Arboricultural Impact Appraisal & Method Statement in accordance with BS5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*'

Project name:	**The Estate Yard, Camp Hill, Chiddingstone Causeway**		
Project Ref:	1739/A Rev-01	Date of report:	5 March 19
Written by:	Owen Allpress *BSc (Hons) Arboriculture* Working in the Arboricultural sector for over a decade I have achieved both an FdSc and a BSc (Hons) in Arboriculture. I am a professional member of the Arboricultural Association. Starting out working as an arborist I progressed toward a management role running a large and successful tree surgery operating in the southeast as operations manager, ultimately working with the arboricultural consultancy before becoming an independent consultant.		
Record of amendments:	- Initial version issued 11/06/17 - <u>This version:</u> Tree Retention plan updated (appendix 1).		

Local Authority Validation Summary

This arboricultural report contains supporting information and details regarding The Estate Yard, Camp Hill, Chiddingstone Causeway. The proposal is to redevelop the site for residential housing.

To assist local authority (LA) verification this survey contains the following information:

- A complete Initial Tree Survey in compliance with *BS5837: 2012 Trees in relation to design, demolition and construction – Recommendations,* carried out by a qualified arboricultural consultant.
- Scale plans with north indicated, detailing tree positions and tree categorisation.
- Implications for trees from the proposed development have been explored including trees retained and/or removed to facilitate the proposal.
- Arboricultural method statement for use on site. Describing a feasible means of executing the proposal including methods implemented to reduce the impact to retained trees.

Contents:

Appendices:

1.0 Introduction

1.1 Instruction: I have been instructed by The Red Leaf Trust to provide an Arboricultural Impact Appraisal and Method Statement as part of the proposed development at the site. The proposal is to re-develop the site for housing, providing two new semi-detached dwellings and the conversion of two existing buildings for use as residential properties.

1.2 The purpose of this report is as an Arboricultural Survey, Impact Appraisal and Method Statement describing existing trees, their value and any constraint they pose to the presented development proposals. This report is compiled in accordance with guidance set out within BS5837: 2012 *'Trees in relation to design, demolition and construction – Recommendations'*

1.3 Report contents: The following contents are included to provide a comprehensive assessment of the trees, their value and the constraint they may present to the proposed development.

- **A Tree Constraints Plan** – A location plan detailing the trees recorded at the site as it is at the time of survey.
- **A Tree Retention & Protection Plan** – A plan detailing retained trees and any protection measures required to allow the proposal to be completed with reduced risk of impact to trees at the site.
- **An Initial Tree Survey** – a written summary of the initial survey, site description and methodologies employed.
- **An Arboricultural Impact Appraisal** – an appraisal of the impact presented by the proposed development activities on trees.
- **Arboricultural Method Statement**: A method statement outlining working methodologies to achieve the proposed construction whilst minimising impact to trees at or adjacent to the site.
- A series of appendices including supporting documents.

1.4 Supporting documentation: The following documents were supplied prior to and in support of this assessment.

- Topographical survey ref: M1132 by ACAD Mapping dated 18/04/17
- Proposed site layout by MSD Architects.

2.0 Initial Tree Survey

2.1 Site survey: A site survey was conducted on 17th May 2018. The weather conditions at the time of the survey were dry and bright. Visibility was not impeded by weather conditions and a full visual assessment of each tree, recording the required information, was carried out.

Image 1: Existing site layout image and survey boundary marked in red.

2.2 Site description and layout: The Estate Yard is set back from Camp Hill and consists predominantly of pre-existing concrete surfaces. Trees recorded at the site are located to the north-eastern corner, some of which are located on third party property. No high value trees of particularly significant visual amenity were recorded as part of this investigation. Further information regarding trees recorded at the site can be found in the survey sheets located in appendix 2.

2.3 Statutory protection: Sevenoaks District Council were contacted by telephone and e-mail on 24th May 2018 to ascertain the presence of any tree related designations. A response was received on the 29th of May detailing no restrictions at the site.

2.4 Tree categorisation summary: Table 1, (below), illustrates the classification of trees recorded at the site. Further information regarding trees at the site can be obtained from the tree survey schedule in appendix 2.

Tree Category	Tree
A	-
B	2
C	3
U	-
Totals	5

Table 1: Tree categorisation across the site.

