Community Investment Programme

Camden

ABORICULTURAL IMPACT ASSESSMENT CBA

Abbey Road Redevelopment
Phase 2

2015

Pollard Thomas Edwards CBRE ATKINS ikon Mott MacDonald Farrer Huxley Associates

October 2015
CBA7595 v1B

London Borough of Camden

ARBORICULTURAL DEVELOPMENT STATEMENT

Site:
Abbey Road Redevelopment - Phase 2 and 3

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ARBORICULTURAL DEVELOPMENT STATEMENT

Arboricultural Implications Assessment and Method Statement

guided by recommendations within BS5837:2012

Client:	London Borough of Camden
Site:	Abbey Road Redevelopment
Arboricultural Consultant:	Stefan Rose *BSc (Hons), Tech Cert ArborA, TechArborA*
Date:	October 2015

SUMMARY

There is a regeneration development proposal for the Abbey Road site area at the junction of Belsize Road and Abbey Road in the London Borough of Camden. The project has been undertaken in phases; this report is relevant to the reserved matters for phase 3 and the development and full planning application for phase 2. Phase 1 has been granted planning consent and does not form part of this report.

This Arboricultural Development Statement (ADS) will demonstrate the protection measures for the trees and should be read in association with the Tree Protection Plan CBA7595.03 TPP that identifies tree retention measures. It follows the initial tree survey, implications assessment and on-going discussions to minimise the impact upon the existing tree stock.

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.

Of the 65 trees within this area of the Abbey Road Regeneration project, a total of 43 (forty three) individual trees are being retained, 18 trees will be removed for the development and 4 trees will be removed for reasons of sound arboricultural management (poor health or structural condition) regardless of any development proposals.

Of the 8 groups of trees; 5 (five) groups of trees will be retained, 1 (one) group will be removed for the development, 1 (one) group will be retained in the most part with a section of the group being removed for the proposed landscape footpath and 1 (one) group will be removed for reasons of sound arboricultural management (poor health or structural condition) regardless of any development proposals.

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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PART 1
ARBORICULTURAL IMPLICATIONS ASSESSMENT

1.0 INTRODUCTION

1.1 There is a regeneration development proposal for the Abbey Road site at the junction of Belsize Road and Abbey Road in the London Borough of Camden. The project has been undertaken in phases; this report is relevant to the reserved matters for phase 3 and the development and full planning application for phase 2. Phase 1 has been granted planning consent and does not form part of this report.

1.2 It is envisaged that the proposals will create an improved and safe streetscape for the local residents with the additional benefit of updated, improved green open space and they have been the subject of public consultations and discussions with the Local Authority.

1.3 Document disclosure provided:

- Topographical Site Survey by Farrer Huxley Associates
- 586_LF40X_Tree Removal and Retention Plan with Levels
- 586_LF201_Hardworks
- 586_LF301_Levels
- 586_LF402_Tree Removal and Retention Plan
- 5135611-ARP2-ATK-EXT-DR-MEP-4001 Rev PO1
- 5135611-ARP2-ATK-EXT-DR-MEP-4002 Rev PO1

1.4 Project consultants 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.

1.5 Our advice has been sought on the principles of the development in relation to the potential impact on the existing tree stock, to inform and to facilitate the development layout that is acceptable in arboricultural terms.

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, 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 CBA7595.01C TSP appended with the Tree Survey Schedule at CB1).
- To produce a schedule of Root Protection Areas in accordance with BS5837:2012 Annex D, appended at CB2.
- To provide Tree Constraints advice.

- 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 a Tree Protection Plan CBA7595.03 TPP appended at CB3.

2.2 The advice provided is in support of the current planning applications and has been formulated without discussion with the main construction contractors who at this stage have not been appointed. Once the main contractors are appointed, amendments to this Method Statement and an area specific report may be required for construction purposes to ensure that working methods and techniques used, minimise the impact on retained trees. All amendments will be assessed by the retained arboricultural consultant and approved in writing by London Borough of Camden.

3.0 DESCRIPTION OF THE SITE

3.1 The site is in the London Borough of Camden and is located at the junction of Abbey Road and Belsize Road. Victorian conservation areas and 20th century development surround the site with a green space to the north that is accessible to all. There are also a number of Grade II listed buildings near the site.

3.2 There are a number of existing street trees in grassed areas and in raised planters as well as in the open space. These provide a positive contribution to the street character and open space.

3.3 It should be noted that all the trees that were identified within the tree survey exercise in Phase 1 do not need to be considered as part of planning application for Phase 2 and 3 as planning consent has been granted for Phase 1 of the development. These trees are identified as Trees 1, 2, 3, 4, 5, 6, 7, 69, 70, 73 and 74.

4.0 THE TREE STOCK

4.1 A tree survey was undertaken by CBA Trees on 1st May 2013 and 15th September 2014 that identified 75 (seventy five) individual trees, 8 (eight) groups of trees and 1 (one) hedge; a Tree Survey Schedule and Plan CBA7595.01C TSP are appended at CB1.

4.1.1 It should be noted that all trees in Phase 1 do not need to be considered as part of the planning application for Phase 2 and 3. These are identified as Trees 1, 2, 3, 4, 5, 6, 7, 69, 70, 73 and 74. Therefore this report and the development of Phase 2 and 3 will relate to only 65 (sixty five) individual trees, 8 (eight) groups of trees and 1 (one) hedge from the tree survey exercise detailed above.

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. There were 3 (three) 'U' grade trees plus 1 (one) group on or adjacent to the site at the time of surveying (Trees 11, 31, 49 and Group 4 (plus the stump T52)).

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). There is 1 (one) tree considered to be within this category at the time of surveying (Tree 43).

Category B = Trees of moderate quality and value, capable of making a significant contribution for in excess of 20 years. There were 40 (forty) individual 'B' grade trees plus 3 (three) groups and 1 (one) hedge in total on or adjacent to the site at the time of surveying (Trees 8, 9, 13, 15, 16, 17, 18, 19, 19A, 22, 23, 24, 25, 26, 27, 28, 30, 32, 33, 35, 36, 38, 39, 40, 41, 42, 45, 46, 47, 50, 51, 53, 57, 58, 59, 61, 66, 67, 68 and 75 plus Groups 5, 6 and 7 and Hedge 1).

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. There were 20 (twenty) individual 'C' grade trees plus 4 (four) groups in total on or adjacent to the site at the time of surveying (Trees 10, 12, 14, 20, 21, 29, 34, 37, 44, 48, 54, 55, 56, 60, 62, 63, 64, 65, 71, 72 plus Groups 1, 2, 3, and Group 8).

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.

It should also be noted that some of the individual trees have been recommended for further investigation and therefore have been graded with an interim grade that could alter, subject to the results of the further detailed investigation being carried out as advised within the tree survey:

Trees 44, 47, 48 and 55 require further investigative works and Trees 56-69 and Tree 75 are all off-site trees so the assessment has been carried out with limited views of the trees and it is advised that if these trees are a concern to the client then they contact the tree owners.

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 CBA Trees has not been instructed to ascertain the protected status of the trees on this site, and it is important to note that before any tree works commence on site, written approval, if required, is obtained from the London Borough of Camden in regard to Tree Preservation Orders or Conservation Areas that may be in force on this site.

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) (appended at CB2). 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 development drawing 151017-fha586xr06-GA Hardworks prepared and modified, to include the relevant Tree Survey data and the information as shown on plan CBA7595.03 TPP appended at CB3.

6.3 Trees 11, 31, 49 and Group 4 plus the stump (T52) are advised for removal for reasons of sound arboricultural management, regardless of any approved development.

7.0 SUMMARY OF ARBORICULTURAL IMPLICATIONS

7.1 The following summary of implications relates to trees which will require mitigation measures to allow for construction operations:

Tree No.	Species	BS 5837:2012 Cat	Potential cause of harm	Implication	Mitigation
8	Wild Cherry *Prunus avium*	B1	• General site construction activities • General soft and hard landscaping works to existing planter and surrounding footpaths • Removal of existing hard surfacing • Construction of and working space for Phase 3 basement and new build • Footpath improvement and resurfacing works	• Retained	• Protected as detailed within Part 2 of this report • New planter retaining walls to minimise excavations • New planter levels raised by using structured soils, air pipes or similar to retain air, nutrient and water percolation • Works to be arboriculturally supervised

PART 1
ARBORICULTURAL IMPLICATIONS ASSESSMENT

Tree No.	*Species*	*BS 5837:2012 Cat*	*Potential cause of harm*	*Implication*	*Mitigation*
9	London Plane *Platanus x hispanica*	B1	• General site construction activities • General soft and hard landscaping works to existing planter and surrounding footpaths • Removal of existing hard surfacing • Construction of and working space for Phase 3 basement and new build • Footpath improvement and resurfacing works	• Retained	• Protected as detailed within Part 2 of this report • New planter retaining walls to minimise excavations • New planter levels raised by using structured soils, air pipes or similar to retain air, nutrient and water percolation • Works to be arboriculturally supervised
10	London Plane *Platanus x hispanica*	C1	• Removed to facilitate development space and landscaping improvements to footpath layout	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
11	Field Maple *Acer campestre*	U	-	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
12	Field Maple *Acer campestre*	C1	• Removed to facilitate development space and landscaping improvements to footpath layout	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal • Limited future life expectancy given the proximity of the trunk to the carriageway and kerb edge
13	False Acacia *Robinia pseudoacacia*	B1	• Under footprint of development	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
14	London Plane *Platanus x hispanica*	C1	• Under footprint of development	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
15	Purple Leaved Plum *Prunus cerasifera 'Atropurpurea'*	B1	• Under footprint of development	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
16	Field Maple *Acer campestre*	B1	• Under footprint of development	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
17	Field Maple *Acer campestre*	B1	• Under footprint of development	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
18	Field Maple *Acer campestre*	B1	• Under footprint of development	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
19	Field Maple *Acer campestre*	B1	• Under footprint of development	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
19A	Swedish Whitebeam *Sorbus intermedia*	B1	• Under footprint of development	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
20	Field Maple *Acer campestre*	C1	• Under footprint of development	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
21	Field Maple *Acer campestre*	C1	• Under footprint of development	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal

Tree No.	*Species*	*BS 5837:2012 Cat*	*Potential cause of harm*	*Implication*	*Mitigation*
22	Swedish Whitebeam *Sorbus intermedia*	B1	• Under footprint of development	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
23	Common Lime *Tilia x europaea*	B1	• General site construction activities • General soft and hard landscaping works • Removal of existing hard surfacing • Construction of and working space for community centre • Construction of footpath link to community centre • Footpath improvement and resurfacing works	• Retained	• Protected as detailed within Part 2 of this report • Crown pruning to facilitate working space • Species tolerant of pruning • Community footpath access to be constructed above the existing ground level and utilise a porous surface, minimising the extent of dig to achieve existing footpath level • Fit for purpose ground protection to be setup and maintained throughout community centre construction • Works to be arboriculturally supervised
24	Common Lime *Tilia x europaea*	B1	• General site construction activities • General soft and hard landscaping works • Removal of existing hard surfacing • Construction of and working space for community centre • Construction of footpath link to community centre • Footpath improvement and resurfacing works	• Retained	• Protected as detailed within Part 2 of this report • Crown pruning to facilitate working space • Species tolerant of pruning • Community footpath access to be constructed above the existing ground level and utilise a porous surface, minimising the extent of dig to achieve existing footpath level • Fit for purpose ground protection to be setup and maintained throughout community centre construction • Works to be arboriculturally supervised
25	Swedish Whitebeam *Sorbus intermedia*	B1	• General site construction activities • General soft and hard landscaping works • Construction of new footpath	• Retained	• Protected as detailed within Part 2 of this report • Construction of new footpath to be arboriculturally supervised

Tree No.	*Species*	*BS 5837:2012 Cat*	*Potential cause of harm*	*Implication*	*Mitigation*
26	Swedish Whitebeam *Sorbus intermedia*	B1	• General site construction activities • General soft and hard landscaping works • Removal of existing hard surfacing • Footpath improvement and resurfacing works • Installation of su-station	• Retained	• Protected as detailed within Part 2 of this report • Hard surfacing to be retained around tree during major construction works to act as ground protection and then removed and replaced as part of the landscape improvement works • Removal of and replacement of hard surfacing to be arboriculturally supervised
27	Common Lime *Tilia x europaea*	B1	• General site construction activities • General soft and hard landscaping works • Removal of existing hard surfacing • Footpath improvement and resurfacing works • Construction of extended raised planter • Demolition of existing raised planter wall	• Retained	• Protected as detailed within Part 2 of this report • Hard surfacing to be retained outside planter during major construction works to act as ground protection and then removed and replaced as part of the landscape improvement works • Tree grows in raised planter • Construction of extended raised planter to be arboriculturally supervised • Demolition of existing raised planter wall to be arboriculturally supervised • Only a vertical dig method to be used - no battering back of soil

