning wounds Dead hanging branch over footpath on south-east side	Remove major deadwood	40+	A1+2
39	Black Walnut *Juglans nigra*	25	S	1900	707	15	N 18 E 18 S 14 W 17	N 0.5 E 0.5 S 0.5 W 1.5	Over Mature	Good	Structural Condition - Fair Branch tearout wound Old pruning wounds Major deadwood in crown Fenced off area around tree Cavities in crown Cobra bracing in crown	None required at time of survey	40+	A1+3
40	Common Lime *Tilia europaea*	8	S	310	43	3.7	N 5 E 3 S 4 W 4.5	N 1 E 1.5 S 2 W 1.5	Semi-mature	Good	Structural Condition - Fair Bifurcated at 3.0m above ground level Epicormics in crown Low hanging branches Minor deadwood in crown	None required at time of survey	10+	C1+2
41	Common Lime *Tilia europaea*	21	S	700	222	8.4	N 9 E 5 S 6 W 7	N 1 E 1 S 3 W 2	Early Mature	Good	Structural Condition - Fair Bifurcated at 5.0m above ground level Epicormics on trunk and in crown Crown shape distorted due to group pressure Previously crown reduced Old pruning wounds Minor deadwood in crown Low hanging branches	None required at time of survey	20+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
42	Common Lime *Tilia europaea*	21	S	810	297	9.7	N 10 E 6 S 8 W 9	N 1.5 E 2 S 2 W 1.5	Mature	Good	Structural Condition - Good Crown shape distorted due to group pressure Minor deadwood in crown Low hanging branches Old pruning wounds Previously crown reduced Epicormics on trunk Branch tears in crown Dead hanging branch in crown on east side over footpath	Remove major deadwood	20+	B1+2
43	Pedunculate Oak *Quercus robur*	21	S	1470	707	15	N 8 E 8 S 12.5 W 10	N 0 E 0.5 S 0 W 0	Mature	Good	Structural Condition - Fair Major deadwood in crown Branch tear Old pruning wounds Low hanging branches Large cavity at base on south-east side Wildlife holes throughout Dessicated fungi in crown to south around wildlife holes	Full ground level inspection using decay detection equipment	40+	A1 Interim
44	Common Lime *Tilia europaea*	15	S	470	100	5.6	N 5 E 5 S 5 W 5.5	N 1.5 E 1 S 1.5 W 1.5	Early Mature	Good	Structural Condition - Fair Epicormics on trunk and in crown Bifurcated at 5.0m above ground level Low hanging branches Minor deadwood in crown Old pruning wounds	None required at time of survey	20+	B1+2
45	Common Ash *Fraxinus excelsior*	14	S	480	104	5.8	N 6 E 6 S 6 W 7	N 2 E 2 S 2 W 2	Early Mature	Good	Structural Condition - Fair Bifurcated at 4.0m above ground level Epicormics in crown Minor deadwood in crown Low hanging branches Old pruning wounds	None required at time of survey	20+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
46	Birch 'Youngii' *Betula youngii*	3	S	230	-	-	N 2.5 E 1 S 4 W 5	N 1.5 E 2 S 2 W 1	Dead	Dead	Structural Condition - Fair Dead tree Trunk and crown shape distorted	Advise removal	<10	U
47	Common Yew *Taxus baccata*	7	MS	200 170 250 200 190	78	5.0	N 5 E 5 S 3 W 4	N 2 E 2 S 3 W 1.5	Early Mature	Good	Structural Condition - Fair Multi stemmed at ground level Epicormics on trunk and in crown Old pruning wounds Minor deadwood in crown Low hanging branches Wall to south	None required at time of survey	10+	C1+2
48	Holm Oak *Quercus ilex*	20	S	820	304	9.8	N 8 E 6 S 11 W 6	N 3 E 5 S 4 W 4	Mature	Good	Structural Condition - Good Crown shape distorted Minor deadwood in crown Old pruning wounds Multi-stemmed at 4.0m above ground level Previously crown reduced on east side away from main house	None required at time of survey	40+	B1
49	Birch 'Youngii' *Betula youngii*	3	S	340	52	4.1	N 3.5 E 6.5 S 5 W 4.5	N 0 E 0 S 0 W 0	Early Mature	Good	Structural Condition - Good Crown shape distorted Low hanging branches Old pruning wounds Multi-stemmed at 2.0m above ground level	None required at time of survey	20+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
50	Common Elder *Sambucas nigra*	4	MS	120 100 100 160 130	35	3.3	N 3 E 5 S 2 W 1	N 2 E 2 S 2 W 2	Semi-mature	Fair	Structural Condition - Fair Minor deadwood in crown Poor quality tree Poor shape and form Multi-stemmed at ground level Growing in car park from base of wall Stem and crown shape distorted Biased to east	None required at time of survey	10+	C1
51*	Common Yew *Taxus baccata*	7	S	240	26	2.9	N 3 E 3 S 3 W 3	N 2 E 2 S 2 W 2	Semi-mature	Good	Structural Condition - Good Offsite tree Old pruning wounds Crown shape distorted due to group pressure Epicormics on trunk and in crown Low hanging branches Minor deadwood in crown	None required at time of survey	20+	B1+2
52*	Sycamore *Acer pseudoplatanus*	10	S	550	137	6.6	N 4 E 4 S 4 W 4	N 4 E 4 S 3 W 3	Early Mature	Good	Structural Condition - Fair Offsite tree Unable to verify health and safety due to no access Boundary line tree Minor deadwood in crown Old pruning wounds Previously crown reduced Wall between tree and site	Gain access and resurvey within 1 month	20+	C1+2 Interim