2.5 Tree survey methodology: The initial survey recorded information about trees at and adjacent to the site that were deemed to be relevant to the scope of the report. Third party trees are recorded where they are in such proximity that their root structure or canopy above ground may be impacted by development proposals.

2.6 Limitations: The survey was restricted to a visual assessment carried out from ground level. No aerial inspection, ground disturbance or invasive methods were implemented.

2.7 Data recorded: Trees at the site have been assessed and data recorded in accordance with tree requirements set out within BS5837: 2012. The following data was collected from each tree while at the site.

- REF: This is a sequential tree reference number beginning with a letter to define individual trees (T), tree groups (G), hedges (H) and woodlands (W). It is used to locate and refer to trees throughout the remainder of this report including subsequent reports at the same site.
- SPECIES: Tree species are recorded in the following format, "Common name, *(Scientific name)".* Scientific names are italicised and placed within parenthesis.
- HEIGHT: Tree height recorded to the nearest meter.
- DBH: Diameter at Breast Height, recorded at the appropriate location along the stem dependent on tree form, (usually 1.5m from ground level however this will vary depending on the form of the tree).
- CROWN SPREAD: Crown spread of the tree recorded to the nearest meter using four cardinal points as a reference.
- CLEARANCE: Clearance of the crown foliage and first significant limb including orientation using one of the four cardinal points as a reference.

- AGE CLASS: Age classification. This is a broad description used to detail approximate age. Age class is specific to tree species and their individual growth habit ranging from juvenile, semi-mature, mature and over-mature. The classifications 'veteran' and 'dead' are also used where relevant.
- CONDITION SUMMARY: Details of the trees overall condition in order to qualify its classification.
- PRELIMINARY MANAGEMENT ACTION: Management recommendations that are recommended to be carried out regardless of the development proposal. These are based on current site use and setting and may include trees with obvious defects that should be addressed regardless of the future of the site.
- CATEGORY GRADING: Category grading according BS5837: 2012 (see appendix 4).
- ROOT PROTECTION AREA (RPA): This measurement may be useful for designers to plot RPAs during early stages of the proposal's design or at a later stage to ascertain the dimensions of the root protection area for each tree prior to construction, (see appendix 5).

2.8 A root protection area in the context of this report is, as defined in BS5837:2012, the area calculated to be the optimum minimum rooting area required by the tree in order to remain viable. This area does not necessarily contain roots however should be thought of as an allotment of space to permit future growth to sustain the tree beyond any construction works. Each trees diameter is measured and applied to the formula found in appendix 4.

2.9 Root protection areas, (RPA) for each tree are recorded and are illustrated, (colour coded for tree categorisation) within the Tree Protection Plan within appendix 1.

2.10 Following the Initial Tree Survey, an Arboricultural Impact Appraisal has been carried out and is included in latter sections of this report. This is done in order to assess the physical impact of construction along with recommending the necessary protective measures to be applied to trees during construction.

3.0 Arboricultural Impact Appraisal

3.1 The proposal: The site is proposed to be re-developed for residential housing. The development proposal considered as part of this assessment consists of two new semi-detached residential properties with the conversion of the existing buildings at site to provide a further two properties.

3.2 Trees to be removed: No trees require removal to facilitate the proposed development. It should be noted that although not required to be removed as part of the development proposals T5, a self-set ash, is in very close proximity with the existing timber structure to the southern boundary. The tree itself is in a state of reduced vitality, (see appendix 3: image 2), and although not evident from ground level 'Ash Dieback', *(Hymenoscyphus fraxineus),* is common in Kent and Surrey and should be considered, among other causes, a possible reason for decline. This tree is likely to require removal in the future for the reasons explored above.

3.3 Access facilitation pruning: No access facilitation pruning is thought to be required to facilitate the proposed development. Retained trees at the site are at the perimeter and outside of access points and the development area.

3.4 Tree protection measures: Tree protection fencing will be deployed to delineate the construction exclusion zone. Specification for tree protection fencing is included in appendix 8 and consists of the light duty spec made up of HERAS panels with angled supports secured in place with driven stakes.

3.5 The above assessment of impact of the proposed development reveals a low impact potential to retained tree as part of the proposed development. No construction is set to occur within root protection areas and no trees are required to be removed to facilitate the proposed design.