Tree No.	*Species*	*BS 5837:2012 Cat*	*Potential cause of harm*	*Implication*	*Mitigation*
28	Common Lime *Tilia x europaea*	B1	• General site construction activities • General soft and hard landscaping works • Removal of existing hard surfacing • Footpath improvement and resurfacing works • Construction of new footpath link through raised planter	• Retained	• Protected as detailed within Part 2 of this report • Hard surfacing to be retained outside planter during major construction works to act as ground protection and then removed and replaced as part of the landscape improvement works • Tree grows in raised planter • Footpath link works to be arboriculturally supervised • Only a vertical dig method to be used no battering back of soil
29	Silver Birch *Betula pendula*	C1	• Removed to facilitate development space and landscaping improvements to footpath and footpath links	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
30	Common Lime *Tilia x europaea*	B1	• General site construction activities • General soft and hard landscaping works • Removal of existing hard surfacing • Footpath improvement and resurfacing works • Construction of new footpath link through raised planter	• Retained	• Protected as detailed within Part 2 of this report • Hard surfacing to be retained outside planter during major construction works to act as ground protection and then removed and replaced as part of the landscape improvement works • Tree grows in raised planter • Footpath link works to be arboriculturally supervised • Only a vertical dig method to be used no battering back of soil
31	Common Lime *Tilia x europaea*	U	-	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal

Tree No.	Species	BS 5837:2012 Cat	Potential cause of harm	Implication	Mitigation
32	Common Lime *Tilia x europaea*	B1	• General site construction activities • General soft and hard landscaping works • Removal of existing hard surfacing • Footpath improvement and resurfacing works	• Retained	• Protected as detailed within Part 2 of this report • Hard surfacing to be retained outside planter during major construction works to act as ground protection and then removed and replaced as part of the landscape improvement works • Tree grows in raised planter that shall be retained
33	Common Lime *Tilia x europaea*	B1	• General site construction activities • General soft and hard landscaping works • Removal of existing hard surfacing • Footpath improvement and resurfacing works	• Retained	• Protected as detailed within Part 2 of this report • Hard surfacing to be retained outside planter during major construction works to act as ground protection and then removed and replaced as part of the landscape improvement works • Tree grows in raised planter
34	Common Lime *Tilia x europaea*	C1	• General site construction activities • General soft and hard landscaping works • Removal of existing hard surfacing • Construction of and working space for health centre • Footpath improvement and resurfacing works	• Retained	• Protected as detailed within Part 2 of this report • Hard surfacing to be retained during construction works to act as ground protection and then removed as part of the landscape improvement works • Crown pruning to facilitate working space
35	Beech *Fagus sylvatica*	B1	• General site construction activities • General soft and hard landscaping works • Removal of existing hard surfacing • Construction of and working space for health centre • Footpath improvement and resurfacing works	• Retained	• Protected as detailed within Part 2 of this report • Hard surfacing to be retained during construction works to act as ground protection and then removed as part of the landscape improvement works • Crown pruning to facilitate working space
36	Silver Birch *Betula pendula*	B1	• Under footprint of development for footpath improvement works	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal

Tree No.	*Species*	*BS 5837:2012 Cat*	*Potential cause of harm*	*Implication*	*Mitigation*
37	Common Lime *Tilia x europaea*	C1	• Under footprint of development for health centre proposals	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
38	Common Lime *Tilia x europaea*	B1	• General site construction activities • General soft landscaping works • Removal of existing hard surfacing and resurfacing • Construction working space for health centre • Footpath improvement and resurfacing works	• Retained	• Protected as detailed within Part 2 of this report • Hard surfacing to be retained during construction works to act as ground protection and then removed as part of the landscape improvement works
39	Common Lime *Tilia x europaea*	B1	• General site construction activities • General soft landscaping works • Removal of existing hard surfacing and resurfacing • Construction working space for health centre	• Retained	• Protected as detailed within Part 2 of this report • Hard surfacing to be retained during construction works to act as ground protection and then removed as part of the landscape improvement works • Crown pruning to facilitate working space
40	Common Lime *Tilia x europaea*	B1	• General site construction activities • General hard landscaping works to existing footpath • Construction of car park to north and car park access to east	• Retained	• Protected as detailed within Part 2 of this report • Minimal intrusion of root protection area will not be detrimental to the long term health of the tree
41	Common Lime *Tilia x europaea*	B1	• Unaffected by development • General site construction activities • General hard landscaping works to existing footpath • Construction of car park to north and east of root protection area	• Retained	• Protected as detailed within Part 2 of this report • Works to be arboriculturally supervised

Tree No.	Species	BS 5837:2012 Cat	Potential cause of harm	Implication	Mitigation
42	Common Lime *Tilia x europaea*	B1	• General site construction activities • General hard landscaping works to existing footpath • Construction of car park to north and car park access to east	• Retained	• Protected as detailed within Part 2 of this report • Car parking bays to be constructed above the existing ground level and utilise a porous surface • Car park access be constructed above the existing ground level and utilise a porous surface, minimising the extent of dig to achieve existing footpath level • Works to be arboriculturally supervised
43	Common Sycamore *Acer pseudoplatanus*	A1	• General site construction activities • General soft landscaping works • Removal of existing hard surfacing on edge of root protection area and resurfacing • Construction working space for health centre	• Retained	• Protected as detailed within Part 2 of this report • Hard surfacing to be retained during construction works to act as ground protection and then removed as part of the landscape improvement works • Crown pruning to facilitate working space
44	Common Ash *Fraxinus excelsior*	C1	• Unaffected by development • General site construction activities • General soft landscaping works	• Retained	• Protected as detailed within Part 2 of this report
45	Common Sycamore *Acer pseudoplatanus*	B1	• Under footprint of development	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
46	Common Sycamore *Acer pseudoplatanus*	B1	• General site construction activities • Removal of existing play equipment and surfacing • Construction works of landscape footpath and bench • General soft landscaping works	• Retained	• Bench to be installed using hand dug foundations only • Protected as detailed within Part 2 of this report
47	Common Sycamore *Acer pseudoplatanus*	B1	• General site construction activities • Removal of existing play equipment and surfacing • General soft landscaping works	• Retained	• Protected as detailed within Part 2 of this report

Tree No.	Species	BS 5837:2012 Cat	Potential cause of harm	Implication	Mitigation
48	Pear *Pyrus spp*	C1	• General site construction activities • Removal of existing play equipment and surfacing • Construction works of landscape footpath • General soft landscaping works	• Retained	• Section of footpath within root protection area to be constructed above existing ground level • Bench to be installed using hand dug foundations only • Protected as detailed within Part 2 of this report
49	Purple Norway Maple *Acer platanoides 'Crimson King'*	U	-	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
50	Crack Willow *Salix fragilis*	B1	• General site construction activities • Removal of existing play equipment and surfacing • Construction works of landscape footpath and bench • General soft landscaping works	• Retained	• Section of footpath within root protection area to be constructed above existing ground level • Bench to be installed using hand dug foundations only • Protected as detailed within Part 2 of this report
51	Norway Maple *Acer platanoides*	B1	• Removed to facilitate landscaping improvements	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
52	Stump	-	-	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
53	Common Lime *Tilia x europaea*	B1	• General site construction activities • Removal of existing play equipment and surfacing • General soft landscaping works	• Retained	• Section of footpath within root protection area to be constructed above existing ground level • Protected as detailed within Part 2 of this report
54	Common Lime *Tilia x europaea*	C1	• General site construction activities • Removal of existing play equipment and surfacing • General soft landscaping works	• Retained	• Section of footpath within root protection area to be constructed above existing ground level • Protected as detailed within Part 2 of this report
55	Pear *Pyrus spp*	C1	• General site construction activities • Removal of existing play equipment and surfacing • General soft landscaping works	• Retained	• Section of footpath within root protection area to be constructed above existing ground level • Protected as detailed within Part 2 of this report
56	Flowering Cherry *Prunus spp*	C1	• General site construction activities • Construction of and working space for community centre	• Retained	• Protected as detailed within Part 2 of this report • Crown pruning to facilitate working space • Offsite tree

Tree No.	Species	BS 5837:2012 Cat	Potential cause of harm	Implication	Mitigation
57	Common Sycamore *Acer pseudoplatanus*	B1+2	• Unaffected by development	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report
58	Common Sycamore *Acer pseudoplatanus*	B1+2	• Unaffected by development	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report
59	Common Ash *Fraxinus excelsior*	B1+2	• General site construction activities • Demolition works • Construction works and removal of existing hard surfacing	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report
60	Common Ash *Fraxinus excelsior*	C1+2	• General site construction activities • Demolition works • Construction works and removal of existing hard surfacing	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report
61	Common Sycamore *Acer pseudoplatanus*	B1+2	• General site construction activities • Demolition works • Construction works and removal of existing hard surfacing	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report
62	Common Sycamore *Acer pseudoplatanus*	C1+2	• General site construction activities • Demolition works • Construction works and removal of existing hard surfacing	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report
63	Common Sycamore *Acer pseudoplatanus*	C1+2	• General site construction activities • Demolition works • Construction works and removal of existing hard surfacing	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report
64	Common Lime *Tilia x europaea*	C1+2	• General site construction activities • Demolition works • Construction works and removal of existing hard surfacing	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report
65	Goat Willow *Salix caprea*	C1+2	• General site construction activities • Demolition works • Construction works and removal of existing hard surfacing	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report
66	Common Lime *Tilia x europaea*	B1+2	• General site construction activities • Demolition works • Construction works and removal of existing hard surfacing	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report

PART 1
ARBORICULTURAL IMPLICATIONS ASSESSMENT

Tree No.	*Species*	*BS 5837:2012 Cat*	*Potential cause of harm*	*Implication*	*Mitigation*
67	Norway Maple *Acer platanoides*	B1+2	• General site construction activities • Demolition works • Construction works and removal of existing hard surfacing	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report
68	Common Ash *Fraxinus excelsior*	B1+2	• General site construction activities • Demolition works • Construction works and removal of existing hard surfacing	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report
71	Common Ash *Fraxinus excelsior*	C1	• Unaffected by development • General site construction activities • General soft landscaping works	• Retained	• Protected as detailed within Part 2 of this report
72	Common Sycamore *Acer pseudoplatanus*	C1	• Unaffected by development • General site construction activities • General soft landscaping works	• Retained	• Protected as detailed within Part 2 of this report
75	Gum *Eucalyptus spp*	B1	• Unaffected by development	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report
Grp 1	Goat Willow	C1	• Under footprint of development • Removed to facilitate development space and landscaping improvements to footpath and footpath links	• Fell to ground level and grind out stump	• Replacement planting as per the landscape proposal
Grp 2	Common Sycamore x2 Common Beech x1	C1+2	• Unaffected by development • General site construction activities • General soft landscaping works	• Retained	• Protected as detailed within Part 2 of this report
Grp 3	Common Sycamore Elder Poplar Common Ash	C1	• Section under footprint of development for landscape informal footpath • General site construction activities • General soft landscaping works	• Retained in part	• Remove section of group once footpath has been set out • Protected as detailed within Part 2 of this report
Grp 4	Field Maple x2	U	-	• Fell to ground level and grind out stumps	• Replacement planting as per the landscape proposal
Grp 5	Lime x4	B2	• Unaffected by development • General site construction activities • General soft landscaping works	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report

PART 1
ARBORICULTURAL IMPLICATIONS ASSESSMENT

Tree No.	*Species*	*BS 5837:2012 Cat*	*Potential cause of harm*	*Implication*	*Mitigation*
Grp 6	Common Sycamore	B2	• Unaffected by development • General site construction activities • General soft landscaping works	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report
Grp 7	Elder Common Sycamore Lime	B2	• Unaffected by development • General site construction activities • General soft landscaping works	• Retained	• Protected as detailed within Part 2 of this report
Grp 8	Lawson Cypress	C2	• Unaffected by development • General site construction activities • General soft landscaping works	• Retained	• Offsite trees protected by existing boundary wall • Protected as detailed within Part 2 of this report
H1	Hawthorn	B2	• Section under footprint of development for car park access • General site construction activities • General soft landscaping works	• Retained in part	• Remove section of hedge as indicated on Tree Protection Plan CBA7595.03 TPP • Protected as detailed within Part 2 of this report

8.0 PRE-COMMENCEMENT SITE MEETING

8.1 It is recommended that a pre-commencement site meeting should 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 Camden. 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.

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 any works are required to retained trees protected by a TPO or within a Conservation Area, prior to full planning permission being granted, written approval must be obtained in advance from London Borough of Camden.

10.4 Consideration should be given to the timing of the proposed 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 official 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 if 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 which 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 European Habitats Directive 1992/Nesting Birds Directive*.

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 Camden prior to these additional works being undertaken.

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

11.0 TREE PROTECTION MEASURES

11.1 *Purpose of Tree Protection*

All site operations will be planned, implemented and supervised so as to prevent the following:

- 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 *Tree Protection*

Before starting demolition works tree protection will be installed in accordance with Tree Protection Plan CBA7595.03 TPP (appended at CB3). This will occur

immediately following the completion of tree works and prior to any site preparation works starting.

