Arboricultural Report



Relating to:

22 Rutters Close, Hillingdon UB7 9AL

Tree Survey	✓
Arboricultural Impact Assessment	✓
Arboricultural Method Statement	✓

All to BS5837:2012 – Trees in relation to design, demolition and construction - Recommendations

Produced For:
Marie Martinez

Ref: APA/AP/2019/188
Date: 29th October 2019

Prepared By:

Andrew Pinchin BSc (Hons), Dip Arb (RFS), FArborA, MICFor - Chartered Arboriculturist

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Appendices

Appendix 1 – Tree Survey Schedule to BS5837:2012

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Appendix 3 – BS5837 Categorisation System

✓ BS5837: 2012 compliant report, supplied electronically as pdf document

This report is for the exclusive use of the client and those involved in the submission and approval of the planning application to which the report relates and the implementation of any consented works. It may not be sold, lent, hired out or divulged to any third party not directly involved in the subject matter without the express consent of APArboriculture

Introduction

1.1 Overview

- The proposal is to erect a single storey side extension and a part two storey, part single storey rear extension
- A planning application has been submitted to London Borough of Hillingdon for these works
- 5 trees have been surveyed
- It is proposed to remove one small Category C Apple tree to facilitate the proposed works
- No pruning of trees will be required
- There are no incursions within the RPAs of retained trees
- The retained trees are to be protected during the development works in accordance with the BS
- A pre-commencement meeting is to be convened on site prior to any development related activity occurring

1.2 Key Issues for Implementation

If the proposed works are implemented, these are the key issues that the project manager/builder will need to be aware of:

- ***A pre-commencement meeting needs to be convened on site prior to any demolition or construction related activity starting (Section 4.2)***
- ***The tree protective fencing needs to be in place prior to any demolition or construction related activity starting (specifications given in Section 4.6)***

1.3 Contact Details

Contact	Name	Company/LPA	Tel. / E-mail address	Sent report
Client	Marie Martinez		-	✓
Architect/Planning Agent	Leona Varley	Fluent Architectural Design Services	0203 865 4920 leona.varley@fluent-ads.co.uk	✓
Arboricultural Consultant	Andrew Pinchin	APArboriculture	01932 450104 aparboriculture@gmail.com	
LPA Tree Officer	Trevor Heaps	London Borough of Hillingdon	01895 250230 trees@hillingdon.gov.uk	

1.4 Key Terms and Abbreviations

Arboricultural Impact Assessment *- An assessment of arboricultural impact*	**AIA**
Arboricultural Method Statement *- Contains the tree protection information*	**AMS**
British Standard 5837 2012: Trees in Relation to Design, Demolition and Construction – Recommendations – *the relevant British Standard*	**The BS**
Root Protection Area *- The volume of soil a tree needs to stay healthy*	**RPA**
Local Planning Authority *- The Council*	**LPA**
Tree Preservation Order *- A legal document that is used by the LPA to protect trees*	**TPO**

1.5 The Proposal/Relevant Planning History

The proposal is to erect a single storey side extension and a part two storey, part single storey rear extension.

A planning application has been submitted to London Borough of Hillingdon for these works and at the time of writing of this report is pending the Council's formal consideration (application ref. 2019/2960).

1.6 Brief and Purpose

This report has been commissioned by Marie Martinez to:

- Survey the trees in the vicinity of the proposed works in accordance with the BS.
- Assess the arboricultural impact of the project.
- Present an effective tree protection strategy for the duration of the project.
- Provide the necessary arboricultural information to enable the submitted planning application to be determined.

1.7 Scope

The trees in the vicinity of the proposed works have been surveyed in accordance with the BS. Trees with a stem diameter over 75mm have been included.

In addition to providing the necessary arboricultural information to enable the submitted planning application to be validated and determined, the report is intended to be used as a working document for site personnel to inform and guide the tree protection process throughout the development works.

A full hazard assessment of the trees (including the assessment of decay or defects and their implications), has not been undertaken as this is considered beyond the scope of this report. Detailed ecological considerations are also beyond the scope of this report.

1.8 Documents Supplied/Used

Document	Obtained From	Format/Ref
Existing and proposed plans	Fluent Architectural Design Services	Pdf & Dwg

1.9 Site Details

The site in question is within the administrative jurisdiction of London Borough of Hillingdon. It lies in Rutters Close in Hillingdon. In terms of levels, the site is essentially level with no inclines of significance from an arboricultural perspective.

Site Location Plan



The Online Soilscapes Viewer provided by the National Soil Resources Institute indicates that the underlying soil type is a freely draining, slightly acid, loamy soil. This will be less vulnerable to compaction than soils with clay content.

2 Tree Survey

2.1 Survey Method

The trees were surveyed on 29th October 2019.

Locations of the trees were plotted with a laser using triangulation and trilateration techniques.

The trees were inspected from ground level using widely accepted Visual Tree Assessment techniques. No climbing inspections were undertaken.
No samples of soil, tree tissue or suspected pests/pathogens were taken.

Heights of the trees were estimated by eye. Crown spreads at each of the four cardinal points were measured using a laser measuring device. The diameters of the trees were measured at a height of 1.5m above ground level (using a diameter tape) as per Annexe C of The BS.