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
53	Common Hornbeam *Carpinus betulus*	13	S	490	109	5.9	N 6.5 E 4 S 4.5 W 8	N 4.5 E 4 S 3 W 4	Early Mature	Good	Structural Condition - Fair Crown shape distorted due to group pressure Epicormics on trunk and in crown Low hanging branches Major deadwood in crown Bifurcated at 4.5m above ground level Old pruning wounds Weighted west	Remove major deadwood	20+	C1+2
54	Common Hornbeam *Carpinus betulus*	18	S	620	174	7.4	N 6 E 2 S 8 W 7	N 6 E 5 S 5 W 5	Early Mature	Good	Structural Condition - Good Ivy on trunk Crown shape distorted due to group pressure Minor deadwood in crown Old pruning wounds Previously crown reduced	None required at time of survey	40+	B1+2
55	Common Hornbeam *Carpinus betulus*	18	S	570	147	6.8	N 7 E 7 S 4 W 4	N 6 E 4 S 5 W 4	Early Mature	Good	Structural Condition - Good Epicormics on trunk Old pruning wounds Crown shape distorted due to group pressure Minor deadwood in crown Multi-stemmed at 5.0m above ground level	None required at time of survey	40+	B1+2
56	Common Hornbeam *Carpinus betulus*	9	S	330	49	4.0	N 4 E 4 S 3 W 5	N 4 E 3 S 3 W 3	Semi-mature	Fair	Structural Condition - Fair Crown shape distorted due to group pressure Epicormics on trunk and in crown Previously crown reduced Old pruning wounds	None required at time of survey	10+	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
57	Common Hornbeam *Carpinus betulus*	17	S	550	137	6.6	N 6 E 6 S 6 W 5	N 5 E 2.5 S 4 W 5	Early Mature	Good	Structural Condition - Fair Bifurcated at 4.5m above ground level Tight forks with included bark Old pruning wounds Minor deadwood in crown	None required at time of survey	20+	B1+2
58	Common Horse Chestnut *Aesculus hippocastanum*	18	S	760	261	9.1	N 5 E 7 S 8 W 7	N 2 E 2 S 2 W 2	Early Mature	Fair	Structural Condition - Fair Part of linear group Crown shape distorted due to group pressure Old pruning wounds Bleeding canker on stem Guignadia and camararia on foliage	None required at time of survey	20+	B1+2
59	Common Horse Chestnut *Aesculus hippocastanum*	19	S	1110	557	13.3	N 6 E 8 S 9 W 9	N 5 E 4 S 3 W 4	Mature	Fair	Structural Condition - Fair Bifurcated at 5.0m above ground level Epicormics on trunk and in crown Old pruning wounds Previously crown reduced Tight forks with included bark Minor deadwood in crown	None required at time of survey	10+	C1+2
60	Common Horse Chestnut *Aesculus hippocastanum*	16	S	580	152	7.0	N 3 E 5 S 6 W 5	N 4 E 2 S 2 W 2	Early Mature	Fair	Structural Condition - Fair Part of linear group Old pruning wounds Crossing branches Crown shape distorted due to group pressure Minor deadwood in crown Multi-stemmed at 2m above ground level	None required at time of survey	20+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
61	Common Walnut *Juglans regia*	17	S	580	152	7.0	N 10 E 12 S 11 W 5	N 1 E 1 S 1 W 1	Early Mature	Good	Structural Condition - Good Crown shape distorted due to group pressure Low hanging branches Minor deadwood in crown Suppressed by T39	None required at time of survey	40+	A1+2
62	Common Lime *Tilia europaea*	12	S	500	113	6.0	N 6 E 5 S 6 W 3	N 2 E 2 S 2 W 2	Early Mature	Good	Structural Condition - Good Epicormics on trunk and in crown Crown shape distorted due to group pressure Minor deadwood in crown Old pruning wounds Car park edge tree	None required at time of survey	20+	B1+2
63	Common Lime *Tilia europaea*	14	S	570	147	6.8	N 5 E 3 S 5 W 5	N 3 E 2 S 2 W 2	Early Mature	Good	Structural Condition - Good Epicormics on trunk and in crown Major deadwood in crown Car park edge tree	Remove major deadwood	40+	B1+2
64	Norway Maple *Acer platanoides*	12	S	540	132	6.5	N 4 E 5 S 5.5 W 5	N 5 E 4 S 3 W 3	Early Mature	Fair	Structural Condition - Fair Bark wound Old pruning wounds Previously crown reduced Growing within car park Roots lifting tarmac Bifurcated at 4.0m above ground level Top previously removed	None required at time of survey	10+	C1
65	Turkey Oak *Quercus cerris*	20	S	1480	707	15	N 13 E 12 S 13 W 13	N 1 E 1 S 1 W 1	Mature	Good	Structural Condition - Good Large buttress roots Major deadwood in crown Low hanging branches Old pruning wounds Epicormics in crown	Remove major deadwood	40+	A1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
66	Common Lime *Tilia europaea*	24	S	1070	518	12.8	N 7 E 9 S 7 W 8	N 4 E 5 S 5 W 4	Mature	Good	Structural Condition - Fair Basal suckers Epicormics on trunk and in crown Low hanging branches Minor deadwood in crown Old pruning wounds	None required at time of survey	20+	B1+2
Grp 1	Lime Pedunculate Oak Ash Holly Tree of Heaven Hornbeam False Acacia Beech	15	S	See below	See below	See below	N - E - S - W -	N - E - S - W -	Early Mature	Good	Structural Condition - Fair Crown shape distorted due to group pressure Epicormics on trunk and in crown Low hanging branches Minor deadwood in crown Old pruning wounds Tall and etiolated due to group pressure Trunk shape distorted due to group pressure	None required at time of survey	20+	B1+2
G1.1	Ash	-	S	390	69	4.7	-	-	Semi-mature	-	Major deadwood	-	-	B1+2
G1.2	Common Horse Chestnut	-	S	820	304	9.8	-	-	Early Mature	-	Guignadia and Camararia on foliage Old pruning wounds in crown Crown shape distorted	-	-	B1+2
G1.3	Common Hornbeam	-	S	530	127	6.4	-	-	Early Mature	-	Trunk and crown shape distorted Minor deadwood Low hanging branches	-	-	B1+2
G1.4	Common Hornbeam	-	S	430	84	5.2	-	-	Early Mature	-	Bark wounds on trunk Crown shape distorted Low hanging branches	-	-	B1+2
G1.5	Manna Ash	-	S	420	80	5.0	-	-	Early Mature	-	Low hanging branches	-	-	B1+2
G1.6	Lombardy Poplar	-	S	590	157	7.1	-	-	Early Mature	-	-	-	-	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G1.7	Lombardy Poplar	-	S	270	33	3.2	-	-	Semi-mature	-	-	-	-	C1+2
G1.8	Norway Maple	-	S	240	26	2.9	-	-	Semi-mature	-	Low hanging branches	-	-	C1+2
G1.9	Sweet Chestnut	-	S	1270	707	15	-	-	Mature	-	Previously topped Basal suckers and epicormic growth form crown Major bark wounds on trunk	Reduce canopy spread within 3 years	-	C1+2+3
G1.10	Pedunculate Oak	-	S	610	168	7.3	-	-	Early Mature	-	-	-	-	B1+2
G1.11	Pedunculate Oak	-	S	510	118	6.1	-	-	Early Mature	-	Low hanging branches Multi-stemmed at 3.0m above ground level m	-	-	B1+2
G1.12	Sycamore	-	S	560	142	6.7	-	-	Early Mature	-	Root severance on north side Previously pollarded	-	-	C1+2
G1.13	Holm Oak	-	S	470	100	5.6	-	-	Early Mature	-	Trunk and crown shape distorted Exudate on trunk to south side	-	-	B1+2
G1.14	Sycamore	-	S	570	147	6.8	-	-	Mature	-	-	-	-	C1+2
G1.15	Sycamore	-	S	590	157	7.1	-	-	Early Mature	-	Crown shape distorted	-	-	C1+2
G1.16	Common Holly	-	S	270	33	3.2	-	-	Early Mature	-	Leans east Bifurcated at 2.1m above ground level	-	-	C1+2
G1.17	Common Holly	-	MS	310 360	102	5.7	-	-	Mature	-	Bifurcated at ground level Tight forks with included bark	-	-	C1+2
G1.18	Common Horse Chestnut	-	S	760	261	9.1	-	-	Early Mature	-	Exuate on trunk Bifurcated at 2.5m Guignadia and camararia on foliage	-	-	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G1.19	Common Ash	-	S	460	96	5.5	-	-	Early Mature	-	Branch tears in crown Low hanging branches Minor deadwood Old pruning wounds	-	-	C1+2
G1.20	Pedunculate Oak	-	S	760	261	9.1	-	-	Mature	-	Major deadwood in crown	Remove deadwood	-	B1+2
G1.21	Sycamore	-	S	680	209	8.2	-	-	Early Mature	-	Large buttress roots Cavities in trunk at 5.0m, 7.0m and 9.0m above ground level on north-west side Previously topped	-	-	C1+2
G1.22	Common Horse Chestnut	-	S	680	209	8.2	-	-	Early Mature	-	Branch tear on trunk Desire line under canopy Guignadia and camararia on foliage	-	-	C1+2
G1.23	Common Horse Chestnut	-	S	570	147	6.8	-	-	Early Mature	-	Guignadia and camararia on foliage Low hanging branches	-	-	B1+2
G1.24	Common Horse Chestnut	-	S	800	290	9.6	-	-	Early Mature	-	Bifurcated at 3.0m above ground level Guignadia and camararia on foliage	-	-	C1+2
G1.25	Common Horse Chestnut	-	S	740	248	8.9	-	-	Early Mature	-	Guignadia and camararia on foliage	-	-	C1+2
G1.26	Flowering Cherry	-	S	230	24	2.8	-	-	Semi-mature	-	-	-	-	B1+2
G1.27	Common Lime	-	S	910	375	10.9	-	-	Mature	-	Basal suckers Epicormics on trunk and in crown Old pruning wounds on trunk Deadwood in crown	Remove deadwood	-	C2+1