During the demolition process it will be necessary to install protective barriers and ground protection in such locations as to allow demolition of existing structures and the removal of hard surfacing. Several phases of barriers may be required to ensure retained trees are undamaged. Positioning and phasing of protection will be in accordance with Plan CBA7595.03 TPP. If amendments to the locations of these barriers are required once the contractors have been appointed then, advice from the project arboricultural consultant and written approval from London Borough of Camden will be required.

Once site preparation has been complete and all demolition and ground remediation works have been completed; tree protection for the construction phase will be implemented in accordance with Plan CBA7595.03 TPP.

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

Barriers will remain *in-situ* until demolition/construction works are complete and all demolition/construction waste, plant and machinery are removed from site or otherwise agreed with London Borough of Camden.

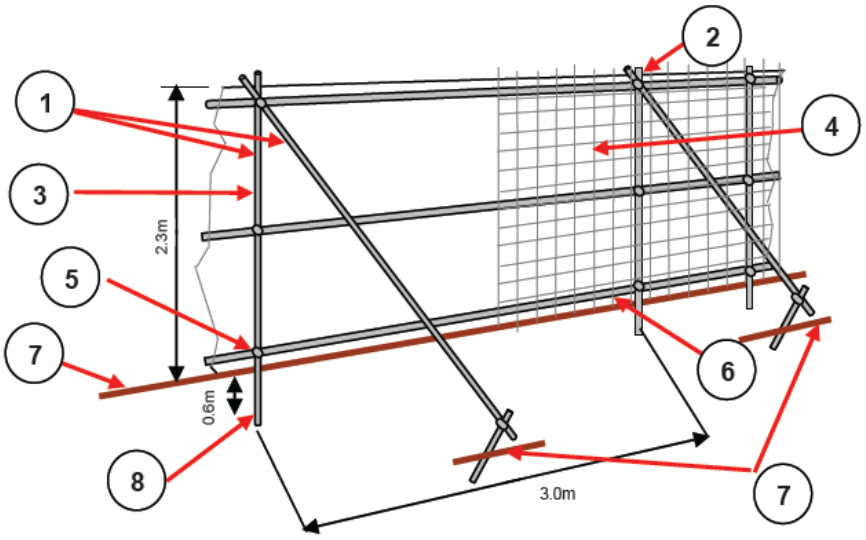
11.3 *Standard Protective Barriers*

Where trees are adjacent to areas of development activity they will be protected by installing the following protective barrier as indicated on Tree Protection Plan CBA7595.03 TPP. 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.

In accordance with Section 6.2.2.4 of BS5837:2012, weldmesh panels on rubber or concrete feet are not resistant to impact, and will not be used for tree protection purposes.

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 barriers:

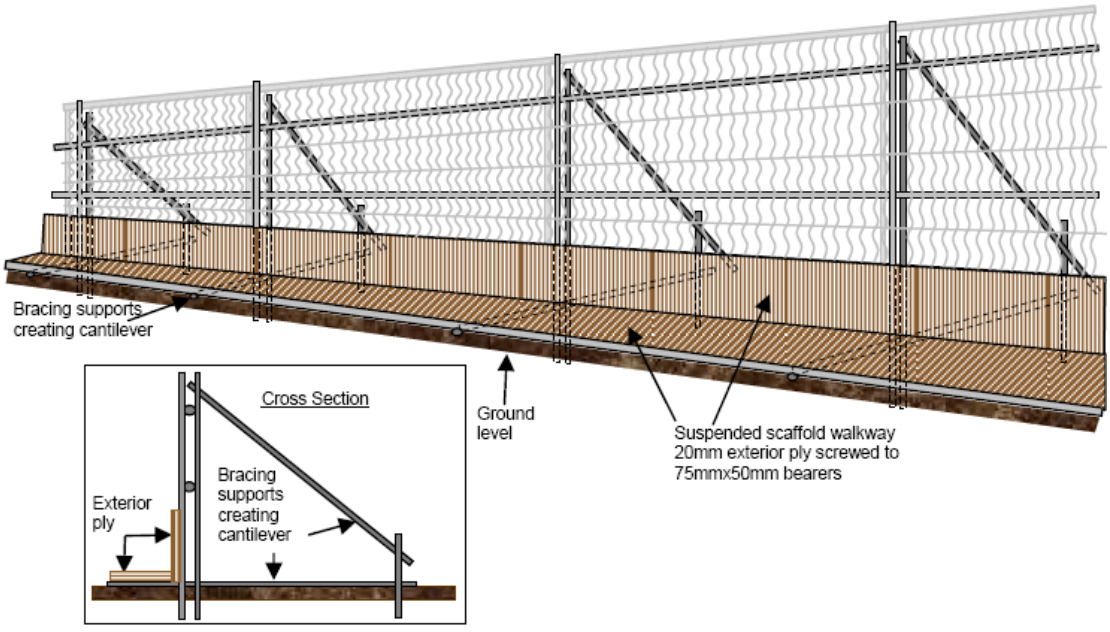
11.4 Ground Protection

Pedestrian movements

Retained Trees 23 and 24 require construction activity within the identified Construction Exclusion Zone (CEZ) and ground protection will be established for these trees as per the Tree Protection Plan CBA7595.03 TPP.

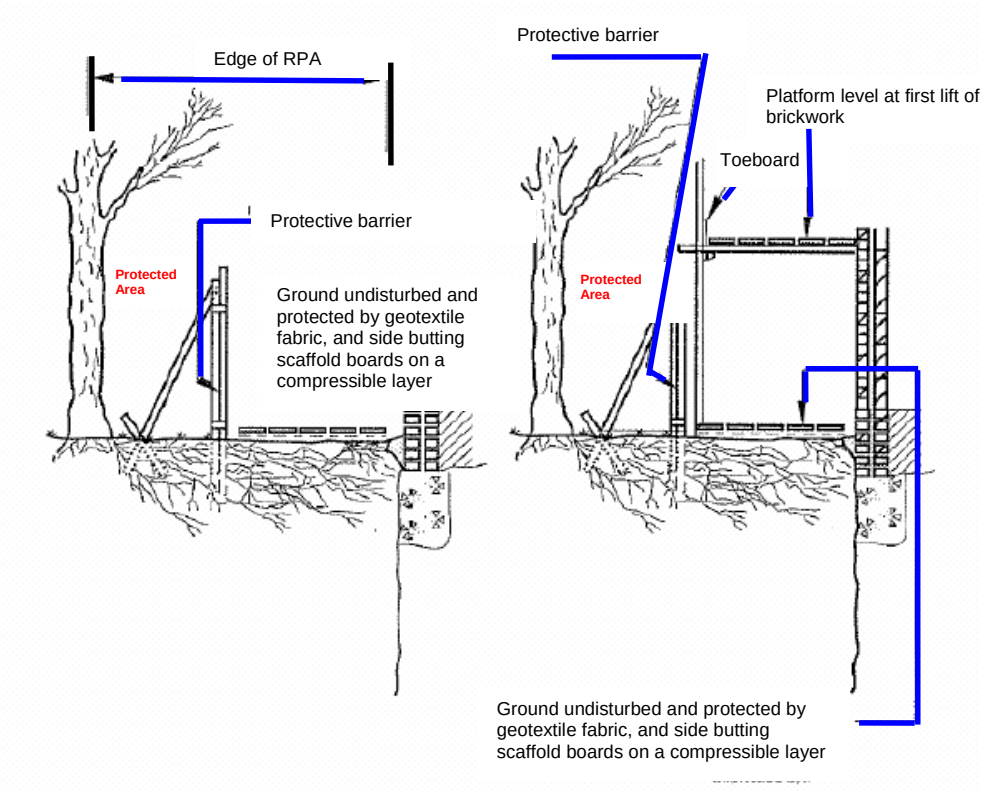
Ground protection will be constructed in accordance with Figure 2 below, and consist of a suspended walkway decked with 20mm exterior grade plyboard supported on 75 x 50mm bearers. The specification provides for pedestrian access only.

Figure 2: Pedestrian walkway within the Root Protection Area



An alternative approach is provided (Figure 3 below). This method will allow for pedestrian construction and working space within the CEZ of Trees 23 and 24. This method will consist of a single thickness of butt jointed scaffold boards supported on a 150mm thick layer of composted woodchip which is prevented from mixing with the underlying soil by geotextile separation layer.

Figure 3: Ground Protection Specification



Site and Machinery Access within Construction Exclusion Zone

At this stage, no information has been provided as to the type, weight or ground pressure of the equipment to be deployed, and therefore the exact type of ground protection is yet to be specified. 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 Camden tree officer.

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.

Ground protection will consist of hardwood Eki Mats. These mats are suitable for rubber tyre vehicles and should be laid to form a single track of either 3m or 5m width.

As a guide only, these mats may be used to support evenly distributed weights of up to 21 tonne for 3m and 35 tonne for 5m depending on ground conditions on site.

Example of Eki mats in use

Ground protection will consist of an aluminium preparatory Trackway system e.g. Eve Trackway. This trackway consists of extruded aluminium planks that are connected to create this high capacity panel that has a corrugated surface to aid vehicle traction. By interconnecting panels in any combination of widths and layers, the heavy-duty system provides guaranteed access for any load, up to 1000 tonnes.

Example of Eve Trackway in use

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 Camden tree officer.

Once the barriers and ground protection are in place they 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

The area within the CEZ 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 Camden. An example of a CEZ notice is appended at CB5.

12.0 DEMOLITION

12.1 Demolition works within Phase 2 and 3, or removal of existing surface structures, will be carried out so as to prevent damage to existing retained trees.

12.2 Demolition of the structures 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 which 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 CBA…

- 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.

13.0 REMOVAL OF BUILT FORM AND HARD SURFACES IN CLOSE PROXIMITY TO RETAINED TREES

13.1 Removal of existing surfacing, built forms or other excavations within the CEZ of retained trees, must be undertaken by hand (where feasible and in line with Health

and Safety polices) to avoid any surface root damage, and shall be supervised on-site by the retained arboricultural consultant.

13.2 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.

13.3 If the area of the zone of protection around the retained trees is to be left following the removal of the existing hard surface, and before a new hard surface is laid, or the area receives soft landscaping treatment, then ground/tree protection MUST be correctly re-established immediately the hard surface removal work has been completed.

13.4 If there is a delay, for whatever reason, and the area that was previously protected by hard surfacing is left exposed awaiting a new surface, a temporary surface must be implemented, and/or Hessian sacking must be placed over any exposed roots.

14.0 EXISTING SERVICES

14.1 Information has been provided on the location of existing services as detailed in section 1. Where existing services are within the RPA and CEZ of retained trees, they will not be chased out, but cut at the edge of any structure/edge of the RPA/CEZ and left *in- situ.*

14.2 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.

14.3 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.

15.0 AVOIDING DAMAGE TO STEMS AND BRANCHES

15.1 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.

16.0 VEHICULAR MOVEMENTS

16.1 There should be minimal vehicular movement in the potential rooting zone outside the CEZ identified on Plan CBA7595.03 TPP.

16.2 It is not anticipated that there will be a need for excess vehicular movement on soft ground near the retained trees, given that there is established access and areas of existing hard surfacing within the site which are suitable for the purpose.

17.0 SITING OF TEMPORARY OFFICES, TOILETS AND MATERIAL STORAGE COMPOUNDS

17.1 It is anticipated that all storage materials and deliveries shall make use of the existing access and hard surfaces within the site confines, in order to avoid unnecessary damage to tree roots.

17.2 The locations shall be agreed in writing with London Borough of Camden 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 Camden. 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.

17.3 ***Site Huts***

All site huts (if required) that are to be situated on ground that is not existing hard surfacing, 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.

17.4 ***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.

18.0 GENERAL CONSIDERATIONS WITHIN AND OUTSIDE THE CONSTRUCTION EXCLUSION ZONE

18.1 Inside the CEZ formed by the protective barrier and ground protection 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 Camden prior to the specific activity taking place.

18.2 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)

19.0 UTILITY SERVICE CONNECTIONS

19.1 Details of service location proposals have been forwarded to CBA Trees as detailed in section 1 while compiling this assessment. The retained trees have been considered in the location of the proposed utilities and have been located where possible to accommodate them, this will avoid disturbance of tree roots and ensure their healthy retention.

19.2 Services within the CEZ of these trees will be installed under the supervision of the retained Arboricultural consultant. Ideally, services will be installed at a depth greater than 1 metre using trenchless techniques such as moling, directional drilling or laser guided boring.

19.3 Where such techniques are not practical or cost affective services will be installed in accordance with the following specification where practical:

All required excavation for service installation within the CEZ of 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

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 damagewith wet Hessian and split plastic pipe

Photograph 4:

Trench sides protected from drying by wet Hessian

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.

All trenches containing exposed tree roots must not 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, trench sides will be draped with damp Hessian to reduce the potential for root tip death through lack of moisture.

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.