Photographs were taken on site using a digital camera.

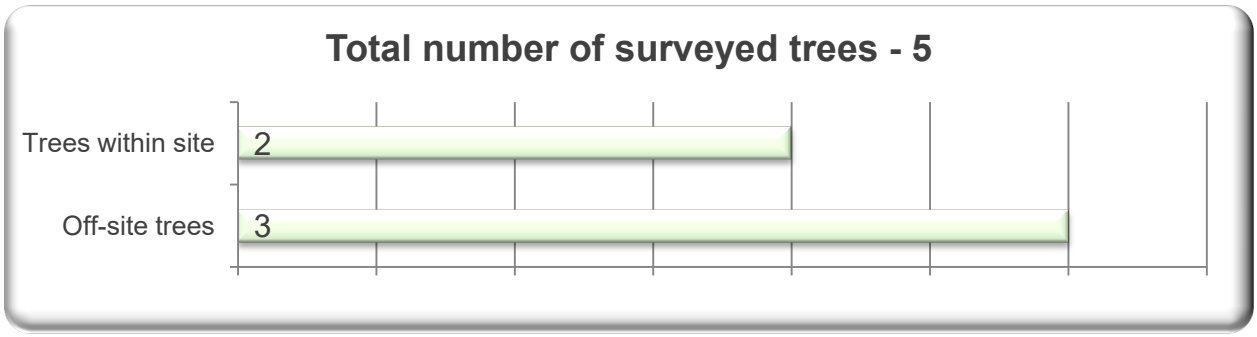
2.2 Tree Details

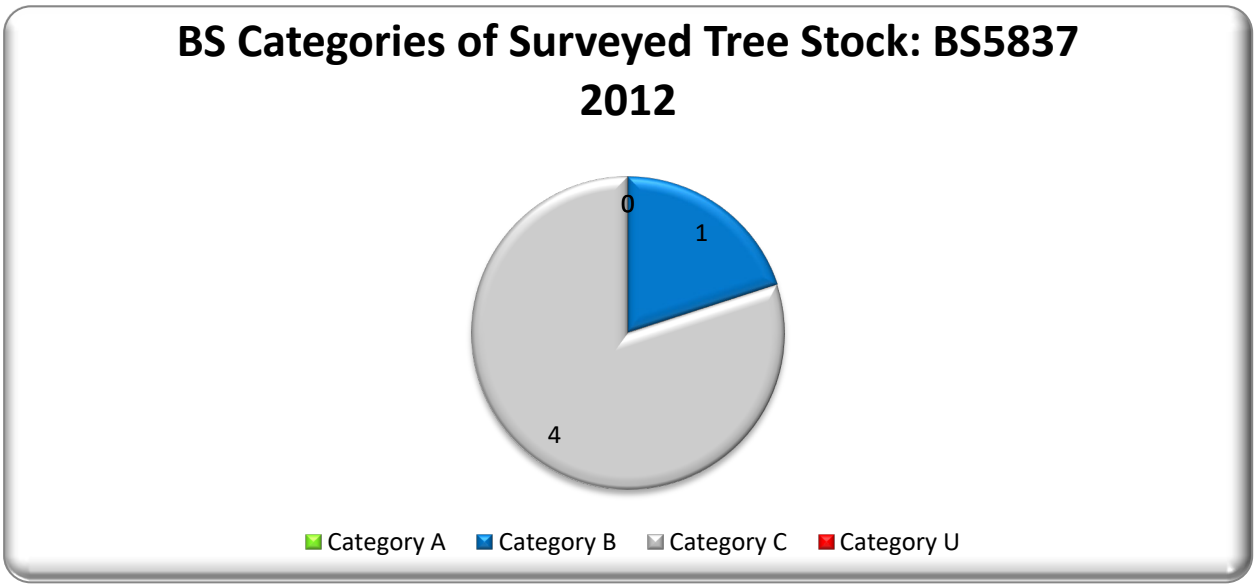
Full details of the surveyed trees and proposed works are given in the Tree Survey Schedule (Appendix 1). The locations of the trees are shown on the Tree Protection Plan (Appendix 2). The trees have been surveyed in accordance with the BS categorisation system, which can be summarised as follows:

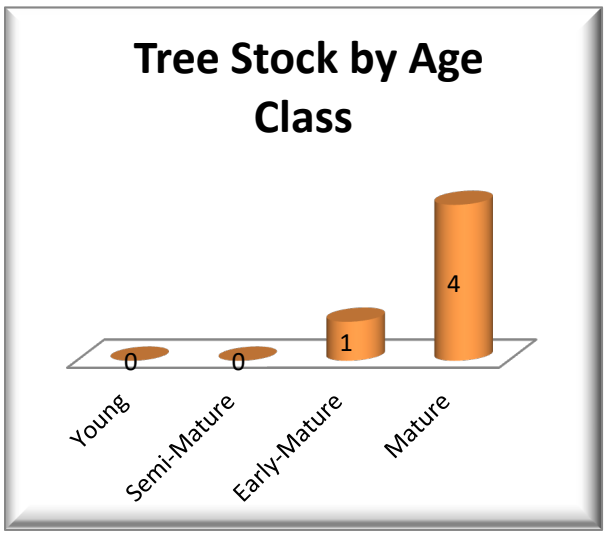
- **Category A** – trees of high quality and value with a life expectancy of more than 40 years
- **Category B**– trees of moderate quality and value, with a life expectancy of more than 20 years
- **Category C** – trees of low quality and value, with a life expectancy of more than 10 years
- **Category U** – trees for removal, with a life expectancy of less than 10 years