G1.28	Ash	-	S	300	41	3.6	-	-	Semi-mature	-	Bifurcated at 7.0m above ground level	-	-	B1+2
G1.29	Ash	-	S	460	96	5.5	-	-	Early Mature	-	Bifurcated at 2m above ground level Old pruning wounds on trunk Deadwood in crown	-	-	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G1.30	Common Ash	-	S	280	35	3.4	-	-	Semi-mature	-	Desire line to north-east Bifurcated at 2.0m above ground level Low hanging branches	-	-	C1+2
G1.31	Variegated Holly	-	S	400	72	4.8	-	-	Mature	-	Bifurcated at 5.0m above ground level	-	-	C1+2
G1.32	Common Yew	-	S	680	209	8.2	-	-	Semi-mature	-	Mechanical damage to exposed surface roots Bark wound on trunk Bifurcated at 1.6m above ground level Low hanging branches	-	-	B1+2
G1.33	Common Yew	-	S	340	52	4.1	-	-	Early Mature	-	Low hanging branches	-	-	B1+2
G1.34	Sycamore	-	S	670	203	8.0	-	-	Early Mature	-	Large buttress roots Desire line to south Low hanging branches	-	-	B1+2
G1.35	Sycamore	-	S	370	62	4.4	-	-	Early Mature	-	Low hanging branches	-	-	C1+2
G1.36	Common Beech	-	S	930	391	11.2	-	-	Mature	-	Low hanging branches Old pruning wounds in crown Bifurcated at 8.0m above ground level	-	-	B1+2
G1.37	Sycamore	-	S	760	261	9.1	-	-	Early Mature	-	Trunk and crown shape distorted Bifurcated at 4m above ground level Cavities in crown	-	-	B1+2
G1.38*	Sweetgum	-	S	310	43	3.7	-	-	Semi-mature	-	Trunk shape distorted Low hanging branches	-	-	C1+2
G1.39	Whitebeam	-	S	400	72	4.8	-	-	Early Mature	-	Low hanging branches	-	-	B1+2
G1.40	Pedunculate Oak	-	S	100	5	1.2	-	-	Young	-	Developing tree	-	-	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G1.41	Sycamore	-	MS	90 70	6	1.4	-	-	Young	-	Basal suckers Low hanging branches Bifurcated at 1.2m above ground level Squirrel damage in crown	-	-	C1+2
G1.42	Highclere Holly	-	S	240	26	2.9	-	-	Semi-mature	-	-	-	-	C1+2
G1.43	Robinia	-	S	230	24	2.8	-	-	Semi-mature	-	Trifurcated at 4.5m above ground level	-	-	C1+2
G1.44*	Robinia	-	S	310	43	3.7	-	-	Semi-mature	-	Trifurcated at 1.6m above ground level Low hanging branches	-	-	C1+2
G1.45	Common Hornbeam	-	S	510	118	6.1	-	-	Mature	-	Low hanging branches Leans north-east Bark wound at base on north-west side	-	-	C1+2
G1.46	Common Holly	-	S	440	88	5.3	-	-	Mature	-	-	-	-	C1+2
G1.47	Common Lime	-	S	770	268	9.2	-	-	Mature	-	Low hanging branches Epicormics on trunk and in crown Large old pruning wounds on trunk	-	-	B1+2
G1.48	Common Holly	-	MS	320 200	64	4.5	-	-	Mature	-	Bifurcated at 1m above ground level Low hanging branches	-	-	C1+2
G1.49*	Robinia	-	MS	30 40	1	0.6	-	-	Young	-	Bifurcated at ground level Natural regeneration	-	-	C1
G1.50	Tree of Heaven	-	S	80	3	1.0	-	-	Young	-	Developing tree	-	-	C1
G1.51	Robinia	-	S	100	5	1.2	-	-	Young	-	Bifurcated at 2.5m above ground level Tight forks with included bark	-	-	C1
G1.52	Common Elder	-	MS x 7	120	46	3.8	-	-	Semi-mature	-	Multi-stemmed at ground level	-	-	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G1.53	Robinia	-	MS	380 400	138	6.6	-	-	Early Mature	-	Young developing trees at base, Bifurcated at ground level South-east side stem has cavity at base on north side	-	-	C1+2
G1.54	Common Elder	-	MS x 6	190	98	5.6	-	-	Semi-mature	-	Multi-stemmed at ground level	-	-	C1+2
G1.55	Sycamore	-	S	120	-	-	-	-	Young	-	Trunk and crown shape distorted Squirrel damage on trunk	Advise removal	-	U
G1.56	Robinia	-	S	230	24	2.8	-	-	Semi-mature	-	-	-	-	C1+2
G1.57	Common Yew	-	MS	100 100	9	1.7	-	-	Young	-	Bifurcated at ground level Low hanging branches	-	-	C1+2
G1.58	Bay	-	S	100	5	1.2	-	-	Young	-	Trunk and crown shape distorted Low hanging branches	-	-	C1+2
G1.59	Common Elder	-	MS x 9	190	-	-	-	-	Early Mature	-	Multi-stemmed at ground level Major deadwood	Advise removal	-	U
G1.60	Common Yew	-	S	80	3	1.0	-	-	Young	-	Developing tree	-	-	C1+2
G1.61	Common Lime	-	S	1060	508	12.7	-	-	Mature	-	Basal suckers Bifurcated at 2.5m above ground level Major deadwood in crown	Remove deadwood	-	B1+2
G1.62	Common Holly	-	S	450	92	5.4	-	-	Early Mature	-	Low hanging branches	-	-	C1+2
G1.63	Sycamore	-	S	540	132	6.5	-	-	Early Mature	-	Cavities in trunk Exudate on trunk Previously topped	-	-	C1+2
G1.64	Common Hornbeam	-	S	560	142	6.7	-	-	Mature	-	Low hanging branches	-	-	B1+2
G1.65	Manna Ash	-	S	320	46	3.8	-	-	Semi-mature	-	Multi-stemmed at 2m above ground level	-	-	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G1.66	Common Ash	-	S	240	26	2.9	-	-	Semi-mature	-	Low hanging branches	-	-	C1+2
G1.67	Tree of Heaven	-	S	660	197	7.9	-	-	Mature	-	Bifurcated at 8m above ground level Low hanging branches	-	-	B1+2
G1.68	Common Horse Chestnut	-	S	820	304	9.8	-	-	Mature	-	Roots lifting tarmac to south-west Exudate on trunk Multi-stemmed at 2m above ground level	-	-	B1+2
G1.69	Common Hornbeam	-	S	110	5	1.3	-	-	Young	-	Developing tree Low hanging branches	-	-	C1+2
G1.70	Common Lime	-	S	560	142	6.7	-	-	Early Mature	-	Large buttress roots	-	-	A1+2
Grp 2	Killarney Strawberry Tree Sweet Chestnut Tree of Heaven Pedunculate Oak Red Oak Pin Oak Rowan Elm Common Lime Holm Oak Hornbeam Hawthorn Robinia	3	S	90	4	1.1	N - E - S - W -	N - E - S - W -	Young	Good	Structural Condition - Good Newly planted trees Stakes and ties still in place Some dead trees Some memorial trees	Remove dead trees	40+	C2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
Grp 3	Holly Cherry Laurel Sycamore Horse Chestnut Yew Elder	15	S	See below	See below	See below	N - E - S - W -	N - E - S - W -	Mature	Good	Structural Condition - Fair Branch tearout wounds Crown shapes distorted due to group pressure Trunk shapes distorted due to group pressure Old pruning wounds Minor deadwood in crowns Low hanging branches Ivy on trunks Epicormics on trunks and in crowns	None required at time of survey	20+	B1+2
G3.1*	Pedunculate Oak	-	S	500	113	6.0	-	-	Early Mature	-	Ivy on trunk and in crown Crown shape distorted Previously crown reduced	-	-	B1+2
G3.2	Sycamore	-	S	690	215	8.3	-	-	Early Mature	-	Bifurcated at 8m above ground level	-	-	B1+2
G3.3	Common Horse Chestnut	-	S	600	163	7.2	-	-	Early Mature	-	Trunk and crown shape distorted Leans to north-west	-	-	C1+2
G3.4*	Common Horse Chestnut	-	S	860	335	10.3	-	-	Mature	-	Possible lightning strike running down trunk	-	-	C1+2
G3.5*	Sycamore	-	S	570	147	6.8	-	-	Early Mature	-	Squirrel damage in crown	-	-	C1+2
G3.6*	Sycamore	-	S	300	41	3.6	-	-	Semi-mature	-	Tall and etiolated due to group pressure Bifurcated at 7m above ground level	-	-	C1+2
G3.7*	Common Horse Chestnut	-	S	370	62	4.4	-	-	Early Mature	-	-	-	-	C1+2
G3.8*	Sycamore	-	S	560	142	6.7	-	-	Mature	-	Bifurcated at 7m above ground level	-	-	C1+2
G3.9*	Common Horse Chestnut	-	S	590	157	7.1	-	-	Early Mature	-	Poor quality tree Branch tears in crown Previously crown reduced	-	-	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G3.10*	Common Horse Chestnut	-	S	410	76	4.9	-	-	Early Mature	-	Poor quality tree Branch tears in crown	-	-	C1+2
G3.11*	Common Horse Chestnut	-	S	790	282	9.5	-	-	Mature	-	Minor deadwood Old pruning wounds	-	-	B1+2
G3.12	Common Lime	-	S	350	55	4.2	-	-	Early Mature	-	Apical dieback Major deadwood in crown Basal suckers	Remove major deadwood	-	C1+2
G3.13	Common Lime	-	S	770	268	9.2	-	-	Mature	-	Trunk shape distorted	-	-	B1+2
G3.14	Sycamore	-	S	600	163	7.2	-	-	Early Mature	-	Exudate on trunk Appears as though main trunk has previously failed at 4m above ground level Two lateral branches grow from side of old pruning wound	Aerial inspection of old wound – within 1 month	-	C1+2 Interim
G3.15	Common Yew	-	S	370	62	4.4	-	-	Early Mature	-	Leans west	-	-	C1+2
G3.16	Sycamore	-	S	670	203	8.0	-	-	Early Mature	-	Crown shape distorted	-	-	B1+2
G3.17	Sycamore	-	S	610	168	7.3	-	-	Mature	-	Basal decay on west side Cavity at 1.5m above ground level on east side of trunk	-	-	C1+2
G3.18*	Sycamore	-	S	700	222	8.4	-	-	Early Mature	-	Trunk and crown shape distorted	-	-	B1+2
G3.19	Common Horse Chestnut	-	S	360	-	-	-	-	Early Mature	-	Longditudinal decay down trunk	Advise removal	-	U
G3.20	Common Horse Chestnut	-	S	520	122	6.2	-	-	Early Mature	-	Leans north	-	-	C1+2
G3.21	Sycamore	-	S	540	-	-	-	-	Mature	-	Topped standing stump	Advise removal	-	U