3.6 The arboricultural method statement included in the final section of this report provides working methodologies as a follow on from the assessments made in the impact appraisal.

3.7 The arboricultural impact appraisal is based on the current layout at the time of this report. If the layout changes, the associated impact on trees may also be affected and may need to be re-considered. It remains the clients' duty to inform the project arboriculturalist of significant changes to the scheme which may affect the usefulness of this report.

4.0 Arboricultural Method Statement

This section of the report is the Arboricultural Method Statement for the specified construction activities and tree protection measures at the site. This document describes how trees will be protected and managed during the demolition & construction phase. This method statement is based on information available at the time of this report and may need to be updated as necessary as new information or changes in the site arise. It is the client's responsibility to communicate these changes to ensure the effectiveness of this document as it is intended to be used as briefing material and referred to throughout the development of the site.

A copy of this method statement must remain on site for the duration of the construction phase. This document may need to be circulated at key stages prior to commencement such as:

- At tendering of works to allow the effective identification and quantification of protective measures required to be carried out by the contractor.
- Plan the timing of key operations to minimise the impact of trees
- Referred to on site by contractors for practical guidance on how to protect trees at the site.

Activity	Timing	Notes
Protection fencing installed	Prior to demolition & construction phase.	Standard 'Heras' type tree protection fencing installed to delineate the Construction Exclusion Zone, see appendix 6 for specification.

Table 2: Schedule of tree protection measures and tree related actions.

4.1 Requirements: A copy of this Arboricultural Method Statement should remain on site throughout the duration of construction and be available for use both as a reference and as briefing material for any operation that may affect retained trees at the site.

4.2 Protection of Construction Exclusion Zone (CEZ): Fencing of the CEZ highlighted on the Tree Protection Plan within appendix 1 is to be carried out prior to any construction traffic or deliveries of material occurring at the site. Refer to paragraph 4.3 for CEZ prohibited activities. Tree protection fencing is to be installed at the location shown within the Tree Protection Plan and must remain in place for the duration of the construction works. Adjustments in position or physical breach of the CEZ is not permitted unless listed specifically within this method statement.

4.3 The areas protected by fencing or ground protection shall be referred to as the construction exclusion zones. The following actions shall be prohibited within the construction exclusion zones:

- Vehicular access.
- Regular pedestrian access unless on suitable ground protection.
- Storage of construction materials.
- Storage or handling of harmful chemicals.
- Any change in ground level unless otherwise stated in this report or under supervision of arboriculturalist.
- Construction activities including hard surfacing.

4.4 Services: The location of services is not known and no investigation or information is provided as part of this assessment with regard to underground services. Given the position of retained trees at the site, adequate scope exists to install services as required whilst avoiding root protection areas of trees. Any proposed new service installation in proximity to root protection areas of retained trees must first be reviewed by the project arboriculturalist prior to commencement of ground works, in order to ensure no damage occurs to tree roots.

4.5 Arboricultural supervision: Given the low-level constraint trees pose to development, no supervision is required as part of this method statement. It is, however, the recommendation that arboricultural input at a scheduled pre-commencement meeting be carried out to discuss tree protection in relation to development, both with contractors and any other attendees, and to ensure protection fencing is installed, as specified in this report. A summary of the activities that require arboricultural input is included below:

- Site meeting, pre-commencement with appointed contractors to discuss tree protection measure and phasing of works. The local authority arboricultural officer shall be given reasonable notice of such a meeting in order that they make attendance.
- Confirmation of correct tree protection fencing installation and delineation of the CEZ.

4.6 If significant root growth is disturbed during construction activity outside of that explored within this report, work shall cease until the project arboriculturalist has been consulted. Significant roots are defined as roots over 25mm in diameter or dense fibrous matter areas of root growth.

4.7 Root protection area calculation and interpretation is part of industry guidelines however, it should be noted that below ground root morphology is affected by a number of factors. The potential remains for discovering roots outside of root protection areas including roads as tree root growth conforms to no constant ideal.

4.8 If damage is inadvertently caused to trees at the site during construction, work shall cease until the project arboriculturalist has been consulted to assess the likely implications along with recommending any necessary remedial measures. This includes environmental accidents such as fuel spillage, fire or chemical damage.