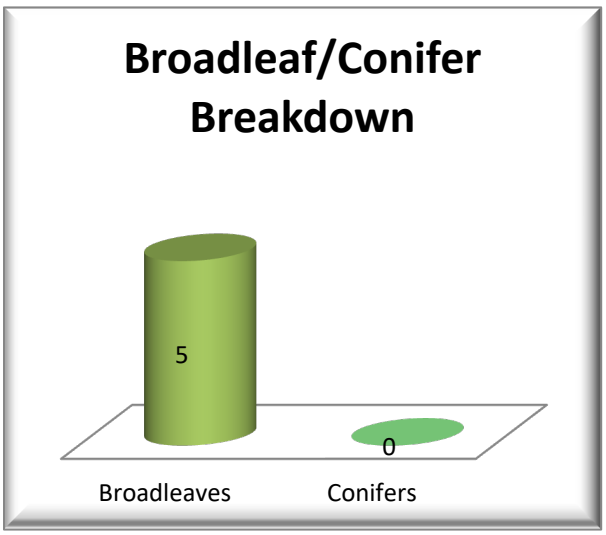
- *See Appendix 3 for more details on the BS5837 Categorisation System*

An overview of the surveyed tree stock is as follows:









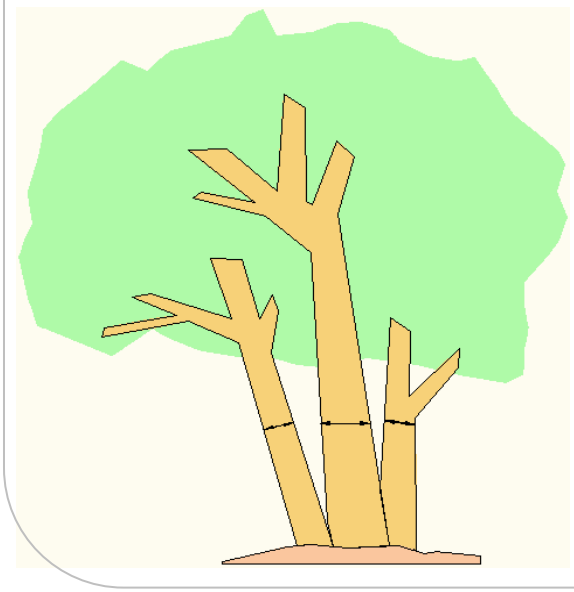
The RPAs of the trees have all been calculated in accordance with Annexe D of the BS and are given in the Tree Survey Schedule.

For single stemmed trees, the RPA radius is derived by multiplying the diameter of the tree at 1.5m above ground level by 12. For multi-stemmed trees, the RPA radius is derived by multiplying an equivalent stem diameter by 12. The formulae for calculating the equivalent stem diameters are as follows:

Equivalent stem diameter calculations for trees with multiple stems:

Trees with 2-5 stems: $\sqrt{(\text{stem diameter 1})^2 + (\text{stem diameter 2})^2 \ldots + (\text{stem diameter 5})^2}$

Trees with 5+ stems: $\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$



All stems measured at 1.5m above ground level.

RPA radius derived by multiplying equivalent stem diameter by 12

As for single stemmed trees, shape may under some circumstances be modified (with sound arboricultural justification) as long as total area remains the same

The RPA is the area (given in m^2) that contains sufficient rooting volume for a tree to survive and remain healthy. Disturbance within this area has the potential to impact significantly upon tree health and vitality.