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G3.22*	Sycamore	-	S	450	92	5.4	-	-	Early Mature	-	Trunk and crown shape distorted	-	-	C1+2
G3.23*	Common Hornbeam	-	S	480	104	5.8	-	-	Early Mature	-	Bifurcated at 5m above ground level	-	-	B1+2
G3.24	Common Horse Chestnut	-	S	640	185	7.7	-	-	Mature	-	-	-	-	B1+2
G3.25	Common Horse Chestnut	-	S	750	-	-	-	-	Dead	-	Topped at 11m above ground level Wildlife holes in trunk	Advise removal	-	U
G3.26	Common Horse Chestnut	-	S	600	163	7.2	-	-	Mature	-	-	-	-	C1+2
G3.27	Common Horse Chestnut	-	S	480	104	5.8	-	-	Early Mature	-	Trunk and crown shape distorted	-	-	C1+2
G3.28*	Common Horse Chestnut	-	S	980	-	-	-	-	Dead	-	Standng stump approximately 14m tall	Advise removal	-	U
G3.29	Common Horse Chestnut	-	S	900	366	10.8	-	-	Mature	-	Ivy on trunk Major deadwood in crown In decline	-	-	C1+2
G3.30*	Common Horse Chestnut	-	S	870	-	-	-	-	Mature	-	Standing stump	Advise removal	-	U
Grp 4	Poplar Oak Willow Sycamore Horse Chestnut Box Elder Tree of Heaven	15	S	See below	See below	See below	N - E - S - W -	N - E - S - W -	Early Mature	Good	Structural Condition - Fair Crown shapes distorted due to group pressure Epicormics on trunks and in crowns Low hanging branches Major deadwood in crowns Old pruning wounds Trunk shapes distorted due to group pressure	None required at time of survey	20+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G4.1	Hybrid Black Poplar	-	S	880	350	10.6	-	-	Mature	-	Numerous branches previously reduced Low hanging branches	-	-	C1+2
G4.2	Turkey Oak	-	S	640	185	7.7	-	-	Early Mature	-	Fused branches in crown Low hanging branches	-	-	B1+2
G4.3	Common Beech	-	S	770	268	9.2	-	-	Early Mature	-	Tight fork at 3m above ground level Major deadwood Low hanging branches	-	-	B1+2
G4.4	Pedunculate Oak	-	S	990	443	11.9	-	-	Mature	-	Low hanging branches Major deadwood in crown Leans west	Remove major deadwood	-	C1+2
G4.5	Pedunculate Oak	-	S	590	157	7.1	-	-	Early Mature	-	Trunk and crown shape distorted Major deadwood Low hanging branches	-	-	B1+2
G4.6	Pedunculate Oak	-	S	500	113	6.0	-	-	Early Mature	-	Major deadwood High canopy	-	-	B1+2
G4.7	Common Lime	-	S	800	290	9.6	-	-	Mature	-	Low hanging branches Basal suckers	-	-	B1+2
G4.8	Common Horse Chestnut	-	S	1330	707	15	-	-	Mature	-	Large buttress roots Low hanging branches Deadwood Guignadia and camararia on foliage	-	-	B1+2
G4.9	Common Horse Chestnut	-	S	370	62	4.4	-	-	Semi-mature	-	-	-	-	C1+2
G4.10	Common Horse Chestnut	-	S	700	222	8.4	-	-	Early Mature	-	Bifurcated at 2m above ground level with tight fork and reaction wood Minor deadwood Low hanging branches Guignadia and camararia on foliage	-	-	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G4.11	Hybrid Black Poplar	-	S	760	261	9.1	-	-	Mature	-	Bifurcated at 7m above ground level Appears to have have been historically topped Storm damage in crown Branch tear out wounds Hung up branch in crown	Remove major deadwood Tidy storm damage and remove hung up branch	-	C1+2
G4.12	Ashleaf Maple	-	S	230	24	2.8	-	-	Semi-mature	-	Crown shape distorted Low hanging branches Minor deadwood	-	-	C1+2
G4.13	Swedish Whitebeam	-	S	310	43	3.7	-	-	Semi-mature	-	Trunk and crown shape distorted Leans to south-east	-	-	C1+2
G4.14	Common Horse Chestnut	-	S	240	26	2.9	-	-	Semi-mature	-	Crown shape distorted	-	-	C1+2
G4.15	Ashleaf Maple	-	S	340	52	4.1	-	-	Early Mature	-	Bifurcated at 5m above ground level Major deadwood in crown	Remove major deadwood	-	B1+2
G4.16	Ashleaf Maple	-	S	360	59	4.3	-	-	Semi-mature	-	Crown shape distorted Low hanging branches Minor deadwood	-	-	C1+2
G4.17	Common Horse Chestnut	-	S	370	-	-	-	-	Semi-mature	-	Bark wounds on trunk	Advise removal	-	U
G4.18	Hybrid Black Poplar	-	S	780	275	9.4	-	-	Early Mature	-	Bifurcated at 4m above ground level Minor deadwood	-	-	B1+2
G4.19	Common Lime	-	S	450	92	5.4	-	-	Early Mature	-	Low hanging branches Bifurcated at 4.5m above ground level	-	-	B1+2
G4.20	Mountain Ash	-	S	280	35	3.4	-	-	Early Mature	-	Multi-stemmed at 2m above ground level Low hanging branches	-	-	B1+2
G4.21	Western Balsam Poplar	-	S	650	191	7.8	-	-	Early Mature	-	Previously crown reduced Old pruning wounds Low hanging branches	-	-	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G4.22	Western Balsam Poplar	-	S	560	142	6.7	-	-	Mature	-	Bifurcated at 6m above ground level	-	-	C1+2
G4.23	Common Lime	-	S	400	72	4.8	-	-	Semi-mature	-	Low hanging branches	-	-	B1+2
G4.24	Western Balsam Poplar	-	S	580	152	7.0	-	-	Mature	-	Bifurcated at 2.5m above ground level	-	-	C1+2
G4.25	Common Lime	-	S	440	88	5.3	-	-	Semi-mature	-	Low hanging branches	-	-	B1+2
G4.26	Crack Willow	-	S	680	209	8.2	-	-	Mature	-	Multi-stemmed at 4m above ground level	-	-	C1+2
G4.27	Lombardy Poplar	-	S	980	434	11.8	-	-	Mature	-	Major deadwood	-	-	B1+2
G4.28	Common Lime	-	S	530	127	6.4	-	-	Early Mature	-	Low hanging branches	-	-	B1+2
G4.29	Common Lime	-	S	490	109	5.9	-	-	Early Mature	-	Low hanging branches	-	-	B1+2
G4.30	Lombardy Poplar	-	S	740	248	8.9	-	-	Early Mature	-	Major deadwood	-	-	B1+2
G4.31	Lombardy Poplar	-	S	830	312	10.0	-	-	Early Mature	-	Major deadwood in crown	Remove major deadwood	-	B1+2
G4.32	Lombardy Poplar	-	S	900	366	10.8	-	-	Early Mature	-	Major deadwood	-	-	B1+2
G4.33	Lombardy Poplar	-	S	780	275	9.4	-	-	Early Mature	-	Major deadwood	-	-	B1+2
G4.34	Lombardy Poplar	-	S	770	268	9.2	-	-	Early Mature	-	Major deadwood in crown	Remove major deadwood	-	B1+2
G4.35	Common Lime	-	S	550	137	6.6	-	-	Early Mature	-	Low hanging branches	-	-	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G4.36	Tree of Heaven	-	S	350	55	4.2	-	-	Semi-mature	-	Crown shape distorted	-	-	C1+2
G4.37	Crack Willow	-	S	1120	567	13.4	-	-	Mature	-	Major deadwood in crown	Remove major deadwood	-	C1+2
G4.38	Crack Willow	-	S	900	366	10.8	-	-	Mature	-	Cavity in trunk to east Major deadwood Crown shape distorted	Full ground level inspection with Decay detection equipment – within 1 month	-	C1+2 Interim
G4.39	Crack Willow	-	S	1070	518	12.8	-	-	Mature	-	Young fungal fruiting body at base on south side Trifurcated at ground level Major deadwood in crown	Remove major deadwood	-	C1+2
G4.40*	Crack Willow	-	S	970	426	11.6	-	-	Mature	-	Crown shape distorted Major deadwood	-	-	B1+2
G4.41	Sycamore	-	S	460	96	5.5	-	-	Early Mature	-	Bifurcated at 3.5m above ground level	-	-	C1+2
G4.42	Common Ash	-	S	730	241	8.8	-	-	Early Mature	-	Major deadwood	-	-	B1+2
G4.43	Sycamore	-	S	440	88	5.3	-	-	Early Mature	-	Bifurcated at 4m above ground level Weighted south Major deadwood in crown	-	-	C1+2
G4.44	Sycamore	-	S	440	88	5.3	-	-	Semi-mature	-	Bifurcated at 2m above ground level Old pruning wounds Crown shape distorted	-	-	C1+2
Grp 5	Elder Sycamore Ash Holly	9	S	300	41	3.6	N - E - S - W -	N - E - S - W -	Early Mature	Good	Structural Condition - Fair Offsite trees Crown shapes distorted due to group pressure Epicormics on trunks and in crowns Basal suckers Low hanging branches Minor deadwood in crowns Trunk shape distorted due to group pressure	None required at time of survey	10+	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G5.1	Common Ash	-	S	440	88	5.3	-	-	Early Mature	-	Offsite tree Trunk shape distorted due to group pressure Weighted south-east	-	-	C1+2
G5.2	Common Ash	-	S	600	163	7.2	-	-	Early Mature	-	Offsite tree Weighted south Major deadwood in crown	Remove major deadwood	-	C1+2
G5.3	Common Ash	-	S	450	92	5.4	-	-	Early Mature	-	Offsite tree Trunk shape distorted due to group pressure Major deadwood in crown	Remove major deadwood	-	C1+2
G5.4	Common Ash	-	MS	340 320	99	5.6	-	-	Early Mature	-	Offsite tree Trunk shape distorted due to group pressure Major deadwood in crown Bifurcated at ground level	Remove major deadwood	-	C1+2
G5.5	Sycamore	-	MS	300 290	79	5.0	-	-	Early Mature	-	Offsite tree Trunk shape distorted due to group pressure Major deadwood in crown	Remove major deadwood	-	C1+2
G5.6	Common Ash	-	S	490	109	5.9	-	-	Early Mature	-	Offsite tree Trunk shape distorted due to group pressure Major deadwood in crown Weighted south-east	Remove major deadwood	-	C1+2
G5.7	Common Ash	-	S	390	-	-	-	-	Early Mature	-	Offsite tree Trunk shape distorted due to group pressure Major deadwood in crown Decay at base	Advise removal	-	U
G5.8	Sycamore	-	S	540	132	6.5	-	-	Early Mature	-	Offsite tree	-	-	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
Grp 6		18	S	See below	See below	See below	N - E - S - W -	N - E - S - W -	Early Mature	Good	Structural Condition - Good Crown shapes distorted due to group pressure Minor deadwood in crowns Low hanging branches Linear group of trees lining footpath Provides good landscape feature Mixed species	None required at time of survey	40+	B2
G6.1	Sycamore	-	S	740	248	8.9	-	-	Early Mature	-	Bifurcated at 4m above ground level Cavity at base on north-west side Crown density reduced	Full ground level inspection with Decay detection equipment – within 1 month	-	B1+2 Interim
G6.2	Turkish Hazel	-	S	620	174	7.4	-	-	Mature	-	Low hanging branches	-	-	B1+2
G6.3	Common Walnut	-	S	530	127	6.4	-	-	Early Mature	-	Low hanging branches	-	-	B1+2
G6.4	Common Lime	-	S	680	209	8.2	-	-	Early Mature	-	Epicormics in crown Low hanging branches	-	-	B1+2
G6.5	Common Lime	-	S	640	185	7.7	-	-	Early Mature	-	Low hanging branches	-	-	B1+2
G6.6	Common Lime	-	S	780	275	9.4	-	-	Early Mature	-	Bifurcated at 2m above ground level Minor deadwood	-	-	B1+2
G6.7	Common Lime	-	S	630	180	7.6	-	-	Early Mature	-	Low hanging branches	-	-	B1+2
G6.8	Common Lime	-	S	640	185	7.7	-	-	Early Mature	-	Epicormics in crown Low hanging branches	-	-	B1+2
G6.9	Common Lime	-	S	520	122	6.2	-	-	Early Mature	-	Low hanging branches Storm damage in north of crown	-	-	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G6.10	Common Lime	-	S	590	157	7.1	-	-	Early Mature	-	Bifurcated at 2m above ground level Low hanging branches	-	-	B1+2
G6.11	Common Lime	-	S	530	127	6.4	-	-	Early Mature	-	Low hanging branches Multi-stemmed at 4.5m above ground level	-	-	B1+2
G6.12	Common Lime	-	S	510	118	6.1	-	-	Early Mature	-	Bifurcated at 2m above ground level with tight fork Low hanging branches	-	-	B1+2
G6.13	Common Lime	-	S	590	157	7.1	-	-	Early Mature	-	Low hanging branches	-	-	B1+2
G6.14	Turkish Hazel	-	S	390	69	4.7	-	-	Early Mature	-	Bifurcated at 4m above ground level Low hanging branches	-	-	B1+2
G6.15	Common Lime	-	S	560	142	6.7	-	-	Early Mature	-	Low hanging branches	-	-	B1+2
G6.16	Common Lime	-	S	590	157	7.1	-	-	Early Mature	-	Previously pollarded at 4m above ground level	-	-	B1+2
G6.17	Common Ash	-	S	690	215	8.3	-	-	Early Mature	-	Low hanging branches Weighted east Major deadwood in crown	Remove major deadwood	-	B1+2
G6.18	Common Lime	-	S	640	185	7.7	-	-	Early Mature	-	Bifurcated at 4m above ground level Low hanging branches Minor deadwood	-	-	B1+2
G6.19	Common Lime	-	S	870	342	10.4	-	-	Early Mature	-	Previously topped Basal suckers	-	-	C1+2
G6.20	Common Lime	-	S	580	152	7.0	-	-	Early Mature	-	Low hanging branches	-	-	B1+2
G6.21	Common Lime	-	S	540	132	6.5	-	-	Early Mature	-	Basal suckers Low hanging branches	-	-	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G6.22	Common Lime	-	S	590	157	7.1	-	-	Early Mature	-	Cavity at base on south-west side Previously topped at 8m above ground level	-	-	C1+2
G6.23	Common Lime	-	S	530	127	6.4	-	-	Early Mature	-	Bifurcated at 3.5m above ground level Low hanging branches	-	-	B1+2
G6.24	Common Lime	-	S	460	96	5.5	-	-	Early Mature	-	Low hanging branches	-	-	B1+2
G6.25	Common Yew	-	S	580	152	7.0	-	-	Early Mature	-	Low hanging branches	-	-	B1+2
G6.26	Common Lime	-	S	700	222	8.4	-	-	Early Mature	-	Estimatd data Basal suckers Low hanging branches	Clear around base and re-survey within 1 month	-	B1+2 Interim
G6.27	Common Lime	-	S	670	203	8.0	-	-	Early Mature	-	Basal suckers Low hanging branches	-	-	B1+2
G6.28	Common Lime	-	S	700	222	8.4	-	-	Early Mature	-	Basal suckers Low hanging branches Minor deadwood	-	-	B1+2
G6.29	Common Ash	-	S	410	76	4.9	-	-	Semi-mature	-	Crown shape distorted Minor deadwood	-	-	B1+2
G6.30	Norway Maple	-	S	500	113	6.0	-	-	Early Mature	-	Bifurcated at 2m above ground level	-	-	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
Grp 7	Pedunculate Oak Ash Yew Robinia Field Maple Sycamore Holm Oak Hawthorn Dogwood Holly Cherry Laurel Portugal Laurel Spotted Laurel Elm Snowberry Norway Maple	14	S	See below	See below	See below	N - E - S - W -	N - E - S - W -	Early Mature	Good	Structural Condition - Fair Crown shapes distorted due to group pressure Trunk shapes distorted due to group pressure Branch tears Epicormics on trunks and in crowns Low hanging branches Major deadwood in crowns Old pruning wounds Some trees multi-stemmed at various heights	None required at time of survey	20+	B1+2
G7.1	Common Yew	-	S	590	157	7.1	-	-	Early Mature	-	Low hanging branches	-	-	B1+2
G7.2	Common Ash	-	S	450	92	5.4	-	-	Early Mature	-	Ivy on trunk	-	-	B1+2
G7.3	Common Ash	-	S	470	100	5.6	-	-	Early Mature	-	Trunk and crown shape distorted	-	-	B1+2
G7.4	Wild Cherry	-	S	350	55	4.2	-	-	Early Mature	-	Canker on trunk	-	-	C1+2
G7.5	Sycamore	-	S	310	43	3.7	-	-	Semi-mature	-	Trunk and crown shape distorted Minor deadwood	-	-	C1+2
G7.6	Sycamore	-	S	350	55	4.2	-	-	Semi-mature	-	Ivy on trunk and in crown Major deadwood in crown	Sever ivy Remove major deadwood	-	C1+2
G7.7	Common Ash	-	S	490	109	5.9	-	-	Early Mature	-	Trunk and crown shape distorted Bifurcated at 4m above ground level Minor deadwood	-	-	B1+2
G7.8	Common Lime	-	S	360	-	-	-	-	Early Mature	-	Decay in trunk Previously topped	Advise removal	<10	U