Where it is found that roots greater than 25mm extend through the foundation, the area around the roots will be shuttered to provide 150mm clearance all round, with lintels placed over the roots. Provision will be made for drainage and irrigation by the insertion of 50mm plastic pipe at 500mm centres above and below the root. The upper pipes will be connected to rainwater discharge pipes, whilst the lower pipes will be connected to adjacent land drains or soak-aways.

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

20.0 INSTALLATION OF HARD SURFACING IN CLOSE PROXIMITY TO RETAINED TREES

20.1 Where no-dig hard surfaces are to be installed within the RPA of retained trees (Trees 23, 24 and 42), these surfaces must comply with the following requirements:

- The proposed hard surface will consider site-specific factors and will be designed in accordance with advice from a structural engineer drainage engineer and arboricultural consultant. This will result in a design which 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 which does not inhibit gaseous exchange (such as no-fines gravel, washed aggregate or cobbles).
- Sub-base 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 no-dig hard 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.

- If water logging is likely to be a concern on a site, any proposed no-dig hard surfacing should be designed to direct water away from the base of the tree or provision made for the inclusion of surface water drainage.

- Any proposed no-dig 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.

20.2 Wearing courses which could be installed over the granular material include:

- Paving Slabs and Pavers – These can be installed with infiltration spaces between the slabs, and should be installed dry-jointed and on a sharp sand-foundation.

- Bitumen Paving – If implemented, this must be of a porous construction however, such surfaces will eventually become clogged with silt, and provision must be made for regular vacuum sweeping within the future maintenance of the surface or be installed in a similar way to the in-situ concrete, or be limited to less than 20% of the RPA.

- Other surfaces may be used but the final design of any no-dig hard surface should always be in agreement with a structural engineer and the retained arboriculturist.

If edge supports are required, they will be designed so as not to require any excavation of the existing soil surface, and should be in the form of either wooden 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.

Construction of the surface will be considered at the design stage. All work will need to be completed, either from existing hard surface, or as a rolling construction working from the finished hard surface to avoid the need for additional ground protection. This will prevent damage to the roots and rooting environment of retained trees.

21.0 GROUND LEVEL ALTERATIONS

21.1 Soft ground levels will be increased within the CEZ of Trees 23 and 24 which are to be retained (not including hard surfaces using no dig or minimal dig construction techniques).

21.2 Level increases can be achieved providing they are carefully designed and constructed to meet the immediate and long-term biological requirements of the trees. These requirements include:

- Preventing physical damage to roots
- Allowing water and oxygen to reach the existing rooting environment
- Preventing the build-up of carbon dioxide within the existing soil
- Allowing for future growth
- Preserving the soil structure within the existing rooting environment (particularly with clay soils)
- Preventing soil compaction

21.3 The increase in ground levels will require the removal of the protective barriers indicated on CBA Tree Protection Plan CBA7595.03 TPP.

21.4 Increasing levels within the CEZ will, wherever possible, be carried out during dry weather when the soil is not saturated, so as to preserve the existing soil structure.

21.5 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 construction of the tree protection retaining wall and initial layer installation.

21.6 In all cases, existing vegetation (grass turf and any shrubs) will be removed to ground level by hand, following treatment with a suitable systemic herbicide which is not toxic to existing retained trees. This prevents the build-up of methane formed as part of the composition process.

21.7 Increases can be accommodated by the use of good quality topsoil and the use of a specialist high sand content tree soil. The soil will be installed by either:

- Loose tip and manual installation; or
- Placed using a 360° excavator operating outside of the construction exclusion zone and under the control of a banks person to prevent damage to the trunk and branches of the retained trees.
- Soil will be placed no closer than 500mm from the base of the tree, and may be lightly tamped to remove significant voids prior to being raked level before final landscaping.

- The retaining structures will be designed to be free standing on the existing ground surface utilising the foundations or be designed to minimise the excavation by using mini pile type design and above ground, ground beam.
- Prior to installation root mapping will be carried out to identify the least damaging location for pile installation.
- Void formers and root bridges will be incorporated into the ground beam and/or the retaining structure to allow for future growth and prevent damage where necessary.
- Drainage will be installed to prevent flooding of the void around the trunk of retained trees.
- A series of 150mm diameter interconnected perforated pipes will be laid over the membrane at spacings of not less than 1.5 metres. The system will incorporate vertical aeration pipes at centres of not more than 3 metres across the entire network.
- The ground pipes and membrane will be covered with 40-60mm no fines angular stone or clean cobbles to a minimum depth of 400mm. Stone will be placed using a 360° excavator operating outside of the construction exclusion zone and under the control of a banks person to prevent damage to the trunk and branches of the retained tree.
- A geotextile separation layer will be placed over the stone to prevent contamination and eventual filling of voids with fines material.
- On completion, the pipe ends will be finished with a suitable grill or perforated capping stone to the landscape architects specification. Examples of suitable grills are shown below.

22.0 INSTALLATION OF BOUNDARY FENCES

22.1 Where boundary fences are proposed/replaced within the CEZ of retained trees. 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 designed and constructed in accordance with the following specification:

- Fencing will be designed so as to minimise the need for excavation and allow minor variations of up to 300mm between post spacings to allow repositioning of posts to permit the retention of all roots which are greater than 25mm which are discovered during the excavation of post holes within the RPA of retained trees.

- Fencing will be installed during periods 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 to prevent compaction of the rooting environment of retained trees. This may take the form of robust plywood boards.

- Post holes will be located within the original post holes so that no further excavation are required and that tree roots remain undisturbed. Where posts are relocated due to the size of the trunks of trees, new post holes will be carefully excavated by hand to avoid damage to roots greater than 25mm in diameter.

- Post holes lined with heavy gauge polythene to prevent contamination of the rooting environment from drying concrete do not 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 will be in accordance with the approved landscape plan, and any specification of such works approved by the London Borough of Camden.

23.2 All landscaping will accord with following requirements:

- Landscaping works are to be carried out within the CEZ of trees after the main phase of demolition and/or 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 construction exclusion zone will remain off limits for all site plant and machinery unless fit for purpose ground protection is installed or existing or new hard surfacing areas are to be utilised. Pedestrian traffic must be kept to an absolute minimum on soft ground and only permitted for the ground preparation and landscape installation works.

- 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.

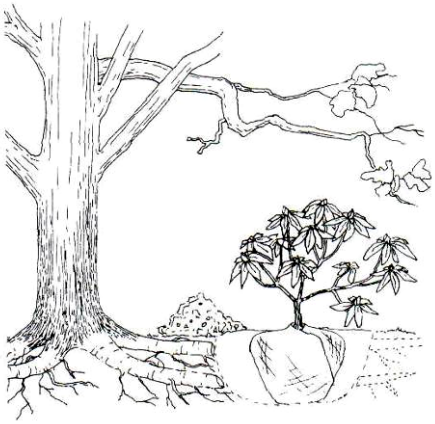


Figure 4:

Root severance as a result of planting within RPA

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

- 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.

23.3 Installation of turf within the CEZ will require that:

- In all cases, existing vegetation will be removed to ground level by hand following treatment with a suitable systemic herbicide which is not toxic to existing retained trees. This prevents the build-up of methane formed as part of the composition process.

- Stumps 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.

23.5 All work specified in the approved landscaping scheme shall be carried out before the end of the first planting and seeding season, following the occupation of any completed part of the development.

23.6 Any existing tree shown to be retained, or trees and shrubs to be planted as part of the landscaping scheme that are removed, die, become severely damaged beyond recovery or diseased within 2-5 years of the completion of the development (dependent on planning conditions), shall be replaced with trees or shrubs of appropriate size and species that complement the existing tree stock, within the next planting season. Where the trees in question are protected by planning controls, the local planning authority should be informed and necessary arrangements made prior to such work.

24.0 SITE MONITORING AND SUPERVISION

24.1 It is recommended that on-going arboricultural site monitoring takes place for the duration of the proposed development, to be carried out by a qualified and experienced arboriculturist at pre-determined and agreed time intervals, and governed by the type, timing, location and intensity of site works. London Borough of Camden to Condition site monitoring if required.

24.2 If Conditioned, it will take the form of regular inspections (to be agreed, but at least one visit per month during the construction phase of the development is advised, together with additional visits to supervise works with the CEZ of retained tree/s), the aim of the visits is to maintain on-going liaison with all personnel involved in the site development, London Borough of Camden and its Tree Officer.

24.3 Any defects requiring rectification shall be notified to the Contractor/Site Manager and the client.

24.4 In addition to the monthly unannounced visits by the arboriculturist, a site logbook for tree protection measures is to be kept to record all stages of the development from the tree clearance works, erection of the protective barriers and ground protection, the adjustment of fencing for installation of footpaths right through to the completion of the project. This log book will record that a weekly check has been made and that the protective measures are in-situ and are fit for purpose. If for any reason damage has been noted an action to remedy this will be recorded. This will be made available to the arboricultural consultant and London Borough of Camden if required, to show evidence of continuous site monitoring.

Example pro-forma

Date	Activity	Checked	Comments/ damage noted	By whom	Signed	Action taken
	Tree clearance works					
	Erection of protective barriers					
	Inspection of protective barriers					

24.5 The London Borough of Camden Tree Officer (or appropriate representative) will have access to the site at all times for ad hoc site visits, and will report on any problem areas directly to the developer's retained arboriculturist, who will then visit the site and make recommendations to the developer on how best to rectify the situation and ensure the implementation.

24.6 Where work will be carried out within the protected areas of retained trees, specific and additional arboricultural site supervision will be required. The retained arboriculturist will be informed of the works with sufficient time to allow supervision to

be booked without delaying the project; therefore this may require notification of the intent to carry out the works at the monthly site visit ahead of the planned works.

24.7 Site specific arboricultural supervision will be required for works adjacent to Trees 8, 9, 23, 24, 26, 27, 28, 30, 32, 33, 34, 35, 38, 39, 40, 42 plus Trees 59-69.

24.8 It may of course be entirely appropriate to combine a monthly site visit with a site specific supervision visit or combine site specific supervision visits should the timing of works and visits of such be correct. Wherever possible this action will be taken.

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 Camden.

25.2 Should protective barriers become damaged so as to impair its function in protecting trees, all work shall cease in the vicinity of the damage, until the fence has been returned to standard.

26.0 PHASING OF DEVELOPMENT

26.1 The process of the development should follow that of Figure 1 of BS5837:2012 (appended at CB6), in addition to any additional site-specific considerations and factors that need to occur, or be implemented in any one phase.

26.2 Existing trees on and adjacent to the site have been broadly assessed in accordance with BS5837:2012. At the survey and design stages, consideration has been given to the possible implications of development on existing trees, and how these effects can be minimised.

26.3 Compliance with this Method Statement will ensure that all retained trees on and adjacent to the site are maintained in a healthy and safe condition, both during and post construction.

26.4 There are several phases of development on this site, each phase will follow the above process to ensure that detrimental effects to retained trees and landscape areas are minimised.

27.0 CONSTRUCTION WORK TIMINGS

27.1 This is for determination by London Borough of Camden.

28.0 REMOVAL OF PROTECTIVE BARRIERS

28.1 When the 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 barriers will be dismantled.

28.2 This fence dismantling 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.

29.0 COMPLETION MEETING

29.1 Upon completion of all the works specified above, and in line with procedures also specified, the retained arboricultural consultant will invite London Borough of Camden's Tree Officer to meet on site, to discuss the project and to agree on any remedial works required.

30.0 FUTURE MANAGEMENT AND POST DEVELOPMENT TREE MANAGEMENT

30.1 The site owner will be under an obligation to maintain and manage the tree stock on site, and should seek to address this obligation through having regular tree inspections by a suitably qualified arboricultural consultant.

30.2 At Section 8.8 of BS5837:2012, emphasis is placed on the aftercare of trees following completion of development works. Whilst we support these recommendations, this is a matter for our clients to consider and for London Borough of Camden to determine whether they wish to apply a Condition relating to this aspect of work.

Post development management of BS5837:2012 (extract shown on next page):

8.8.3 Post-development management: existing trees
*A programme of inspections to advise on any necessary work to retained trees should be drawn up in conjunction with an arboriculturist. This programme might include recommendations for frequency of inspection and/or proposals for tree work [see Note to **5.3.4**c)], and should take the form of a management plan. A copy of this plan should be supplied to all parties with an interest in future site management.*
NOTE 1 Trees growing on a site before development takes place can, if adversely affected, be in decline over a period of several years before they die.
NOTE 2 Where the trees in question are subject to legal, planning or other regulatory controls, the appropriate authority needs to be informed and any necessary agreements obtained prior to work being undertaken.
8.8.4 Post-development management: new plantings
***8.8.4.1** Regular maintenance of newly planted trees is of particular importance for at least three years during the critical post-planting period and might, where required by site conditions, planning requirements or legal agreement, be for 5 years or more. A detailed maintenance schedule covering this period should be prepared in conjunction with the landscape design proposals, and appropriate arrangements made for its implementation.*
NOTE Maintenance operations would normally include weed control and watering as necessary, inspection and adjustment of support systems and monitoring of growth. Formative pruning might also be required to achieve desired effects or to provide for access or clearance.
***8.8.4.2** Defects that become apparent during the maintenance period should be addressed by appropriate remedial works (including replacement planting where necessary) as advised by a competent person.*

31.0 CONCLUSIONS

31.1 The approved development proposals for the regeneration of the Abbey Road Redevelopment (Phases 2 and 3) have been assessed broadly in accordance with BS5837:2012 *"Trees in Relation to Design, Demolition and Construction – Recommendations"*.