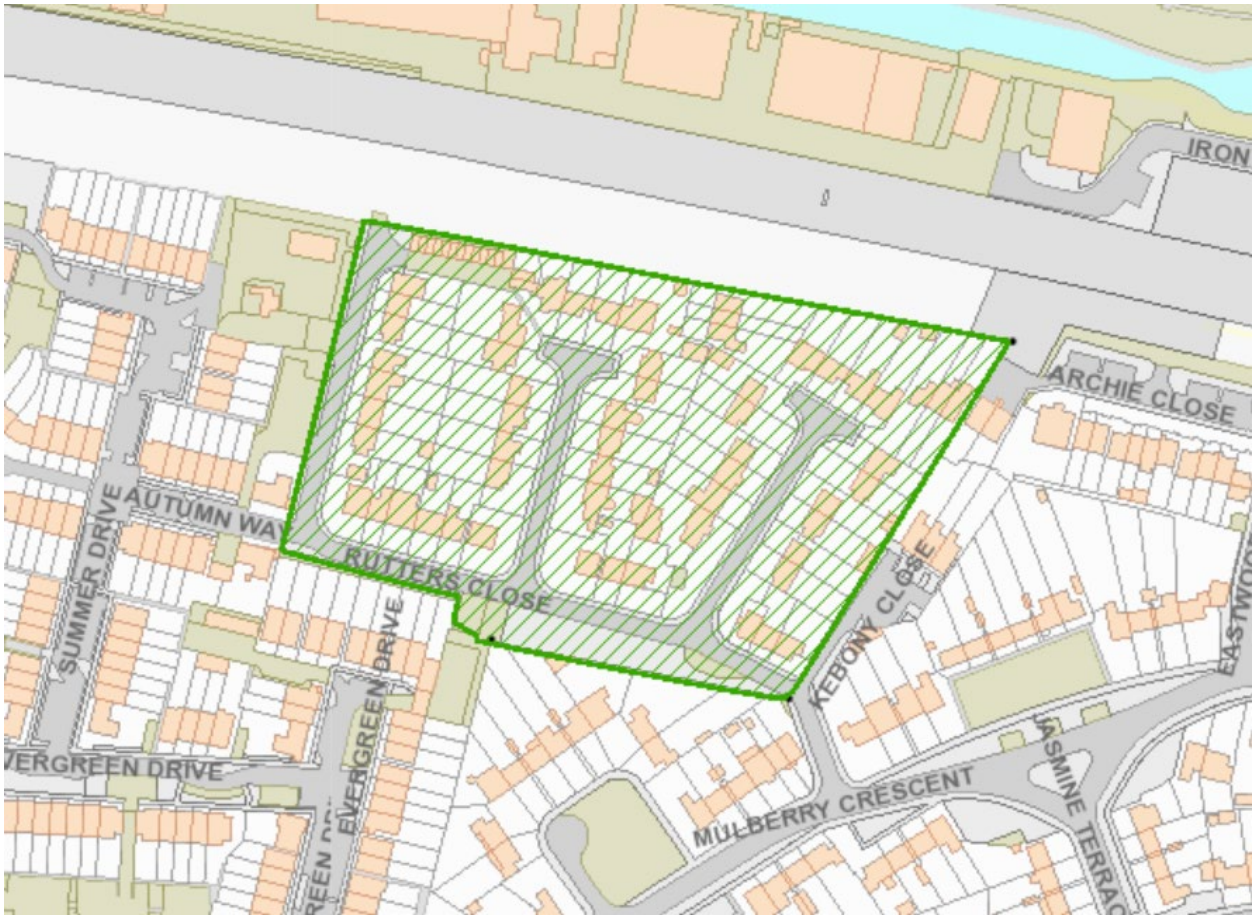
Sections 4.6.2 and 4.6.3 of the BS provide for the shape of the RPA to be modified from the starting point of a circle where rooting patterns are likely to be eccentric, subject to the total area remaining the same.

No RPAs have been modified in this instance. The RPAs of the retained trees are all shown as nominal circles on the Tree Protection Plan at Appendix 2.

2.3 Legal Protection Status of Trees

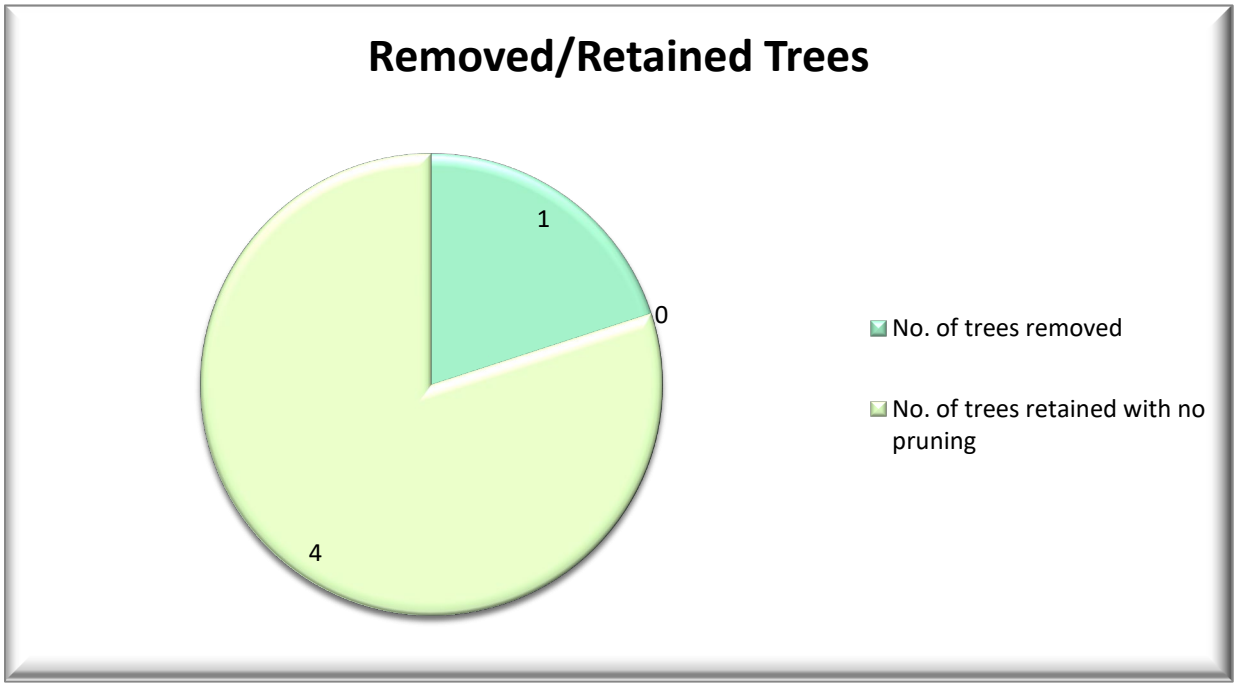
Type of Protection	Details/Ref.
Conservation Area	No
Tree Preservation Order	Yes – TPO 359