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G7.9	Common Yew	-	S	760	-	-	-	-	Mature	-	Chicken of the woods at base on south side of dead stem Tree was bifurcated at 1.3m above ground level but southern stem removed	Advise removal	<10	U
G7.10	Common Ash	-	S	540	132	6.5	-	-	Early Mature	-	Exposed surface roots Trunk and crown shape distorted	-	-	B1+2
G7.11	Common Ash	-	S	400	72	4.8	-	-	Semi-mature	-	Bifurcated at 5m above ground level	-	-	B1+2
G7.12*	Common Yew	-	S	540	132	6.5	-	-	Early Mature	-	Bifurcated at 1.6m above ground level	-	-	C1+2
G7.13	Common Ash	-	S	520	122	6.2	-	-	Early Mature	-	Trunk and crown shape distorted	-	-	B1+2
G7.14	Pedunculate Oak	-	S	790	282	9.5	-	-	Mature	-	Ivy on trunk Large wounds in crown Major deadwood in crown	Sever ivy	-	B1+2
G7.15	Common Ash	-	S	550	137	6.6	-	-	Early Mature	-	Trunk and crown shape distorted Ivy on trunk and in crown	-	-	B1+2
G7.16	Common Lime	-	S	800	290	9.6	-	-	Early Mature	-	Ivy on trunk and in crown Minor deadwood	-	-	B1+2
Grp 8	Yew Sycamore Ash Oak Hornbeam Elm, Hazel, Laurel, Ivy, Butchers Broom	14	S	350	55	4.2	N - E - S - W -	N - E - S - W -	Early Mature	Good	Structural Condition - Good Crown shapes distorted due to group pressure Major deadwood in crowns Low hanging branches Ivy on trunks and in crowns Small wooded area Mixed species Variety of habitats (fallen deadwood, standing deadwood, ivy, cavities)	None required at time of survey	40+	B2
G8.1	Common Hornbeam	-	S	700	222	8.4	-	-	Early Mature	-	Multi-stemmed at 1.9m above ground level Ivy on trunk and in crown Minor deadwood	-	-	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G8.2	Common Yew	-	S	630	180	7.6	-	-	Early Mature	-	Minor deadwood Crown shape distorted	-	-	B1+2
G8.3	Common Yew	-	S	670	203	8.0	-	-	Early Mature	-	Leans south-east	-	-	C1+2
G8.4	Common Yew	-	S	550	137	6.6	-	-	Early Mature	-	Cavity in trunk on south side	-	-	C2+1
G8.5	Sycamore	-	S	560	142	6.7	-	-	Early Mature	-	Ivy on trunk and in crown Crown shape distorted	-	-	B1+2
G8.6	Common Ash	-	S	560	142	6.7	-	-	Early Mature	-	Broken hanging branch on south-east side Minor deadwood	-	-	B1+2
G8.7	Common Lime	-	S	530	127	6.4	-	-	Early Mature	-	Leans west	-	-	B1+2
G8.8	Common Ash	-	S	860	335	10.3	-	-	Early Mature	-	Decaying cavity at base on north-west side Ivy on trunk and in crown	Full ground level inspection with Decay detection equipment – within 1 month	-	B1+2 Interim
G8.9	Common Yew	-	S	340	52	4.1	-	-	Semi-mature	-	Wall to north	-	-	C1+2
G8.10	Common Yew	-	S	460	96	5.5	-	-	Semi-mature	-	Wall to north House to west	-	-	C1+2
G8.11	Common Yew	-	S	190	16	2.3	-	-	Young	-	Wall to north House to west	-	-	C1+2
G8.12	Common Holly	-	S	350	55	4.2	-	-	Early Mature	-	Trunk and crown shape distorted Leans to north	-	-	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
Grp 9	Sycamore Lime Oak Yew Holly Cherry Laurel Elder Ash Rhododendron Portugal Laurel Snowberry Hornbeam	12	S	300	41	3.6	N - E - S - W -	N - E - S - W -	Early Mature	Good	Structural Condition - Fair Crown shapes distorted due to group pressure Epicormics on trunks and in crowns Low hanging branches Major deadwood in crowns Old pruning wounds Trunk shapes distorted due to group pressure	None required at time of survey	20+	B1+2
G9.1	Common Lime	-	S	590	157	7.1	-	-	Early Mature	-	Basal suckers limit survey Historically lost top	-	-	C1+2
G9.2	Common Ash	-	S	460	96	5.5	-	-	Early Mature	-	Trunk and crown shape distorted Trifurcated at 5m	-	-	B1+2
G9.3	Common Yew	-	S	530	127	6.4	-	-	Early Mature	-	Bifurcated at 4m with tight fork Minor deadwood	-	-	B1+2
G9.4	Common Yew	-	S	390	69	4.7	-	-	Early Mature	-	-	-	-	C1+2
G9.5	Pedunculate Oak	-	S	960	417	11.5	-	-	Early Mature	-	Polyporous squimosus fungal fruiting body on trunk to west at 2m above ground level Topped at 9m Decay present in upper stem Lateral branches taking over apical dominance Habitat value	-	-	C1+2
G9.6	Common Beech	-	S	910	375	10.9	-	-	Mature	-	Trunk shape distorted Leans and weighted east	-	-	C1+2
G9.7	Pedunculate Oak	-	S	790	-	-	-	-	Dead	-	Dead tree Potential habitat	-	-	U
G9.8	Pedunculate Oak	-	S	360	59	4.3	-	-	Semi-mature	-	Trunk shape distorted due to group pressure Weighted south	-	-	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G9.9	Pedunculate Oak	-	S	460	96	5.5	-	-	Early Mature	-	Bifurcated at 5m above ground level Weighted west	-	-	C1+2
G9.10	Pedunculate Oak	-	S	850	-	-	-	-	Dead	-	Dead tree	Advise removal	-	U
G9.11	Pedunculate Oak	-	S	850	327	10.2	-	-	Mature	-	Topped at 10m	-	-	C1+2
G9.12	Common Horse Chestnut	-	S	800	290	9.6	-	-	Mature	-	Exudate on trunk to south Minor deadwood	-	-	C1+2
G9.13	Sycamore	-	S	520	122	6.2	-	-	Early Mature	-	Cavity in south-east side of trunk at ground level Trunk shape distorted Historically lost top	-	-	C1+2
G9.14	Common Ash	-	S	370	-	-	-	-	Semi-mature	-	Cavity at base on east side Innonotus hispidus fungal fruiting body on floor at base of tree Bifurcated at 4m with cavity present	Advise removal	-	U
G9.15*	Common Lime	-	S	390	69	4.7	-	-	Semi-mature	-	Growing on bank of ice house Bird box on trunk Bifurcated at 4m	-	-	C1+2
G9.16	Sycamore	-	S	460	96	5.5	-	-	Early Mature	-	Ivy on trunk	-	-	C1+2
G9.17	Common Lime	-	S	1100	-	-	-	-	Mature	-	Previously topped Major decay in base	Advise removal	-	U
G9.18	Common Ash	-	S	350	55	4.2	-	-	Semi-mature	-	-	-	-	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
Grp 10	Ash Sycamore Yew Beech Laurel Elm	14	S	300	41	3.6	N - E - S - W -	N - E - S - W -	Semi-mature	Good	Structural Condition - Good Crown shapes distorted due to group pressure Trunk and crown shapes distorted Minor deadwood in crowns Low hanging branches Mixed species Small wooded area Dense understorey with even aged tree stock Self set trees within	None required at time of survey	20+	B2
G10.1	Common Ash	-	S	440	88	5.3	-	-	Early Mature	-	-	-	-	B1+2
G10.2	Common Ash	-	S	620	174	7.4	-	-	Early Mature	-	Minor deadwood	-	-	B1+2
Grp 11	Ash Cockspur Thorn Lime Norway Maple Elder	16	S	600	163	7.2	N - E - S - W -	N - E - S - W -	Early Mature	Good	Structural Condition - Fair Bark wounds Epicormics on trunks and in crowns Low hanging branches Minor deadwood in crowns Old pruning wounds Mixed species and age class group growing either side of path Basal suckers on limes	None required at time of survey	20+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
Grp 12	Sycamore Horse Chestnut Pedunculate Oak Turkey Oak Box Elder Lime Willow Holly London Plane Alder Hornbeam Hawthorn	17	S	650	191	7.8	N - E - S - W -	N - E - S - W -	Early Mature	Good	Structural Condition - Fair Crown shapes distorted due to group pressure Bark wounds Epicormics on trunks and in crowns Low hanging branches Minor deadwood in crowns Old pruning wounds Mixed species and age class group growing along site bounday Some trees previously crown reduced Some trees are offsite Some trees have been historically topped	None required at time of survey	20+	B1+2
G12.1	Crack Willow	-	S	610	-	-	-	-	Mature	-	Tppped Epicormics form small crown Large area of bark necrosis on upper trunk	Advise removal	<10	U
Grp 13	Willow Alder Pedunculate Oa Red Oak Lime Horse Chestnut	5	S	100	5	1.2	N - E - S - W -	N - E - S - W -	Young	Fair	Structural Condition - Fair Developing trees Recently planted trees with stake and ties in place Several trees have died	None required at time of survey	20+	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
Grp 14	Horse Chestnut London Plane Sycamore Willow Pedunculate Oak Hornbeam Hawthorn Ash Hazel Silver Birch Whitebeam Atlas Cedar Pine Holm Oak Red Oak Wild Cherry Turkish Hazel Maidenhair Tree Norway Maple Beech Apple Leyland Cypress	17	S	750	254	9.0	N - E - S - W -	N - E - S - W -	Mature	Good	Structural Condition - Fair Bark wounds Crown shapes distorted due to group pressure Epicormics on trunks and in crowns Low hanging branches Major deadwood in crowns Old pruning wounds Tall and etiolated due to group pressure Tight forks with included bark Trunk shapes distorted due to group pressure Mixed species and age class trees Large Ash with perenipora at base (assumed identified for removal with the sites previous survey as tree fenced off)	Remove major deadwood	20+	B1+2
G14.1	Sycamore	-	MS	1000 900	707	15	-	-	Mature	-	Large buttress roots Bifurcated at 1m above ground level Channel of decay in south side of north side stem Old pruning wounds	-	-	C1+2
Grp 15	Oak Hawthorn Lime Wild Service Tree	2	S	75	3	0.9	N - E - S - W -	N - E - S - W -	Young	Good	Structural Condition - Good Newly planted trees Developing trees	None required at time of survey	40+	C2
Grp 16	Sweet Chestnut Hornbeam Common Walnut Common Lime Hawthorn Holm Oak	4	S	120	7	1.4	N - E - S - W -	N - E - S - W -	Young	Good	Structural Condition - Good Mixed species and age Mainly young trees with two more mature trees within	None required at time of survey	40+	B2
G16.1	Common Walnut	-	S	430	84	5.2	-	-	Early Mature	-	Low hanging branches	-	-	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
G16.2	Common Lime	-	S	620	174	7.4	-	-	Early Mature	-	Bifurcated at 4m above ground level Low hanging branches	-	-	B1+2
Grp 17	Sycamore Horse Chestnut Holm Oak Corsican Pine Beech Poplar Pear Elder	17	S	650	191	7.8	N - E - S - W -	N - E - S - W -	Early Mature	Good	Structural Condition - Fair Bark wounds Crown shapes distorted due to group pressure Epicormics on trunks and in crowns Major deadwood in crowns Old pruning wounds Some trees topped or previously reduced	Remove major deadwood	20+	B1+2
Grp 18	Corsican Pine Red Oak Pedunculate Oak Turkey Oak	16	S	600	163	7.2	N - E - S - W -	N - E - S - W -	Early Mature	Good	Structural Condition - Fair Crown shapes distorted due to group pressure Epicormics on trunks and in crowns Minor deadwood in crowns Low hanging branches Old pruning wounds	None required at time of survey	20+	B1+2
Grp 19	Horse Chestnut Common Lime Small Leaved Lime Red Oak Pin Oak Pedunculate Oak Cedar Norway Maple Common Ash Black Walnut	18	S	650	191	7.8	N - E - S - W -	N - E - S - W -	Early Mature	Good	Structural Condition - Good Crown shapes distorted due to group pressure Major deadwood in crowns Low hanging branches Old pruning wounds Avenue of trees running along footpath Cavities in trunks and in crowns	Remove major deadwood	40+	A2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Root Protection Area (m^2)	Root Protection Distance (m)	Branch Spread (m)	H't of Crown AGL (m)	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
Grp 20	Holm Oak Lime Sweet Chestnut Horse Chestnut Ash Red Oak Norway Maple Tree of Heaven Robinia Wild Cherry	17	S	700	222	8.4	N - E - S - W -	N - E - S - W -	Mature	Good	Structural Condition - Fair Crown shapes distorted due to group pressure Bark wounds Epicormics on trunks and in crowns Low hanging branches Minor deadwood in crowns Old pruning wounds	None required at time of survey	20+	B1+2
Grp 21	Common Ash x2 Norway Maple x1	12	S	770	268	9.2	N - E - S - W -	N - E - S - W -	Early Mature	Good	Structural Condition - Fair Epicormics on trunks and in crowns Low hanging branches Minor deadwood in crowns Old pruning wounds Linear group	None required at time of survey	20+	B1+2
Grp 22	Pedunculate Oak Common Lime	4	S	120	7	1.4	N - E - S - W -	N - E - S - W -	Young	Good	Structural Condition - Good Four developing trees	None required at time of survey	40+	C2
Grp 23	Common Ash x 3	12	S	700	222	8.4	N - E - S - W -	N - E - S - W -	Early Mature	Good	Structural Condition - Good Minor deadwood in crowns Low hanging branches	None required at time of survey	40+	B2
Grp 24	Beech Ash Sycamore Hawthorn Lime Tree of heaven	18	S	800	290	9.6	N - E - S - W -	N - E - S - W -	Mature	Good	Structural Condition - Good Crown shapes distorted due to group pressure Major deadwood in crowns Low hanging branches Old pruning wounds Basal suckers	Remove major deadwood	40+	A2