31.2 It is our opinion that the trees identified for retention can be afforded due respect and provided adequate protection, ensuring their safe and healthy retention during the development process.

31.3 Of the 65 trees, a total of 43 (forty three) individual trees can be retained, 18 trees will be removed for the development and 4 trees will be removed for reasons of sound arboricultural management (poor health or structural condition) regardless of any development proposals.

31.4 Of the 8 groups of trees, 5 (five) groups of trees will be retained, 1 (one) group will be removed for the development, 1 (one) group will be retained in the most part with a section of the group being removed for the proposed landscape footpath and 1 (one) group will be removed for reasons of sound arboricultural management (poor health or structural condition) regardless of any development proposals.

31.5 Hedge 1 will be retained in the most part but have a small section removed on the easternmost end of the hedge to allow for new car park access to be established.

31.6 It is our opinion that the loss of the trees, group of trees (or part of) and the small section of hedge will not have a detrimental effect on the local visual amenity or significantly alter the visual treed character of the local area in the long term, as the soft and hard landscaping scheme that has been designed to account for the retained trees (and loss of trees) that includes quality tree planting, selected to suit the site conditions and the space available, will be implemented as part of the regeneration of the Abbey Road site.

31.7 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.

32.0 CONTACT LIST

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

- Arboricultural Consultant
- Project Architect
- Highways Engineer
- Structural Engineer
- Drainage Engineer
- Landscape Architects
- London Borough of Camden's Tree Officer
- London Borough of Camden's Planning Case Officer
- Site Supervisor and Foreman

32.2 It is advised that the site supervisor establishes their own listing of contact details at the pre-start site meeting, and displays this in their office for general use as necessary.

33.0 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

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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.

BS5837:2012 TREE SURVEY SCHEDULE

Client:	London Borough of Camden	**Site:**	Abbey Road, Camden, London
Date:	Original survey: 1 May 2013 Re-survey of selected trees: (T8-T37,T49 and Grp1) 15 September 2014	**Consultant:**	Stefan Rose BSc(Hons), TechCert (Arbor A)
Tagged:	No	**Weather:**	Sunny, light winds

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.

Selected trees re-surveyed on 15 September 2014 shown in red.

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
1	Field Maple *Acer campestre*	7	S	120	1.5	1.5	2.0	2.0	2.0	1.5	1.5	2.0	Y	Good	Good Developing tree Mechanical damage at base on West side	None required at time of survey	40+	C1
2	Field Maple *Acer campestre*	8	S	120	2.0	1.5	1.5	2.5	1.5	1.5	1.5	1.5	Y	Good	Fair Developing tree Constriction to trunk at 0.3m and 1.5m 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)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
3	Field Maple *Acer campestre*	6	S	80	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0	Y	Good	Poor Developing tree Trunk leans to South-east Stake present Mechanical damage at base on South side Constriction around trunk from stake and tie at 0.3m and 1.2m above ground level	Remove and replace stake and tie in appropriate position	10+	C1
4	Gleditsia *Gleditsia spp*	6	S	160	2.5	3.0	2.5	3.0	2.0	2.0	2.0	2.0	Y	Good	Fair Developing tree Large bark wound on trunk on West side of trunk occluding Multi-stemmed at 2m above ground level with included bark Minor deadwood in lower crown Previously pollarded at 2m above ground level	None required at time of survey	10+	C1
5	Gleditsia *Gleditsia spp*	7	S	160	3.5	3.0	3.0	3.5	1.8	2.0	2.0	2.0	Y	Good	Fair Developing tree Previously pollarded at 2m above ground level Multi-stemmed at 2m above ground level with included bark Minor deadwood in lower crown	Crown lift ovver public path for statutory height clearance	10+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
6	Gleditsia *Gleditsia spp*	4	S	130	2.0	1.0	2.0	1.5	2.0	2.0	2.0	2.0	Y	Fair	Fair Developing tree Poor shape and form Multi-stemmed at 2m above ground level with included bark Trunk distorted Previously pollarded at 2m above ground level Bark wound at base on trunk on East side	Advise removal	<10	U
7	Gleditsia *Gleditsia spp*	7	S	170	3.5	2.0	3.0	3.0	2.5	2.0	3.0	2.0	Y	Good	Fair Developing tree Trunk leans to South-west Bark wound on trunkat 1.2m above ground level on South-east side occluding Minor deadwood in lower crown Mechanical damage at base	None required at time of survey	10+	C1
8	Wild Cherry *Prunus avium*	12	S	540	3.0	5.0	7.0	5.0	2.0	2.0	2.0	2.0	EM	Fair	Fair Growing on bank Part of linear group Trunk leans to South-east Crown shape distorted due to group pressure Multi-stemmed at 2m above ground level Previously crown reduced Old pruning wounds on trunk and in crown Mechanical damage to surface roots Retaining wall to West	None required at time of survey	20+	B1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
9	London Plane *Platanus x hispanica*	14	S	510	6.0	5.0	5.0	6.0	3.0	4.0	3.0	5.0	EM	Good	Fair Growing on bank Part of linear group Crown shape distorted due to group pressure Trunk leans to North Girdling roots at base on West side Old pruning wound on trunk occluding Retaining wall 2m to South Previously crown reduced Epicormics form crown Mechanical damage to surface roots Old pruning wounds in crown	None required at time of survey	40+	B1
10	Field Maple *Acer campestre*	7	S	180	3.0	3.0	3.0	2.0	2.5	2.5	2.5	2.5	Y	Fair	Fair Compact crown Rope constricting first limb on West side Horse Chestnut Scale Surrounded by hard surface Previously crown reduced Minor deadwood in crown Bark wound on North side of trunk	None required at time of survey	10+	C1
11	Field Maple *Acer campestre*	4	S	100	2.0	2.0	1.0	1.0	2.0	2.0	2.0	2.0	Y	Poor	Poor Developing tree Poor shape and form Trunk leans to North-east Large bark wound on trunk Epicormics on trunk Hard surface all round	Advise removal	<10	U

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
12	False Acacia *Robinia pseudoacacia*	13	S	360	4.0	5.0	3.0	2.0	5.0	5.0	5.0	5.0	EM	Fair	Fair Street tree Part of linear group Basal suckers Old pruning wound on lower trunk occluding Epicormics on trunk Crown weighted to North Crown shape distorted due to group pressure	Remove basal suckers and crown raise to 5m	20+	C1
13	London Plane *Platanus x hispanica*	13	S	520	5.0	5.5	5.0	6.0	5.0	5.0	4.0	6.0	EM	Good	Fair Part of linear group Growing on bank Retaining wall 2m to South side Previously crown reduced Old pruning wound on trunk and in crown occluding Epicormics form crown	None required at time of survey	40+	B1
14	Purple Leaved Plum *Prunus cerasifera 'Atropurpurea'*	8	S	170	4.0	4.0	2.0	2.0	4.0	4.0	4.0	4.0	SM	Good	Fair Part of linear group Growing on bank Crown shape distorted due to group pressure Old pruning wound on trunk occluded Bark wound on lower trunk Epicormics on trunk Trunks intertwine in crown	None required at time of survey	20+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
15	Field Maple *Acer campestre*	11	S	320	5.0	4.5	4.0	5.5	3.0	3.0	3.5	5.0	EM	Good	Good Part of linear group Growing on bank Bark wound on lower trunk occluding Mesh fixed to base Old pruning wounds on main limbs in lower crown occluding Epicormics on trunk and in crown Basal suckers	Remove wire from around base within 6 months	20+	B1
16	Field Maple *Acer campestre*	11	S	270	7.0	6.0	5.0	6.0	2.0	2.0	3.0	3.5	EM	Good	Good Part of linear group Growing on bank Squat spreading form Old pruning wound in lower crown occluding Bifurcated at 2m above ground level Mechanical damage to surface roots Minor deadwood in crown	None required at time of survey	20+	B1
17	Field Maple *Acer campestre*	14	S	410	6.0	7.0	5.0	6.0	4.0	4.0	5.0	4.0	EM	Good	Good Part of linear group Growing on bank Trunk leans to North Girdling roots at base on West side Epicormics in crown Old pruning wound on trunk occluding Minor deadwood in crown Mechanical damage to surface roots	None required at time of survey	20+	B1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
18	Field Maple *Acer campestre*	9	S	200	4.0	3.0	3.0	4.0	3.0	3.0	3.0	3.0	SM	Fair	Fair Growing on bank Exposed surface roots Reduced on East side to clear bridge Old pruning wounds occluding Crown weighted to West Basal suckers Epicormics on trunk Crown shape distorted due to group pressure	None required at time of survey	20+	B1
19	Field Maple *Acer campestre*	11	S	260	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	SM	Good	Good Growing on bank Exposed surface roots Old pruning wounds on trunk occluding Reduced on East side to clear bridge Crown weighted to West Crown shape distorted due to group pressure	None required at time of survey	20+	B1
19A	Swedish Whitebeam *Sorbus intermedia*	12	S	350	6.0	4.0	4.0	6.0	2.0	2.0	2.0	2.0	EM	Good	Fair Existing hard surface all round Multi-stemmed at 2m above ground level with included bark Trunk leans to South-west Low hanging branches Minor deadwood in crown Roots lifting hard surface on East side	Crown lift over public path for statutory height clearance	20+	B1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
20	Field Maple *Acer campestre*	11	S	230	4.0	4.0	2.0	3.0	2.5	2.0	2.0	2.0	SM	Good	Fair Crown shape distorted due to group pressure Existing hard surface all round Bark wounds on trunk occluding on East side Epicormics on trunk and in crown	None required at time of survey	20+	C1
21	Field Maple *Acer campestre*	12	S	190	2.0	2.0	2.0	1.0	3.0	2.0	3.0	3.0	SM	Fair	Fair Part of linear group Crown shape distorted due to group pressure Tall and etiolated due to group pressure Epicormics on trunk Stubs on lower trunk Old pruning wound on trunk occluding Existing hard surface all round	None required at time of survey	10+	C1
22	Swedish Whitebeam *Sorbus intermedia*	13	S	400	5.0	4.0	4.0	5.0	3.0	2.5	2.5	3.0	EM	Good	Fair Trifurcated at 2m above ground level with included bark Crown weighted to West Stubs in lower crown Minor deadwood in crown Roots lifting hard surface on West side	None required at time of survey	20+	B1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
23	Common Lime *Tilia x europaea*	15	S	630	6.0	6.5	6.5	7.0	2.0	2.0	2.0	2.0	EM	Good	Fair Street tree Suckers at base Large buttress roots Multi-stemmed at 3m above ground level Epicormics on branchwork Cavity from lost limb on North-east side at 2m above ground level Previously reduced crown reformed Epicormics throughout crown Pavement displaced on South side	Crown lift to provide statutory path height clearance	20+	B1
24	Common Lime *Tilia x europaea*	15	S	550	7.0	7.0	5.5	6.0	2.0	2.0	2.0	2.0	EM	Good	Fair Street tree Large buttress roots Suckers at base Epicormics on trunk and in crown Previously pollarded at 5m crown reformed Horse Chestnut Scale on trunk and branches Pavement displaced on South side Major deadwood in crown	Remove major deadwood	20+	B1
25	Swedish Whitebeam *Sorbus intermedia*	8	S	340	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0	EM	Good	Good Exposed surface roots with mechanical damage Girdling root at base on West side Good shape and form	None required at time of survey	20+	B1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
26	Swedish Whitebeam *Sorbus intermedia*	9	S	380	4.0	4.0	5.0	4.0	3.0	2.0	2.5	2.5	EM	Good	Fair Exposed surface roots all round Stubs in lower crown Tear out wound on East side Minor deadwood in crown	None required at time of survey	20+	B1
27	Common Lime *Tilia x europaea*	15	S	620	6.0	5.0	4.0	5.0	2.0	1.5	1.5	1.5	M	Good	Fair Growing in raised bed Suckers at base Trunk leans to North-east Bifurcated at 2m above ground level Previously crown reduced Girdling root at base on South side Horse Chestnut Scale on trunk and branches Old pruning wounds on trunk and in crown Epicormics on trunk and in crown Minor deadwood in crown Drain covers to East side of trunk	None required at time of survey	20+	B1
28	Common Lime *Tilia x europaea*	12	S	430	5.0	5.0	4.0	3.5	4.0	2.0	2.0	2.0	EM	Good	Fair Displacing retaining wall on South side Horse Chestnut Scale on trunk and branches Previously crown reduced Epicormics on trunk and in crown Old pruning wounds in crown Minor deadwood in crown	None required at time of survey	20+	B1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
29	Silver Birch *Betula pendula*	6	S	100	1.5	2.5	2.0	2.0	2.0	2.0	2.0	2.0	SM	Fair	Fair Developing tree Located in large shrub border Bifurcated at 2.5m above ground level	None required at time of survey	20+	C1
30	Common Lime *Tilia x europaea*	17	S	Est 710	7.0	8.0	7.0	7.0	4.0	4.0	5.0	4.0	M	Good	Fair Growing in raised bed adjacent to retaining wall Multi-stemmed at 3m above ground level with included bark Survey of basal area limited due to railings and shrubs Tight forks with included bark Epicormics on trunk and in crown Old pruning wounds in crown Major dwc Drains to North-west	Remove major deadwood	20+	B1
31	Common Lime *Tilia x europaea*	8	S	240	4.0	5.0	4.0	3.0	2.0	2.0	2.0	2.0	SM	Fair	Poor Large bark wound at base on South and East sides approximately 50% of bark lost Crown shape distorted due to group pressure Trunk and crown weighted to East Growing in raised bed	Advise removal	<10	U