Extract from London Borough of Hillingdon website showing extent of Tree Preservation Order (TPO 359)



3 Arboricultural Impact Assessment

3.1 Overview of Arboricultural Impact







Number of trees with incursions within RPAs - 0

3.2 Tree Works

It is proposed to remove one small Category C tree (Apple T2) to facilitate the proposed works. This will not have any public amenity implications. No tree pruning works will be required in connection with the project.

3.3 Incursions into RPAs

Incursions may be fully invasive (where a degree of root disturbance is considered acceptable) or low invasive (where specialist methods are used to limit the degree of disturbance). In this instance, there are no incursions within the RPAs of the retained trees.

3.4 Light and Proximity Issues

Section 5.3 of the BS is concerned with the proximity of structures to trees and recommends that buildings are sited at distances from trees that allow for future growth without significant problems being experienced. Issues referred to include shading of buildings and open spaces, seasonal nuisances (dropping of leaves and fruits etc.) and concerns over safety. These issues can lead to pressure to heavily prune or remove trees in the future and LPAs will be mindful of this potential pressure when considering whether proposals for development in proximity to trees are acceptable.

The proposed extension works are considered to be situated at an acceptable distance from the retained trees and no proximity problems relating to trees are anticipated.

3.5 Mitigation

Only one small Apple tree is to be removed and there are no specific proposals for landscaping/new tree planting in connection with the project.

3.6 Conclusion

Subject to compliance with the AMS, the net arboricultural implications of the proposed works are considered acceptable. One small Category C Apple tree is to be removed, no trees are to be pruned and the retained trees are to be afforded an adequate degree of physical protection during the development works in accordance with the BS. Overall, the project is considered supportable from an arboricultural perspective.

4 Arboricultural Method Statement

4.1 Introduction

To safeguard the retained trees on/immediately adjacent to the site during the development process, the tree protection measures set out below will be adhered to. These will protect the rooting systems and aerial parts of the trees.

A copy of this AMS will be maintained on site at all times and made available to all site personnel.

All site personnel will be made aware of the key implications of this AMS. The Arboricultural Consultant can give a 'tool-box talk' to site personnel if required to ensure that the tree protection details are fully understood.

As of 2005, Local Planning Authorities have powers to serve Temporary Stop Notices if agreed tree protection measures are not carried out. Adhering to this AMS will ensure that such costly and time consuming action is avoided.

4.2 Pre-Commencement Meeting

A pre-commencement site meeting, involving the Site Manager, the Arboricultural Consultant and the LPA Tree Officer will be held to ensure that all aspects of the tree protection process are understood and agreed. Any potential problems can be discussed at this stage, along with the exact sequencing of events and the level of arboricultural inspection/supervision required. The Arboricultural Consultant will communicate a record of the meeting to all parties by e-mail.

Matters to be discussed at Pre-Commencement Meeting

- Timing and sequencing of works
- Exact locations and specification for tree protective fencing
- Any other arboricultural issues

It will also be useful for all parties to exchange current contact details at the meeting

4.3 Sequencing and Inspection/Supervision

Sequencing of events and effective arboricultural inspection/supervision are important elements of the tree protection process.

Works that have the potential to affect trees will be supervised by a suitably qualified and experienced Arboricultural Consultant.

The appointed Arboricultural Consultant will make a record of any visits to the site and will communicate details of each visit to the Client and the LPA. This will provide evidence of compliance and ultimately enable the LPA to discharge tree related planning conditions.

Key Stages with suggested sequencing of works:

- AMS issued to Site Manager/Building Company
- AMS read by all site personnel to ensure full understanding of implications. Any queries addressed by appointed Arboricultural Consultant
- Convening of pre-commencement meeting
- Tree Protective Fencing erected as per Tree Protection Plan
- Construction works carried out
- Tree protective fencing removed
- Landscaping works carried out (if any)

Summary of Required Arboricultural Inspection/Supervision:

Activity	Level of monitoring/supervision required
Erection of tree protective fencing	Inspection of tree protective fencing by appointed arboricultural consultant

4.4 General Site Precautions

The following points will be observed at all times:

- No fires will be lit within 10m of the canopies of retained trees.
- Notice boards, telephone cables or other services will not be attached to any parts of retained trees.
- Site operations will be planned to avoid damage to the aerial parts of trees. Particular care will be taken when using piling rigs and plant with booms, jibs and counterweights.
- Materials that contaminate the soil (e.g. concrete mixings, diesel oil, builders' sand and vehicle washings) will not be permitted to enter the RPAs of retained trees.