CB2

CBA Trees

Russell House
Unit 20 Chalcroft Business Park
Burnetts Lane, West End
Southampton, SO30 2PA
Tel: 02380 986229 Email: info@cbatrees.co.uk
Website: www.cbatrees.co.uk

CBA10677
Marble Hill House and Park
Tree Survey Plan

SCALE :	DATE :
1 : 500 @ A0 Sheet 1 of 4	11/11/2016
MAP FILENAME :	**BASE PLAN:**
CBA10677.01 TSP	MHH16T01-17

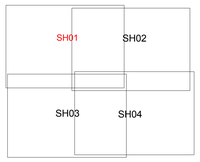
NOTES:
1. Shading Arcs not shown on this plan
2. Root Protection Areas are shown as a theoretical circle and at this stage do not take into account site features and constraints.
3. Trees marked with * and group outlines are indicatively plotted.

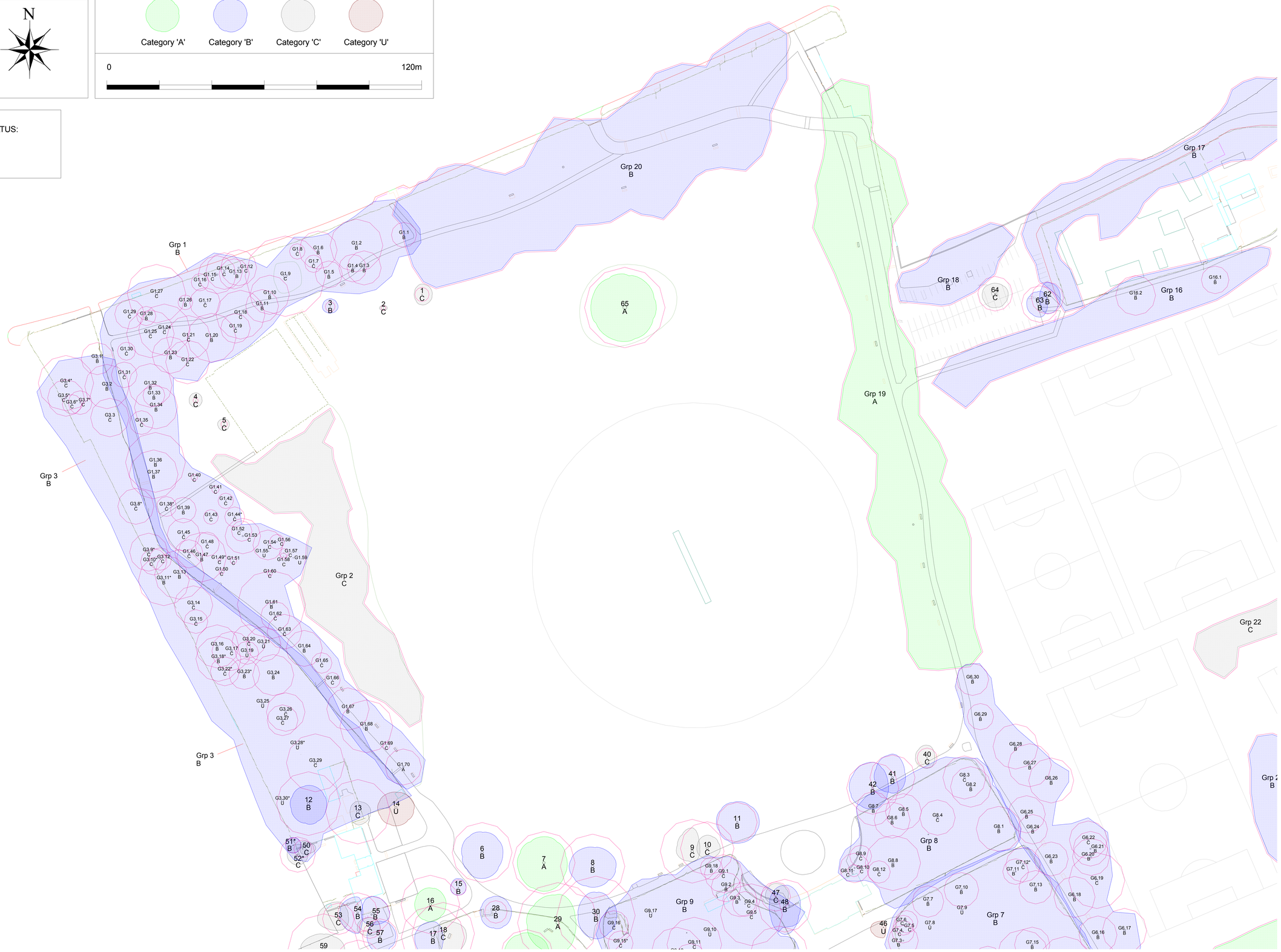
Crown Spread | Root Protection Area | Shading Arc

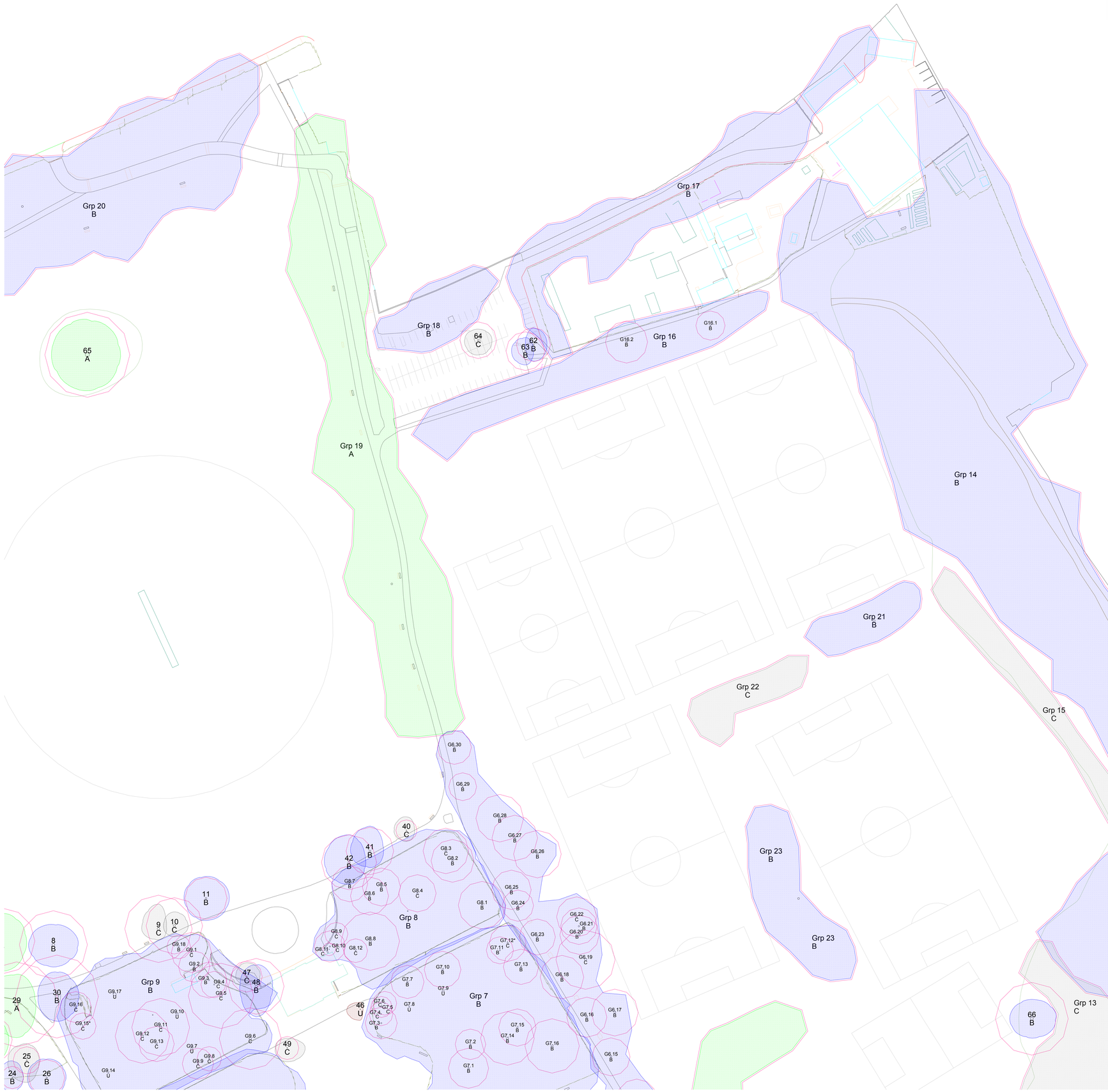
Category 'A' | Category 'B' | Category 'C' | Category 'U'