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
32	Common Lime *Tilia x europaea*	18	S	590	5.0	3.0	7.0	6.0	2.0	2.0	5.0	3.0	M	Good	Fair Suckers at base Growing in raised bed Displacing retaining wall on South side Trifurcated at 3m above ground level Bark wound on lower trunk on North side occluding Cavity at 2m above ground level on North side from lost limb Crown shape distorted due to group pressure Growing with T33 Major deadwood in crown	Remove major deadwood within 3 months	20+	B1
33	Common Lime *Tilia x europaea*	16	S	510	5.0	5.0	5.0	3.0	3.0	4.0	4.0	3.0	M	Good	Fair Suckers at base Displacing retaining wall on South side Trifurcated at 3m above ground level Epicormics on trunk and in crown Major deadwood in crown Crown shape distorted due to group pressure Growing with T32	Remove major deadwood within 3 months	20+	B1
34	Common Lime *Tilia x europaea*	12	S	590	6.0	5.0	5.0	6.5	2.0	2.0	2.0	2.0	M	Good	Fair Growing in small raised bed Suckers at base Epicormics on trunk and in crown Displacing retaining wall Cavity in main limb 4m on South side Major deadwood and stubs throughout crown Trunk leans to North-east	Crown lift to statutory height over footpath	10+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
35	Beech *Fagus sylvatica*	14	S	530	6.0	6.0	6.0	6.0	2.0	2.5	3.0	2.0	EM	Good	Good Growing in raised bed Displacing wall all round Trunk leans to North Old pruning wound on trunk occluding Appears to have lower trunk buried Bifurcated at 5.5m above ground level Minor deadwood in crown Low hanging branches	Crown lift to 4m all round	20+	B1
36	Silver Birch *Betula pendula*	10	S	250	4.0	4.0	4.0	3.0	2.5	5.0	4.0	4.0	EM	Good	Good Street tree Existing hard surface all round Trunk leans to South-west Compaction at base Storm damage in crown Minor deadwood in crown Bark wounds on trunk	None required at time of survey	20+	B1
37	Common Lime *Tilia x europaea*	10	S	300	4.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	SM	Good	Fair Growing in raised bed Ivy on trunk Trunk leans to South Previously crown reduced Old pruning wound on trunk occluding Crown shape distorted due to group pressure Bifurcated at 4m above ground level	None required at time of survey	10+	C1
38	Common Lime *Tilia x europaea*	14	S	410	3.0	4.0	4.5	4.0	3.0	3.0	3.0	3.0	EM	Good	Good Suckers at base Epicormics on trunk and in crown Trunk leans to South-west Previously crown reduced Minor deadwood in crown	None required at time of survey	20+	B1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
39	Common Lime *Tilia x europaea*	14	S	450	4.0	4.0	3.0	4.0	2.0	2.0	2.0	2.0	EM	Good	Fair Suckers at base Epicormics on trunk and in crown Previously crown reduced Sliding gate installed 1.5m to North Old pruning wounds on trunk and in crown Minor deadwood in crown	None required at time of survey	20+	B1
40	Common Lime *Tilia x europaea*	14	S	440	5.0	5.0	4.0	5.0	2.0	2.0	2.0	2.0	EM	Good	Fair Suckers at base Epicormics on trunk and in crown Previously pollarded at 4m crown reformed Previously crown reduced Minor cavities at 4m above ground level Old pruning wounds on trunk and in crown Minor deadwood in crown	None required at time of survey	20+	B1
41	Common Lime *Tilia x europaea*	15	S	440	4.0	5.0	5.0	4.5	3.0	3.0	3.0	3.0	EM	Good	Fair Suckers at base Epicormics on trunk and in crown Previously pollarded at 5m crown reformed Multi-stemmed at 5m above ground level Previously crown reduced Minor deadwood in crown Old pruning wounds on trunk and in crown	None required at time of survey	20+	B1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
42	Common Lime *Tilia x europaea*	15	S	530	4.0	3.0	4.0	6.0	3.0	3.0	3.0	3.0	EM	Good	Fair Suckers at base Previously pollarded at 5m crown reformed Previously crown reduced Epicormics on trunk and in crown Minor deadwood in crown Old pruning wounds on trunk and in crown	None required at time of survey	20+	B1
43	Common Sycamore *Acer pseudoplatanus*	13	S	330	5.5	4.0	4.0	6.0	3.0	4.0	3.0	3.0	SM	Good	Good Good shape and form Old pruning wound on trunk occluded Minor deadwood in crown	None required at time of survey	40+	A1
44	Common Ash *Fraxinus excelsior*	8	MS <6	280	3.0	3.0	4.0	3.0	2.5	3.0	2.5	2.0	Y	Fair	Fair Bifurcated at ground level Ivy on trunk and in crown Elder at base Unable to verify health and safety due to ivy	Sever and remove ivy Fell Elder Re-survey	10+	C1 Interim
45	Common Sycamore *Acer pseudoplatanus*	14	S	360	6.0	5.0	5.0	5.0	2.0	3.0	2.0	2.0	SM	Good	Good Bark wound on surface root on East side occluding Bifurcated at 3m above ground level Mechanical damage to surface roots Minor deadwood in crown	None required at time of survey	40+	B1
46	Common Sycamore *Acer pseudoplatanus*	14	S	410	6.5	5.0	5.0	5.5	2.5	2.0	2.0	2.0	SM	Good	Good Bifurcated at 1.8m above ground level Large buttress roots Mechanical damage to exposed surface roots Minor deadwood in crown	None required at time of survey	40+	B1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
47	Common Sycamore *Acer pseudoplatanus*	15	S	480	7.0	5.0	7.0	6.0	3.0	2.0	2.0	2.5	EM	Good	Good Old pruning wound on trunk occluding Minor deadwood and stubs throughout crown Bulge on trunk possibly indicating internal decay Bark wounds on trunk	Full ground level inspection with decay detection equipmnent	40+	B1 Interim
48	Pear *Pyrus spp*	13	S	730	5.0	3.0	3.0	4.0	4.0	0.0	0.0	5.0	OM	Fair	Fair Extensive decay in old pruning wounds on trunk Old pruning wound on trunk occluding Decay in old stubs Bifurcated at 4m above ground level	Carry out climbing inspection of cavities and Picus survey of trunk up to 3m above ground level	10+	C1 Interim
49	Purple Norway Maple *Acer platanoides 'Crimson King'*	10	S	330	4.0	5.0	4.0	4.0	2.0	3.0	4.0	3.0	SM	Fair	Poor Large bark wound on North side of trunk from ground level to 2m above ground level occluded but with surface decay Old pruning wounds on trunk and branchwork occluding Exposed surface roots on North and East sides Poor quality tree Bifurcated at 2m above ground level	Advise removal	<10	U
50	Crack Willow *Salix fragilis*	24	S	920	9.0	9.5	9.5	7.0	2.0	2.0	2.0	2.0	M	Good	Fair Multi-stemmed at 3m above ground level Limbs starting to become end loaded increasing propensity for failure Storm damage in crown Mechanical damage to surface roots Minor deadwood in crown	None required at time of survey	20+	B1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
51	Norway Maple *Acer platanoides*	9	S	170	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	SM	Good	Fair Bark wounds on trunk Developing tree	None required at time of survey	20+	B1
52	Stump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
53	Common Lime *Tilia x europaea*	14	S	540	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0	EM	Good	Good Ground levels altered around base in past Suckers at base Epicormics on trunk and in crown Major deadwood throughout crown	Remove major deadwood	20+	B1
54	Common Lime *Tilia x europaea*	15	S	580	5.0	4.0	4.5	7.0	2.0	2.0	2.0	3.0	M	Good	Fair Trunk leans to East Epicormics on trunk and in crown Stubs on lower trunk Growing on slope Bark wound on lower trunk occluding with decay present Ground levels increased on North and West sides Old pruning wounds on trunk Minor deadwood in crown	None required at time of survey	10+	C1
55	Pear *Pyrus spp*	11	S	420	5.0	1.5	1.0	4.0	3.0	3.0	3.0	3.0	M	Fair	Fair Trunk leans to North Crown weighted to North and West Bark wounds on lower trunk occluding Cavity at 3m on South side from lost limb	Investigate extent of cavity at 3m within 3 months	10+	C1 Interim

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
56	Flowering Cherry *Prunus spp*	12	S	Est 360	4.0	4.0	5.0	3.0	6.0	6.0	6.0	6.0	EM	Fair	Fair Offsite tree growing at base of boundary wall Bark wounds and cavities on trunk Unable to verify health and safety of trunk due to no access Minor deadwood in crown	Gain access and re-survey within 1 month	10+	C1 Interim
57	Common Sycamore *Acer pseudoplatanus*	16	S	Est 380	6.0	3.0	3.0	4.0	6.0	5.0	7.0	7.0	SM	Good	Good Off-site tree Unable to verify health and safety due to limited access Bifurcated at approximately 2m above ground level Crown shape distorted due to group pressure	Gain access and re-survey within 1 month	20+	B1+2 Interim
58	Common Sycamore *Acer pseudoplatanus*	15	S	Est 360	3.0	4.0	5.0	5.0	8.0	8.0	8.0	8.0	SM	Good	Good Off-site tree Unable to verify health and safety due to limited access Minor deadwood in crown	Gain access and re-survey within 1 month	40+	B1+2 Interim
59	Common Ash *Fraxinus excelsior*	18	S	Est 700	5.0	6.0	5.0	6.0	7.0	6.0	7.0	7.0	M	Fair	Fair Off-site tree Unable to verify health and safety due to limited access and ivy on trunk Multi-stemmed at 6m above ground level Previously crown reduced Minor deadwood in crown Wall to East Epicormics in crown	Gain access, sever and remove ivy and re-survey within 1 month	20+	B1+2 Interim

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
60	Common Ash *Fraxinus excelsior*	14	S	Est 660	4.0	2.5	3.0	5.0	7.0	7.0	7.0	7.0	M	Fair	Fair Off-site tree Unable to verify health and safety due to ivy on trunk and limited access Previously crown reduced Minor deadwood in crown Wall to East	Gain access and re-survey within 1 month	20+	C1+2 Interim
61	Common Sycamore *Acer pseudoplatanus*	16	S	Est 440	5.0	6.0	3.0	5.0	8.0	8.0	8.0	8.0	EM	Good	Good Off-site tree Unable to verify health and safety due to limited access Previously crown reduced Old pruning wounds on trunk occluding Minor deadwood in crown Wall and raised walkway to East	Gain access and re-survey within 1 month	40+	B1+2 Interim
62	Common Sycamore *Acer pseudoplatanus*	15	S	Est 380	2.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	EM	Fair	Fair Off-site tree Unable to verify health and safety due to limited access Previously crown reduced Old pruning wounds on trunk occluding Minor deadwood in crown Wall and raised walkway to East	Gain access and re-survey within 1 month	20+	C1+2 Interim
63	Common Sycamore *Acer pseudoplatanus*	15	S	Est 260	2.0	2.0	3.0	2.0	8.0	8.0	8.0	8.0	SM	Fair	Fair Off-site tree Unable to verify health and safety due to limited access Previously crown reduced Old pruning wounds on trunk occluding Minor deadwood in crown Wall and raised walkway to East	Gain access and re-survey within 1 month	10+	C1+2 Interim