4.5 Carrying out of Tree Works

All works will be carried out in accordance with BS 3998: 2010 'Recommendations for Tree Work' and to current arboricultural best practice. Tree works will be carried out by a suitably qualified and experienced arboricultural contractor holding the necessary insurance cover. A list of such contractors is available from the Arboricultural Association at www.trees.org.uk. Lists of reputable local tree contractors are also available on many Local Authority websites. APArboriculture can provide advice on enlisting the services of tree contractors where required.

4.6 Tree Protective Fencing and Ground Protection

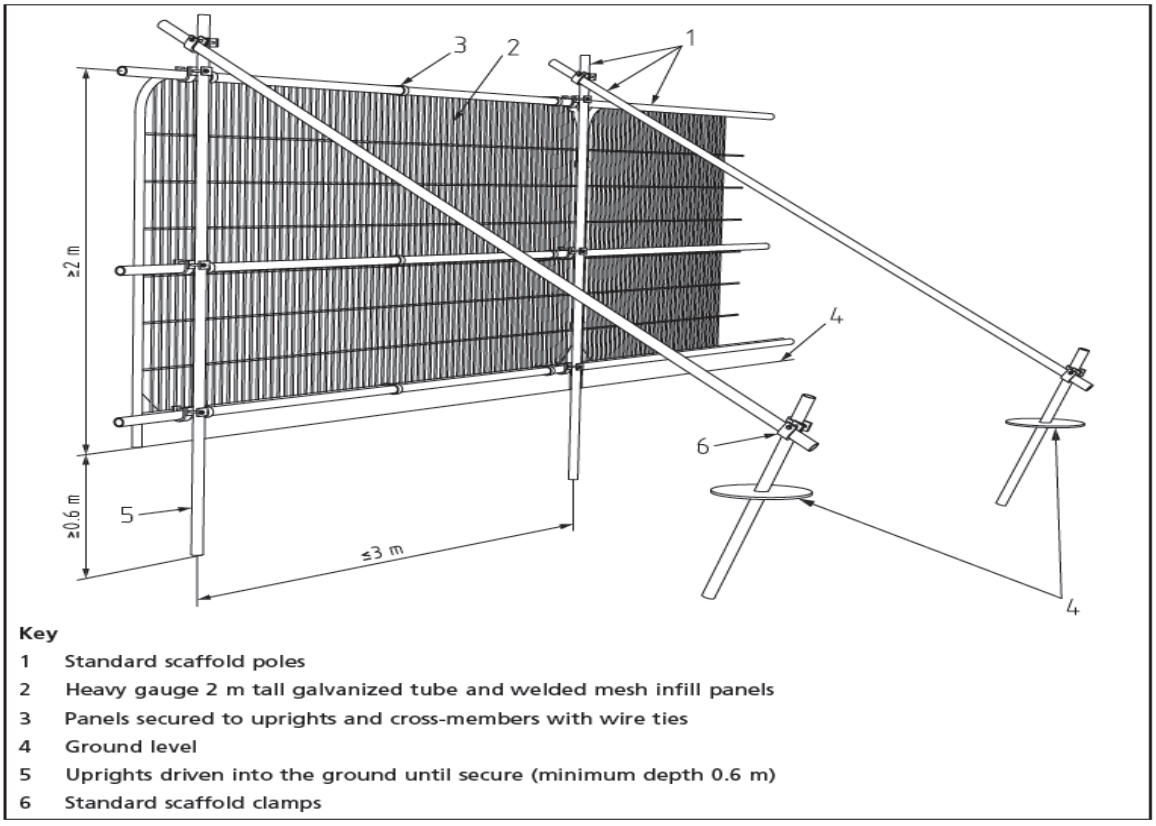
Tree protective fencing and ground protection are used to ensure that the RPAs of retained trees are safeguarded.

The required tree protective fencing is shown on the Tree Protection Plan (Appendix 2). The fencing will remain in position for the duration of the development and will only be moved/altered as agreed in writing by the LPA following arboricultural advice.

The tree protective fencing will be 2.0m heras fencing as specified in the BS. In this instance a full scaffold framework will not be necessary as only one heras panel will be

necessary at the rear of the property and 3 heras panels at the front (securely fixed together to protect the stem of Swedish Whitebeam T1 from physical damage).

Tree Protective Fencing Default Specification - BS5837: 2012



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Braced Heras Tree Protective Fencing in situ – BS5837: 2012







No ground protection has been specified in this instance as the retained trees can all be afforded an adequate degree of physical protection during the works with the use of tree protective fencing alone.

4.7 Site Access and Hard Surfacing.

No hard surfacing is to be removed or installed within the RPAs of retained trees.

4.8 Demolition

No demolition works are to take place within the RPAs of retained trees.

4.9 Underground Services

It will not be necessary to install any new underground services within the RPAs of retained trees.

4.10 Foundations and Construction

The proposed extension works are outside the RPAs of the retained trees and no specialist methods of construction will be necessary from an arboricultural perspective (in terms of preventing damage to the roots of retained trees).