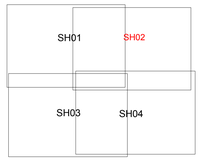
0 120m

TREE PRESERVATION ORDER / CONSERVATION AREA STATUS:
Richmond Council has confirmed that the site lies within the CA8 Twickenham Riverside Conservation Area but there are no Tree Preservation Orders protecting trees on the site.









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CBA10677
Marble Hill House and Park
Tree Survey Plan

SCALE :
1 : 500 @ A0
Sheet 2 of 4

DATE :
11/11/2016

MAP FILENAME :
CBA10677.01 TSP

BASE PLAN:
MHH16T01-17

Pear Technology Services Ltd; Email info@peartechnology.co.uk

N

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Crown Spread
Root Protection Area
Shading Arc

Category 'A'
Category 'B'
Category 'C'
Category 'U'

0 120m

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Crown Spread

Root Protection Area

Shading Arc

Category 'A'

Category 'B'

Category 'C'

Category 'U'

0 120m

CBA Trees
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Unit 20 Chalcroft Business Park
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CBA10677
Marble Hill House and Park
Tree Survey Plan

SCALE : 1 : 500 @ A0
Sheet 3 of 4

DATE : 11/11/2016

MAP FILENAME : CBA10677.01 TSP

BASE PLAN: MHH16T01-17

N

SH01 SH02 SH03 SH04

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Crown Spread | Root Protection Area | Shading Arc

Category 'A' | Category 'B' | Category 'C' | Category 'U'

0 — 120m

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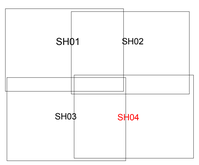
CBA10677
Marble Hill House and Park
Tree Survey Plan



SCALE : 1 : 500 @ A0
Sheet 4 of 4

DATE : 11/11/2016

MAP FILENAME : CBA10677.01 TSP

BASE PLAN: MHH16T01-17

N


CB3

Grp 3 B

G3.28*
U

G3.29
C

G1.69
C

G1.70
A

G3.30*
U

12
B

Stump

14
U

51*
B

50
C

52*
C

53
C

54
B

55
B

56
C

57
B

59
C

58
B

60
B

Grp 11

Montpelier House Garage

Existing footpath retained

6
B

7
A

15
B

16
A

28
B

17
B

18
C

19
C

KEY

- TREES TO BE RETAINED AND PROTECTED IMMEDIATELY AROUND THE STABLE BLOCK
- TREES TO BE REMOVED
- TREES TO BE REMOVED (T1-4) OR MADE SAFE AND RETAINED FOR HABITAT (G3.28 AND G3.30)
- FIT FOR PURPOSE TREE PROTECTION BARRIER
- FIT FOR PURPOSE GROUND PROTECTION FOR DURATION OF STABLE BLOCK WORKS
- FIT FOR PURPOSE GROUND PROTECTION UNTIL SUCH TIME AS PROPOSED FOOTPATH IS HAND DUG
- AREA OF EXISTING PATIO SLAB TO BE TEMPORARILY RETAINED FOR GROUND PROTECTION
- EXISTING SHED TO BE RETAINED

TREE PRESERVATION ORDER / CONSERVATION AREA STATUS:
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N

5m 10m

KEY

- ROOT PROTECTION AREA (RPA)
- CROWN SPREAD
- TREE NUMBER
- CATEGORY

JOB TITLE
Marble Hill House & Park

DRAWING TITLE
Tree Protection Plan

CBA DRAWING No.
CBA10677.02 TPP (work plan)

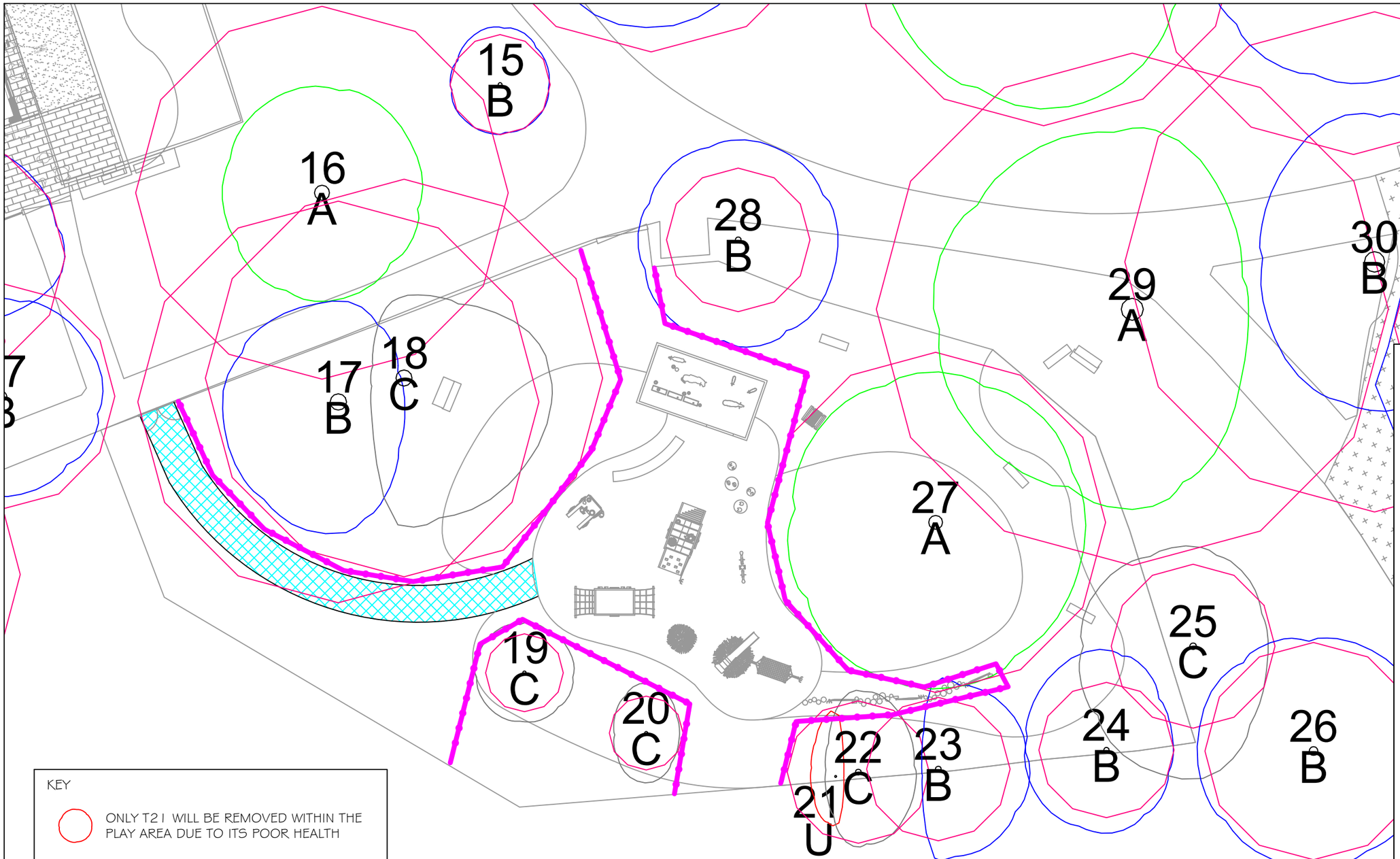
BASE PLAN DRAWING No.
581_170216_JLG_Landscape Base_clean issue & 533-Ground Floor Plan-Revision E-140317

SCALE 1-250@A2

DRAWN AM

DATE March 2017

CBA Trees.
Russell House, Unit 20 Chalcroft Business Park, Burnetts Lane, West End, Southampton, SO30 2PA
Tel: 02380 986229



KEY

ONLY T21 WILL BE REMOVED WITHIN THE PLAY AREA DUE TO ITS POOR HEALTH

EXISTING BOUNDARY TREATMENT TO BE RETAINED TO RESTRICT CONTRACTOR MOVEMENTS

ADDITIONAL TREE PROTECTIVE BARRIERS DURING WORKS TO IMPROVE PLAY AREA

MINIMAL DIG FOOTPATH

TREE PRESERVATION ORDER / CONSERVATION AREA STATUS:
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N
W
E
S

5m 10m

KEY

ROOT PROTECTION AREA (RPA)
CROWN SPREAD
TREE NUMBER
CATEGORY

JOB TITLE
Marble Hill House & Park

DRAWING TITLE
Tree Protection Plan

CBA DRAWING No.
CBA10677.03 TPP

BASE PLAN DRAWING No.
581_170216_JLG_Landscape Base_clean issue & 533-Ground Floor Plan-Revision E-140317

SCALE 1-250@A3

DRAWN AM

DATE March 2017

CBA Trees.
Russell House, Unit 20 Chalcroft Business Park, Burnetts Lane, West End, Southampton, SO30 2PA
Tel: 02380 986229

KEY

- ROOT PROTECTION AREA (RPA)
- CROWN SPREAD
- TREE NUMBER
- CATEGORY

JOB TITLE
Marble Hill House & Park

DRAWING TITLE
Tree Retention Plan

CBA DRAWING No.
CBA10677.04 TRP

BASE PLAN DRAWING No.
581_17021 6_JLG_Landscape Base_clean issue # 333-Ground Floor Plan-Revision E-140317

SCALE 1-500@AO

DRAWN AM

DATE March 2017

CBA Trees
Russell House, Unit 20 Chalcroft, Business Park, Bursledon, Southampton, SO31 3FA.
Tel: 02380 406324

KEY

TREE ADVISED TO BE REMOVED FOR REASONS OF SOUND ARBORICULTURAL MANAGEMENT, SUBJECT TO LOCAL AUTHORITY APPROVAL

TREE TO BE REMOVED TO FACILITATE LANDSCAPE RESTORATION WORKS SUBJECT, SUBJECT TO LOCAL AUTHORITY APPROVAL

LANDSCAPE RESTORATION WORKS, UNDERSTORY CLEARANCE CONSISTING MOSTLY OF YEW AND HOLLY TO BE COPPICED. SPECIMEN TREES OF NOTE TO BE RETAINED.