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
64	Common Lime *Tilia x europaea*	15	S	Est 320	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	SM	Fair	Fair Off-site tree Unable to verify health and safety due to limited access Previously pollarded at 4m above ground level Epicormics on trunk and in crown Wall to East	Gain access and re-survey within 1 month	20+	C1+2 Interim
65	Goat Willow *Salix caprea*	14	S	Est 300	3.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	EM	Fair	Fair Off-site tree Unable to verify health and safety due to limited access Bifurcated at 2m above ground level Minor deadwood in crown Wall to East	Gain access and re-survey within 1 month	20+	C1+2 Interim
66	Common Lime *Tilia x europaea*	16	S	Est 490	4.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	EM	Fair	Fair Off-site tree Unable to verify health and safety due to limited access Previously crown reduced Epicormics in crown Multi-stemmed at 3m above ground level Wall to East	Gain access and re-survey within 1 month	20+	B1+2 Interim
67	Norway Maple *Acer platanoides*	15	S	Est 300	3.0	4.0	3.0	4.0	6.0	6.0	6.0	6.0	SM	Good	Fair Off-site tree Unable to verify health and safety due to limited access Old pruning wounds on trunk occluding Previously crown reduced	Gain access and re-survey within 1 month	40+	B1+2 Interim
68	Common Ash *Fraxinus excelsior*	14	S	Est 300	3.0	5.0	5.0	4.0	4.0	5.0	4.0	4.0	Y	Good	Good Off-site tree Unable to verify health and safety due to limited access Old pruning wounds on trunk occluding Minor deadwood in crown	Gain access and re-survey within 1 month	40+	B1+2 Interim

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
69	Tree of Heaven *Ailanthus altissima*	13	S	Est 360	2.0	4.0	4.5	3.0	3.0	3.0	1.0	4.0	EM	Good	Good Limited access Growing between fence and car park Bifurcated at approximately 3.5m above ground level Basal suckers Ground level drops to South for rallway Minor deadwood in crown Storm damage in crown	Gain access and re-survey within 1 month	10+	C1 Interim
70	Common Elder x2 *Sambucus nigra*	5.5	MS <6	280	4.0	3.0	3.0	3.0	1.0	1.0	1.0	1.0	M	Good	Fair Appears to grow offsite Growing on bank Two trees growing as one Low hanging branches Minor deadwood in crown	None required at time of survey	10+	C1
71	Common Ash *Fraxinus excelsior*	8	S	120	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	SM	Good	Good Boundary well to North Natural regeneration Developing tree	None required at time of survey	20+	C1
72	Common Sycamore *Acer pseudoplatanus*	8	S	120	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	SM	Good	Good Boundary well to North Natural regeneration Developing tree	None required at time of survey	20+	C1
73	Lawson Cypress *Chamaecyparis lawsoniana*	7	S	100	0.5	0.5	1.0	0.5	2.0	2.0	2.0	2.0	Y	Good	Good Offsite tree Growing behind brick wall Leans West	None required at time of survey	10+	C1
74	Silver Birch *Betula pendula*	7	S	Est 140	2.0	2.5	2.5	3.0	2.0	2.0	2.0	2.0	Y	Good	Good Offsite tree Growing behind brick wall Bifurcated at 2m above ground level Old pruning wounds on trunk	None required at time of survey	10+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
75	Gum *Eucalyptus spp*	17	S	320	4.0	5.0	5.0	4.0	4.0	3.0	3.0	3.0	SM	Good	Good Offsite tree Unable to verify health and safety due to limited access Minor deadwood in crown	Gain access and re-survey within 1 month	20+	B1 Interim
Grp 1	Goat Willow	5	MS <6	370	-	-	-	-	-	-	-	-	SM	Good	Fair/Poor Two multi-stemmed at ground level with included bark Exposed surface roots Minor cavity at base Decay in trunks	None required at time of survey	10+	C1
Grp 2	Common Sycamore x2 Common Beech x1	16	S	420	-	-	-	-	-	-	-	-	EM	Good	Fair Rope constricting limb on Sycamore Sycamore and Beech close to boundary wall Minor deadwood throughout lower crowns Beech with included fork	Remove deadwood and stubs within 12 months	20+	C1+2
Grp 3	Common Sycamore Elder Poplar Common Ash	8	MS <6	440	-	-	-	-	-	-	-	-	SM	Fair	Fair Mainly self-sown group at base of boundary wall Several established trees growing on North side of wall Large dominant stump within group	None required at time of survey	10+	C1
Grp 4	Field Maple x2	8	S	200	-	-	-	-	-	-	-	-	SM	Poor	Fair Extensive bark damage to lower trunks One tree ring barked Second tree partially ring barked	Advise removal	<10	U
Grp 5	Lime x4	12	S	Est 380	-	-	-	-	-	-	-	-	EM	Good	Good Offsite group Growing beyond boundary wall Ivy on trunks Minor deadwood in crowns	None required at time of survey	20+	B2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N	E	S	W	H't of Crown AGL (m) N	E	S	W	Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
Grp 6	Common Sycamore	11	S	320	-	-	-	-	-	-	-	-	EM	Good	Good Offsite group Growing beyond boundary wall Ivy on trunks Minor deadwood in crowns	None required at time of survey	20+	B2
Grp 7	Elder Common Sycamore Lime	10	S	Est 300	-	-	-	-	-	-	-	-	SM	Good	Good Offsite group Canopy overhangs site Minor deadwood in crowns Growing beyond boundary wall Some shrubs growing on site	None required at time of survey	20+	B2
Grp 8	Lawson Cypress	9	S	Est 320	-	-	-	-	-	-	-	-	SM	Good	Good Offsite group Canopy overhangs site Minor deadwood in crowns Growing beyond boundary wall	None required at time of survey	20+	C2
H1	Hawthorn	3	S	100	-	-	-	-	-	-	-	-	SM	Good	Fair Well maintained formal hedge along site boundary	None required at time of survey	20+	B2

NOTE: trees marked with a * were re-surveyed in September 2014 (Trees 8-37, 49 and Grp 1)

KEY

	ROOT PROTECTION AREA (RPA)
	CROWN SPREAD
	CATEGORY
13	TREE NUMBER
Birch	SPECIES
B2	CATEGORY
▨	TREE POSITION APPROXIMATE (NOT SHOWN ON ORIGINAL SURVEY)
●	CATEGORY A TREES
●	CATEGORY B TREES
●	CATEGORY C TREES
●	CATEGORY U TREES

CLIENT
London Borough of Camden

JOB TITLE
Abbey Road,
Camden, London

DRAWING TITLE
Tree Survey Plan

CBA DRAWING No.
CBA7595.01C TSP
(selected trees only)

BASE PLAN DRAWING No.
7595-01A-updated ts
march2012

SCALE 1:250 @ A0

DRAWN LI & AM

DATE Sept 2014

CBA Trees.
14 Damson Crescent, Fair Oak, Eastleigh,
Hampshire, SO50 8RETel: 01962 715407
Fax 01962 711419


CB2

CBA Trees	**BS5837:2012 TREE ROOT PROTECTION AREA SCHEDULE**			
	Client:	London Borough of Camden	**Site:**	Abbey Road, Camden, London
	Date:	Original survey: 1 May 2013 Re-survey of selected trees: (T8-T37,T49 and Grp1) 15 September 2014	**Consultant:**	Stefan Rose BSc(Hons), TechCert (Arbor A)

Notes:
1. This is an assessment of the Root Protection Area (RPA) required, based on the individual tree data collected and Section 4.6.1 of BS5837:2012.
2. At this juncture this document is for your sole guidance and ongoing discussions purposes only and is not intended for general circulation, as it assumes that all but the 'U' trees will be retained, which clearly may not be the case.
3. 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.

Selected trees re-surveyed on 15 September 2014 shown in red.

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
1	Field Maple	C1	S	120	1.44	6.52
2	Field Maple	C1	S	120	1.44	6.52
3	Field Maple	C1	S	80	0.96	2.90
4	Gleditsia	C1	S	160	1.92	11.58
5	Gleditsia	C1	S	160	1.92	11.58
6	Gleditsia	U	S	130	-	-
7	Gleditsia	C1	S	170	2.04	13.08
8	Wild Cherry	B1	S	540	6.48	131.93
9	London Plane	B1	S	510	6.12	117.68
10	Field Maple	C1	S	180	2.16	14.66
11	Field Maple	U	S	100	-	-
12	False Acacia	C1	S	360	4.32	58.64
13	London Plane	B1	S	520	6.24	122.34
14	Purple Leaved Plum	C1	S	170	2.04	13.08
15	Field Maple	B1	S	320	3.84	46.33
16	Field Maple	B1	S	270	3.24	32.98
17	Field Maple	B1	S	410	4.92	76.06
18	Field Maple	B1	S	200	2.40	18.10

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
19	Field Maple	B1	S	260	3.12	30.59
19A	Swedish Whitebeam	B1	S	350	4.20	55.42
20	Field Maple	C1	S	230	2.76	23.93
21	Field Maple	C1	S	190	2.28	16.33
22	Swedish Whitebeam	B1	S	400	4.80	72.39
23	Common Lime	B1	S	630	7.56	179.58
24	Common Lime	B1	S	550	6.60	136.87
25	Swedish Whitebeam	B1	S	340	4.08	52.30
26	Swedish Whitebeam	B1	S	380	4.56	65.33
27	Common Lime	B1	S	620	7.44	173.92
28	Common Lime	B1	S	430	5.16	83.66
29	Silver Birch	C1	S	100	1.20	4.52
30	Common Lime	B1	S	710	8.52	228.08
31	Common Lime	U	S	240	-	-
32	Common Lime	B1	S	590	7.08	157.50
33	Common Lime	B1	S	510	6.12	117.68
34	Common Lime	C1	S	590	7.08	157.50
35	Beech	B1	S	530	6.36	127.09
36	Silver Birch	B1	S	250	3.00	28.28
37	Common Lime	C1	S	300	3.60	40.72
38	Common Lime	B1	S	410	4.92	76.06
39	Common Lime	B1	S	450	5.40	91.62
40	Common Lime	B1	S	440	5.28	87.59
41	Common Lime	B1	S	440	5.28	87.59
42	Common Lime	B1	S	530	6.36	127.09
43	Common Sycamore	A1	S	330	3.96	49.27
44	Common Ash	C1 Interim	MS <6	280	3.36	35.47
45	Common Sycamore	B1	S	360	4.32	58.64
46	Common Sycamore	B1	S	410	4.92	76.06
47	Common Sycamore	B1 Interim	S	480	5.76	104.24
48	Pear	C1 Interim	S	730	8.76	241.11
49	Purple Norway Maple	U	S	330	-	-
50	Crack Willow	B1	S	920	11.04	382.95
51	Norway Maple	B1	S	170	2.04	13.08
52	Stump	-	-	-	-	-

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
53	Common Lime	B1	S	540	6.48	131.93
54	Common Lime	C1	S	580	6.96	152.20
55	Pear	C1 Interim	S	420	5.04	79.81
56	Flowering Cherry	C1 Interim	S	360	4.32	58.64
57	Common Sycamore	B1+2 Interim	S	380	4.56	65.33
58	Common Sycamore	B1+2 Interim	S	360	4.32	58.64
59	Common Ash	B1+2 Interim	S	700	8.40	221.70
60	Common Ash	C1+2 Interim	S	660	7.92	197.09
61	Common Sycamore	B1+2 Interim	S	440	5.28	87.59
62	Common Sycamore	C1+2 Interim	S	380	4.56	65.33
63	Common Sycamore	C1+2 Interim	S	260	3.12	30.59
64	Common Lime	C1+2 Interim	S	320	3.84	46.33
65	Goat Willow	C1+2 Interim	S	300	3.60	40.72
66	Common Lime	B1+2 Interim	S	490	5.88	108.63
67	Norway Maple	B1+2 Interim	S	300	3.60	40.72
68	Common Ash	B1+2 Interim	S	300	3.60	40.72
69	Tree of Heaven	C1 Interim	S	360	4.32	58.64
70	Common Elder x2	C1	MS <6	280	3.36	35.47
71	Common Ash	C1	S	120	1.44	6.52
72	Common Sycamore	C1	S	120	1.44	6.52
73	Lawson Cypress	C1	S	100	1.20	4.52
74	Silver Birch	C1	S	140	1.68	8.87
75	Gum	B1 Interim	S	320	3.84	46.33
Grp 1	Goat Willow	C1	MS <6	370	4.44	61.94
Grp 2	Common Sycamore x2 Common Beech x1	C1+2	S	420	-	-
Grp 3	Common Sycamore Elder Poplar Common Ash	C1	MS <6	440	-	-
Grp 4	Field Maple x2	U	S	200	-	-
Grp 5	Lime x4	B2	S	Est 380	-	-
Grp 6	Common Sycamore	B2	S	320	-	-
Grp 7	Elder Common Sycamore Lime	B2	S	Est 300	-	-

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
Grp 8	Lawson Cypress	C2	S	Est 320	-	-
H1	Hawthorn	B2	S	100	-	-


CB3

KEY

- TREES TO BE RETAINED AND PROTECTED
- TREES TO BE REMOVED
- TREE ADVISED TO BE REMOVED FOR REASONS OF SOUND ARBORICULTURAL MANAGEMENT
- LOCATION OF TREE PROTECTION BARRIERS
- FIT FOR PURPOSE GROUND PROTECTION
- PRECAUTIONARY AREA REQUIRING ARBORICULTURAL SITE SUPERVISION DURING WORKS AND/OR ARBORICULTURAL METHOD STATEMENT