4.11 Fencing and Landscaping

During the landscaping phase of the project (if any landscaping works take place), the following precautions will be observed:

- Soil within the RPAs of retained trees (and where new tree planting is proposed) will not be compacted. This will preclude the use of heavy plant within RPAs unless suitable ground protection is used
- There will be no changes in ground levels within the RPAs of retained trees
- Unwanted vegetation within the RPAs of retained trees will be removed manually or using contact herbicides that will not damage tree roots
- No underground irrigation or drainage pipes will be installed within the RPAs of retained trees
- Care will be taken when carrying out planting works not to damage the roots of retained trees. All planting pits within RPAs will be dug by hand and hedging will not be trench-planted

4.12 Amendments

Issues may arise on projects of this nature that require amendments to the previously agreed tree protection details. Any amendments to this AMS will be approved in writing by the LPA prior to being implemented. Copies of paperwork relating to any amendments will be communicated by the Arboricultural Consultant to the Client and LPA.

Appendix 1

Tree Survey Schedule

APArboriculture
www.aparboriculture.co.uk



Tree Survey Schedule

Tel. 01932 450104

Site: 22 Rutters Close, Hillingdon UB7 9AL
LPA: London Borough of Hillingdon
Date of Survey: 29th October 2019

BS5837: 2012 compliant survey by:
Andrew Pinchin
Ref. APA/AP/2019/188

Tree Ref	Common Name	Height	Crown Spread	Crown Height	Age Class	No. of Stems	Stem Diameter	RPA Radius	Vigour	Structural Condition	Landscape Value	BS Cat	Useful Life	Notes & Observations
T1	Swedish Whitebeam	9	5 5 5 5	2.5	M	1	560	6.7	Normal	Fair	Medium	B1	20+	Substantial mature Swedish Whitebeam at front of property; multi-stemmed at 2m ht; crown recently reduced; surrounded by tarmac
	No. of trees: 1													
	Recommended Works: No works proposed													
	Reasons for Works: N/A													
T2	Apple	6	4 3 4 4	2	M	2	410	4.9	Normal	Fair	Low	C1	10+	Typical mature Apple tree; twin-stemmed at 0.7m ht & further bifurcations higher in crown; of very modest quality & landscape significance
	No. of trees: 1													
	Recommended Works: Remove													
	Reasons for Works: To facilitate proposed development works													
T3	Cotoneaster	7	5 4 4 4	2	M	5	300 e	3.6	Normal	Fair	Low	C1	10+	Off-site, multi-stemmed Cotoneaster
	No. of trees: 1													
	Recommended Works: No works proposed													
	Reasons for Works: N/A													
T4	Chusan Palm	5	2 2 2 2	2	M	1	320 e	3.8	Normal	Fair	Low	C1	10+	Off-site Chusan Palm
	No. of trees: 1													
	Recommended Works: No works proposed													
	Reasons for Works: N/A													
T5	Bay Laurel	5	3 3 3 3	2	EM	4	220 e	2.6	Normal	Fair	Low	C1	10+	Small, off-site Bay Laurel
	No. of trees: 1													
	Recommended Works: No works proposed													
	Reasons for Works: N/A													

Total no. of surveyed trees: 5

Key to Tree Survey Schedule (*BS5837: 2012*)

Tree Ref. – Consecutive numbering. T = Individual Tree: G = Tree Group: H = Hedge

Species – Common or Latin name for tree

Height – Height of tree in metres

Crown Spread – Radial crown spread in metres at the four cardinal points (N E S W)

Crown Height – Height of lowest parts of crown above ground level in metres

Age Class – Young, Semi-Mature, Early-Mature, Mature, Over-Mature

No. of Stems – Number of stems over 75mm in diameter at 1.5m above ground level

Stem Diameter – Diameter of stem in mm at 1.5m above ground for single stemmed trees. For multi-stemmed trees, equivalent diameter figure calculated as per the BS (e= estimated value; m = mean value)

RPA Radius – The radius of the Root Protection Area of the tree (from the tree centre) in metres

Vigour – An indication of the physiological condition/health of the tree: Normal, Moderate, Poor, Dead

Structural Condition – An assessment of the overall structural condition of the tree: Good, Fair, Poor

Landscape Value – High, Medium, Low

BS Cat – BS5837: 2012 Category. A- High, B- Moderate, C- Low, U- Remove. *For full description of categories see Table 1 of BS5837:2012*

Useful Life – Estimated remaining contribution to the landscape in years

Notes and Observations – miscellaneous notes where it is considered that these may be useful

(Recommended works and reasons for works also given in Tree Survey Schedule).