TREE PRESERVATION ORDER / CONSERVATION AREA STATUS:
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N

5m 10m 20m 30m 40m 60m


CB4

	TREE WORKS SCHEDULE			
	Client:	English Heritage	**Site:**	Marble Hill House and Park
	Date:	March 2017	**Consultant:**	Stefan Rose *Bsc (Hons),* TechCert *(Arbor.A),* Tech*ArborA*

Tree No.	Species	Recommended Works
9	Robinia	• Fell and remove stump
14	Robinia	• Fell and remove stump (assuming English Heritage have not already removed this tree)
21	Elder	• Fell and remove stump
47	Yew	• Fell and remove stump
48	Holm Oak	• Fell and remove stump
49	Birch 'Youngii'	• Fell and remove stump
50	Elder	• No works required
56	Hornbeam	• No works required
Grp 3	Mixed Species	• Fell and remove stumps in section as indicated on plan CBA10677.02 TPP
G3.28	Horse Chestnut	• Fell to a safe height
G3.30	Horse Chestnut	• Fell to a safe height
G4.13	Swedish Whitebeam	• Fell and remove stump
G4.15	Ashleaf Maple	• Fell and remove stump
G4.16	Ashleaf Maple	• Fell and remove stump
G4.20	Mountain Ash	• Fell and remove stump
G4.21	Western Balsam Poplar	• Fell and remove stump
G4.22	Western Balsam Poplar	• Fell and remove stump
G4.24	Western Balsam Poplar	• Fell and remove stump
G4.37	Crack Willow	• Fell and remove stump
G4.38	Crack Willow	• Fell and remove stump
G4.39	Crack Willow	• Fell and remove stump
G4.40	Crack Willow	• Fell and remove stump
G5	Mixed Species	• Fell and remove stumps
G5.1	Common Ash	• Fell and remove stump
G5.2	Common Ash	• Fell and remove stump
G5.3	Common Ash	• Fell and remove stump
G5.4	Common Ash	• Fell and remove stump
G5.5	Common Ash	• Fell and remove stump
G5.6	Common Ash	• Fell and remove stump
G5.7	Common Ash	• Fell and remove stump
G5.8	Sycamore	• Fell and remove stump
G7	Mixed Species	• Coppice Yew and Holly • Remove Elm
G7.2	Common Ash	• Fell and remove stump

Tree No.	Species	Recommended Works
G8	Mixed Species	• Coppice Yew and Holly • Remove Elm
G8.12	Common Holly	• Fell and remove stump
G9	Mixed Species	• Coppice Yew and Holly
G10	Mixed Species	• Coppice Yew and Holly • Remove Elm
G10.2	Common Ash	• No works required

- It is advised that all remedial tree works such as pruning is carried out between July and September or November and February. Tree works should also avoid the season for nesting birds.

- All tree works should be carried out in accordance with current best practice guidelines and BS3998: 2010 – Tree Works. Only natural target pruning method to be used.

- We recommend the use of an Arboricultural Association Approved Contractor or an ISA Certified Arborist/Tree Worker suitably insured and experienced to carry out the tree works.


CB5

TREES AT_____:

SUMMARY OF

TREE PROTECTION MEASURES

Introduction

This leaflet shall be issued to all site personnel as part of their induction briefing.

It describes in summary form the precautions that site personnel shall at all times follow, to ensure that the existing trees on the site come to no harm.

The precautions described are neither arbitrary nor reducible and must be adhered to in full.

These precautions are necessary because unprotected trees are very vulnerable to damage during demolition and construction works.

Furthermore, many of the trees on the site are under **LEGAL PROTECTION** and damaging them can result in heavy fines.

Two common misconceptions about trees:

MYTH: Trees have deep taproots and so shallow excavations will not harm the tree.
FACT: 90% of all tree's roots are found in the top 600mm of soil; all excavations near to trees are likely to cause root damage which can kill the tree.
MYTH: Trees will quickly heal over any bark wound, with no ill effect.
FACT: Bark wounds take years to heal and larger ones never do; missing bark can lead to disease and even the death of the tree.

Tree Protection

All trees adjacent to unsupervised work areas have been protected by tree protection barriers.

These barriers must be respected at all times and no attempts shall be made to damage, bypass or ignore them.

In areas designated for supervised working, no works shall be undertaken without the supervisor being present or without him/her issuing a "carry on" chit.

Prohibitions Adjacent to Trees

Inside the exclusion area of the tree protection, the following prohibitions shall apply.

- **No** digging or scraping
- **No** storage of plant or materials
- **No** vehicular access
- **No** fire lighting
- **No** handling, discharge or spillage or any chemical substance
- **No** water-logging

In addition to the above, further precautions shall be taken near to trees.

- A 10m separation distance shall be observed between trees and any substance injurious to their health, including fuels, oil, bitumen, cement (including washings) builders' sand, concrete mixing and other chemicals.

- No fire shall be lit such that flames come within 5m of any foliage; this shall be taken to mean a fire separation distance to the leaved of 20m.

Avoiding Damage to Stem and Branches

Care shall be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights, can operate without coming into contact with trees.

Consequently, any transit or traverse of plant in proximity to trees shall be conducted under the supervision of a spotter to ensure that adequate clearance is at all times maintained.

In some circumstances, it may be impossible to achieve this, necessitating the pruning of the tree.

If this is necessary, a specialist team shall be called in following referral to the project Arboriculturist.

No tree pruning shall be undertaken by demolition or construction personnel.

Asking for Help

If you see any damage to a tree or its protective fencing, or if you need a tree pruning for plant clearance, contact **CBA Trees** as follows:

Office Telephone: 020 8098 6229

REMEMBER:

ALL TREE DAMAGE IS AVOIDABLE –

SO AVOID IT!

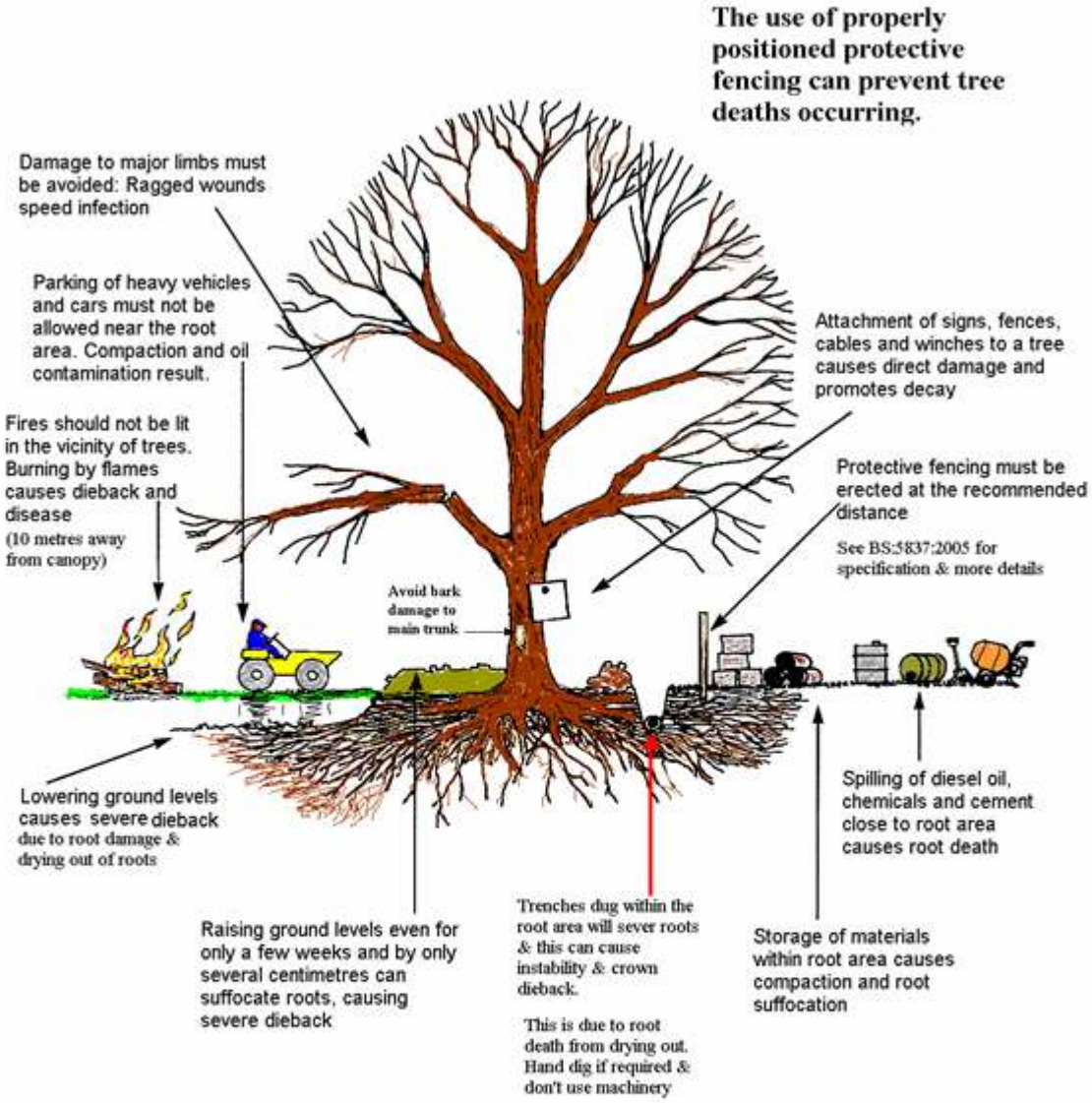
PROTECTIVE BARRIERS.
THESE BARRIERS MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

TREE PROTECTION AREA
KEEP OUT !

(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

Common causes of Tree Death



Please use copies of this as an on-site poster for personnel

(Source: Arboricultural Information Exchange website, 2005)


CB6

The Professional Arboricultural Consultancy

Qualifications of
Stefan Rose
Senior Consultant

Stefan Rose BSc.Hons. AA Tech.Cert. joined CBA Trees in 1998 as a junior surveyor and having gained extensive knowledge has become a respected Senior Consultant. He has considerable experience in working as a locum for Local Authorities, assessing new and extant Tree Preservation Orders, and continues to work on a number of major development projects nationwide.

As a retained Senior Consultant, Stefan undertakes Health and Safety Audits and BS5837:2012 Tree Surveys using the latest data capture equipment, together with site assessments and site monitoring. He also provides advice to prominent development companies and produces Implications Assessments and Method Statements for the submission of planning applications.