NOTE: trees marked with a * were re-surveyed in September 2014 (Trees 8-37, 49 and Grp 1)

5m 10m 20m

KEY

- ROOT PROTECTION AREA (RPA)
- CROWN SPREAD
- CATEGORY
- TREE NUMBER
- SPECIES
- CATEGORY
- TREE POSITION APPROXIMATE (NOT SHOWN ON ORIGINAL SURVEY)
- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

CLIENT	London Borough of Camden
JOB TITLE	Abbey Road, Camden, London
DRAWING TITLE	Tree Protection Plan
CBA DRAWING No.	CBA7595.03
BASE PLAN DRAWING No.	151017_fha586xr06-GA
SCALE	1:250 @ A0
DRAWN	LI & AM
DATE	Sept 2015

CBA Trees.
14 Damson Crescent, Fair Oak, Eastleigh, Hampshire, SO50 8RETel: 01962 715407
Fax 01962 711419


CB4

	TREE WORKS SCHEDULE			
	Client:	London Borough of Camden	**Site:**	Abbey Road Regeneration Project Phases 2 and 3
	Date:	September 2015	**Consultant:**	Stefan Rose *BSc (Hons), Tech Cert ArborA, TechArborA*

Tree No.	Species	Recommended Works
8	Wild Cherry	• Retained
9	London Plane	• Retained
10	Field Maple	• Fell to ground level and remove stump
11	Field Maple	• Fell to ground level and remove stump
12	False Acacia	• Fell to ground level and remove stump
13	London Plane	• Fell to ground level and remove stump
14	Purple Leaved Plum	• Fell to ground level and remove stump
15	Field Maple	• Fell to ground level and remove stump
16	Field Maple	• Fell to ground level and remove stump
17	Field Maple	• Fell to ground level and remove stump
18	Field Maple	• Fell to ground level and remove stump
19	Field Maple	• Fell to ground level and remove stump
19A	Swedish Whitebeam	• Fell to ground level and remove stump
20	Field Maple	• Fell to ground level and remove stump
21	Field Maple	• Fell to ground level and remove stump
22	Swedish Whitebeam	• Fell to ground level and remove stump
23	Common Lime	• Prune canopy on north side by no more than 2.0m
24	Common Lime	• Prune canopy on north side by no more than 2.0m
25	Swedish Whitebeam	• Retained
26	Swedish Whitebeam	• Retained
27	Common Lime	• Retained
28	Common Lime	• Retained
29	Silver Birch	• Fell to ground level and remove stump
30	Common Lime	• Retained
31	Common Lime	• Fell to ground level and remove stump
32	Common Lime	• Retained
33	Common Lime	• Retained
34	Common Lime	• Prune canopy on north side by no more than 3.0m
35	Beech	• Prune canopy on north side by no more than 3.0m
36	Silver Birch	• Fell to ground level and remove stump
37	Common Lime	• Fell to ground level and remove stump
38	Common Lime	• Retained
39	Common Lime	• Prune canopy on west side by no more than 2.0m
40	Common Lime	• Retained
41	Common Lime	• Retained
42	Common Lime	• Retained
43	Common Sycamore	• Prune canopy on west side by no more than 3.0m
44	Common Ash	• Retained
45	Common Sycamore	• Fell to ground level and remove stump
46	Common Sycamore	• Retained
47	Common Sycamore	• Retained
48	Pear	• Retained
49	Purple Norway Maple	• Fell to ground level and remove stump
50	Crack Willow	• Retained
51	Norway Maple	• Fell to ground level and remove stump
52	Stump	• Remove stump
53	Common Lime	• Retained
54	Common Lime	• Retained
55	Pear	• Retained

Tree No.	Species	Recommended Works
56	Flowering Cherry	• Prune canopy to allow for construction of, and working space for, community centre
57	Common Sycamore	• Retained
58	Common Sycamore	• Retained
59	Common Ash	• Retained
60	Common Ash	• Retained
61	Common Sycamore	• Retained
62	Common Sycamore	• Retained
63	Common Sycamore	• Retained
64	Common Lime	• Retained
65	Goat Willow	• Retained
66	Common Lime	• Retained
67	Norway Maple	• Retained
68	Common Ash	• Retained
71	Common Ash	• Retained
72	Common Syamore	• Retained
75	Gum	• Retained
Grp 1	Goat Willow	• Fell to ground level and remove stump
Grp 2	Common Sycamore Common Beech	• Retained
Grp 3	Common Sycampre Elder Poplar Common Ash	• Remove section of group once the landscaping footpath has been set out on site
Grp 4	Field Maple	• Fell to ground level and grind out stump
Grp 5	Lime	• Retained
Grp 6	Common Sycamore	• Retained
Grp 7	Elder Common Sycamore Lime	• Retained
Grp 8	Lawson Cypress	• Retained
H1	Hawthorn	• Remove section of hedge as indicated on plan CBA7595.03 PP

- 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 fully consider nesting birds, bat and any other ecological constraints.

- 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!

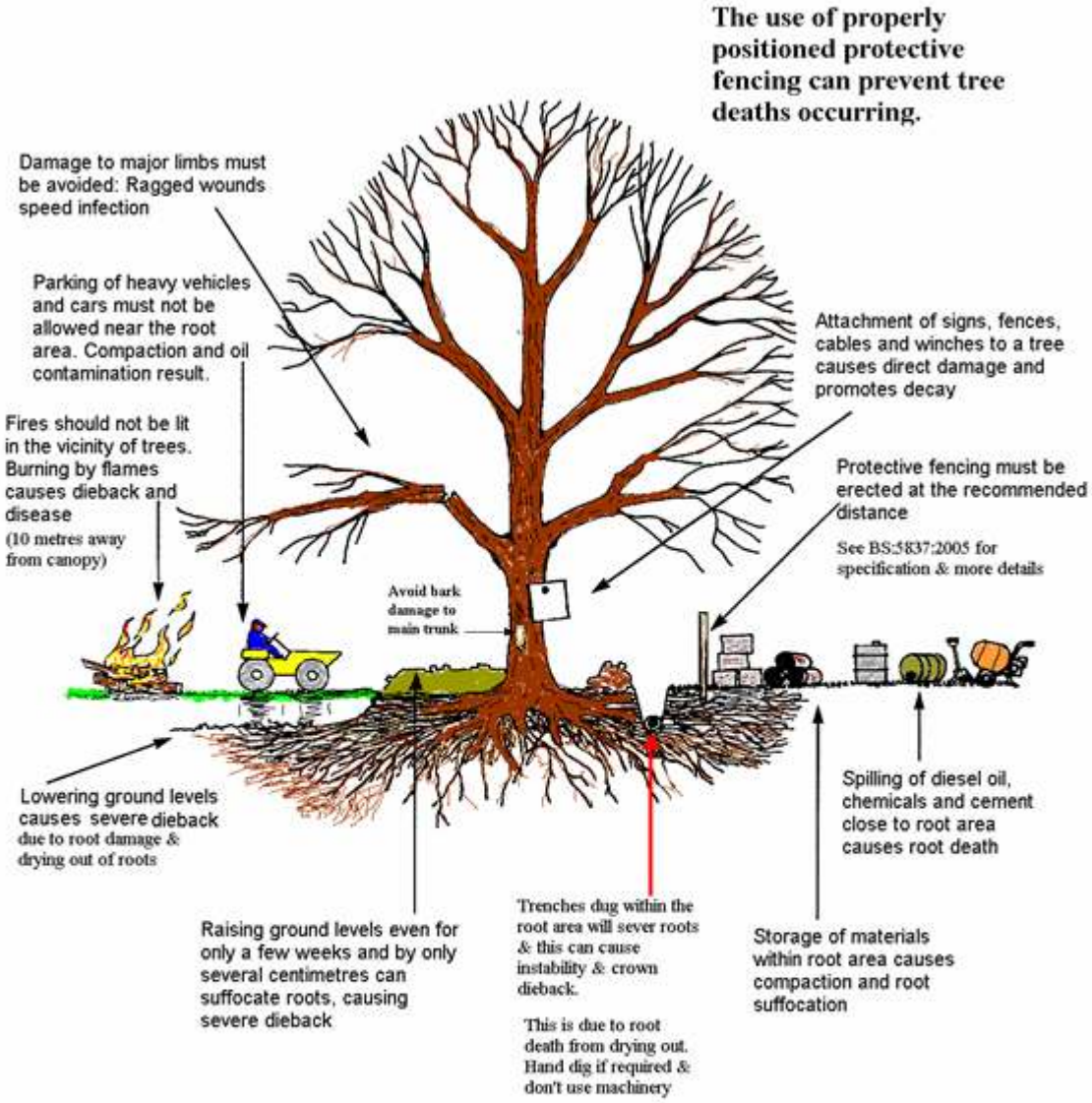
PROTECTIVE BARRIERS.
THESE BARRIERS MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

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

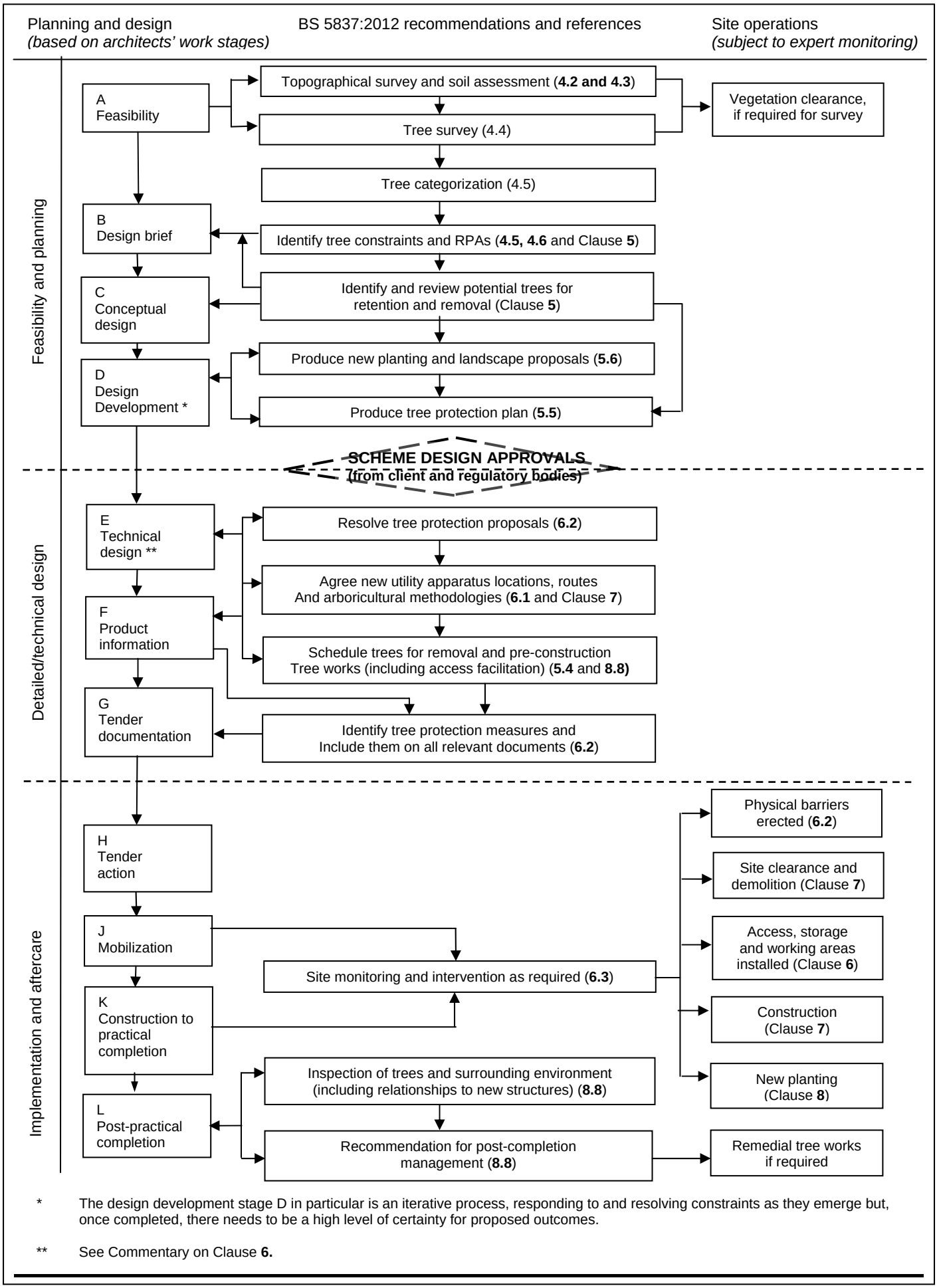


Please use copies of this as an on-site poster for personnel

(Source: Arboricultural Information Exchange website, 2005)


CB6

Figure 1 The design and construction process and tree care



* The design development stage D in particular is an iterative process, responding to and resolving constraints as they emerge but, once completed, there needs to be a high level of certainty for proposed outcomes.

** See Commentary on Clause **6.**


CB7

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.