Appendix 2

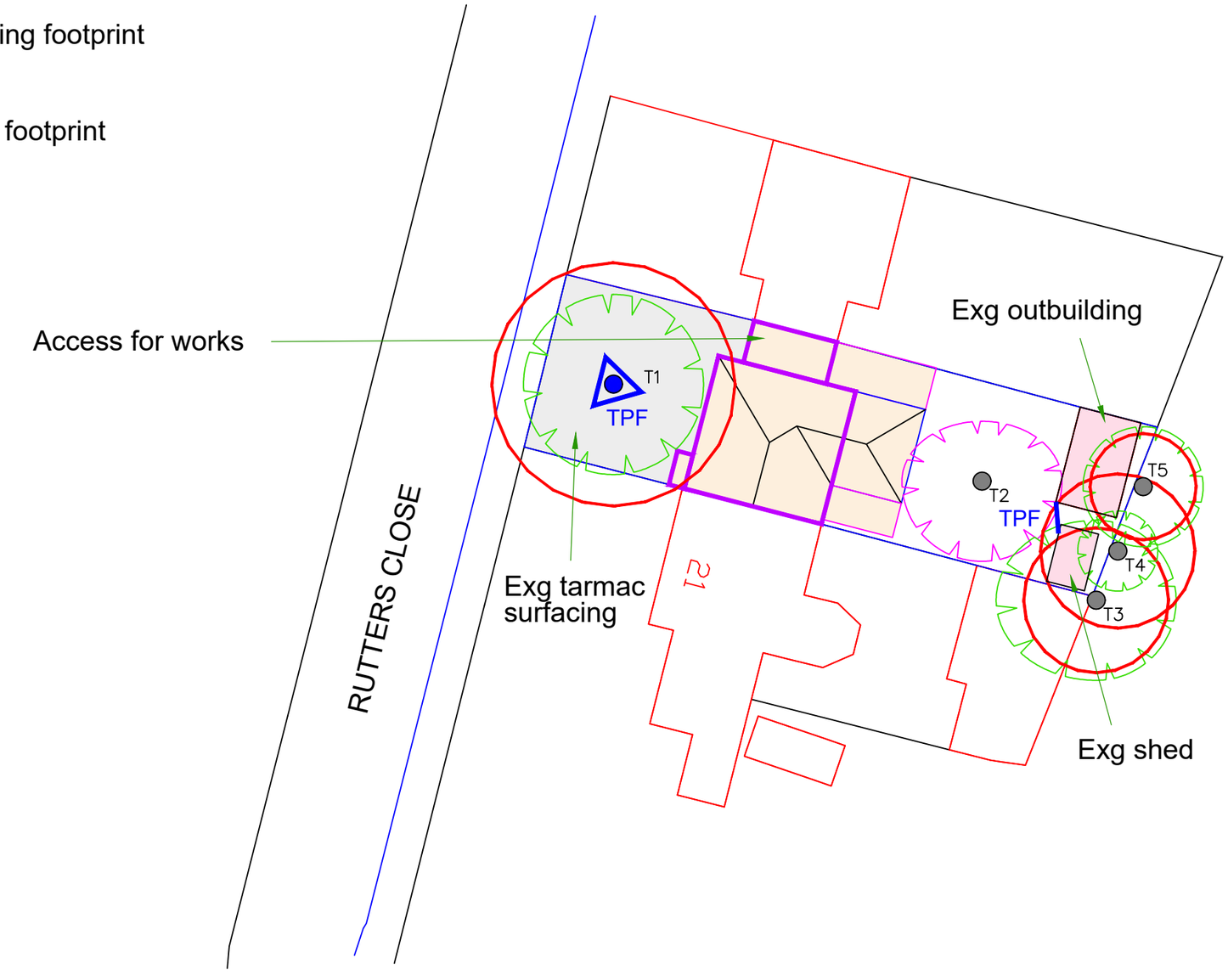
Tree Protection Plan

0m 20m
10m

LPA - London Borough of Hillingdon
Conservation Area - No
Tree Preservation Order - TPO 359

Exg dwelling footprint

Extended footprint



N

INDICATIVE

Root Protection Area (RPA) of retained tree (ref. BS5837:2012)

Category A

Category B

Category C

Category U

Tree to be removed

Ground protection

TPF Tree protective fencing

Plan to be printed in colour and to scale

DRAWING TITLE

Tree Protection Plan

22 Rutters Close
Hillingdon
UB7 9AL

SCALE	DATE	DRAWN BY
1:250 (A3)	29.10.19	AP

DRAWING NUMBER: TPP/APA/AP/2019/188

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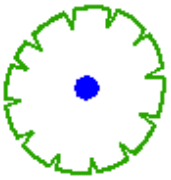
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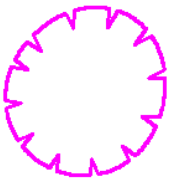
Appendix 3

BS5837 Categorisation System

BS5837:2012 Categorisation System (Abbreviated)

Category A		*Trees of high quality with an estimated remaining life expectancy of at least 40 years.* Particularly good specimens (A1); Trees, groups or woodlands of particular landscape significance (A2); Trees, groups or woodlands of significant conservation, historical or commemorative value (A3)
Category B		*Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.* Trees of slightly lower individual quality (B1); Trees of collective value but of lesser overall landscape significance than Category A trees (B2); Trees with material conservation or cultural value (B3)
Category C		*Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.* Unremarkable trees of limited merit (C1); Trees, groups or woodlands of low landscape value (C2); Trees with no material conservation or cultural value (C3)
Category U		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 (dead, declining and diseased trees etc.) It will normally be recommended that these trees be removed (unless they have particular conservation/ecological value)

- Category A, B and C trees should be considered for retention
- Although Category C trees are generally of lower overall quality and landscape significance, they may still constitute a material planning constraint
- Category U trees are usually unsuitable for retention



Tree to be removed (Category U trees and other trees where justification can be presented within context of development works being proposed)

The legal protection status of the trees will also be an important consideration regarding retention or otherwise of trees (see Section 2.3 of report)

For a complete description of the categories, see Table 1 of BS5837:2012 – Cascade chart for tree quality assessment