4.9 The supervising arboriculturalist shall be appointed by the contractor, in this capacity, reporting to the local authority arboricultural officer may be required regarding changes and any unforeseen tree related matters.

Contact details:

Author: O. Allpress

Phone: 07427084984

Email: owen@owenallpress.com

Web: www.owenallpress.com

Project Ref:	1739/A Rev-01	Date:	5 March 19

Appendix 1 - Tree Constraints Plan & Tree Retention & Protection Plan

T1

T2

T3

T4

T5

This drawing should be viewed in colour.

See appendix 2, Tree Survey Schedule for further information regarding trees included in this plan.

Owen Allpress BSc(Hons) Arb
Independent Arboricultural Consultant

KEY:

- Tree Canopy
- RPA Category B
- RPA Category C

N

CLIENT: The Red Leaf Trust

DRAWING TITLE: Tree Constraints Plan

Site address: The Estate Yard, Camp Hill, Chiddingstone Causeway.

DATE DRAWN: 24/05/18

DRAWING NUMBER: 1739-01-A

SCALE: 1:200 @ A3

DRAWN BY: OA

CAMP HILL

2

1

T1

PLOT 3

T2

T3

PLOT 4

T4

T5

PLOT 2

PLOT 1

EXTG STORE

6

5

This drawing should be viewed in colour.

See appendix 2, Tree Survey Schedule for further information regarding trees included in this plan.

Owen Allpress BSc(Hons) Arb
Independent Arboricultural Consultant

KEY:

Tree Canopy

RPA of Retained Tree

Protection fencing

Construction exclusion zone

N

CLIENT:
Red Leaf Trust

DRAWING TITLE:
Retention & Protection Plan

Site address:
The Estate Yard, Camp Hill, Chiddingstone Causeway.

DATE DRAWN: 05/03/19

DRAWING NUMBER: 1739-02-A

SCALE: 1:200 @ A3

DRAWN BY: OA

Appendix 2 - Tree Survey Schedule

Client:	Red Leaf Trust			Tree Survey Schedule							
Site address:	Estate Yard, Camp Hill										
Survey Date:	17th May 2018										
Surveyor:	O.Allpress										

Owen Allpress BSc (Hons) Arb
Independent Arboricultural Consultant

Ref	Species	Height (m)	DBH (mm)	Crown spread (m)				Clearance (m)	Age class	Condition summary	Preliminary management action	Category grading	Root Protection Radius (m)
T1	Common ash, *(Fraxinus excelsior)*	9	320 est	N	E	S	W	Foliage: 3s; Significant branch: 3s	Mature	Third party, no access. Dimensions estimated.	None at time of survey.	B1	3.8
				3 Avg									
T2	Silver birch, *(Betula pendula)*	14	280	N	E	S	W	Foliage: 3s; Significant branch: 3s	Mature	Third party, no access. Lower crown exhibiting dieback. Dimensions estimated.	None at time of survey.	C1	3.4
				5	4	3	3						
T3	Norway spruce, *(Picea abies)*	5	150 est	N	E	S	W	Foliage: 1n; Significant branch: 2n	Juvenile	Shaded tree behind container.	None at time of survey.	C1	1.8
				1	1	1	2						
T4	Leyland cypress, *(X Cuprocyparis leylandi)*	16	400 est	N	E	S	W	Foliage: 2s; Significant branch: 2s	Mature	Third party tree adjacent to neighbouring drive. Multiple stem inclusions, dimensions estimated.	None at time of survey.	B1	4.8
				3 Avg									
T5	Common ash, *(Fraxinus excelsior)*	11	250 est	N	E	S	W	Foliage: 3n; Significant branch: 4n	Semi-mature	Third party tree in poor vitality. Overhanging boundary.	None at this time, however the tree may need to be removed in the future due to proximity and /or conflict to existing/renovated structures.	C1	3.0
				3	4	4	3						

Appendix 3 – Photographs

Image 1: Showing existing buildings at south eastern corner of site.

Image 2: Showing T5, located to the rear corner of the existing building, shown on the right hand side of image 1, is of reduced vitality and in direct conflict with existing structures.

Appendix 4 – Cascade Chart for Tree Categorisation

BS5837:2012 Table 1 – Cascade chart for tree quality assessment

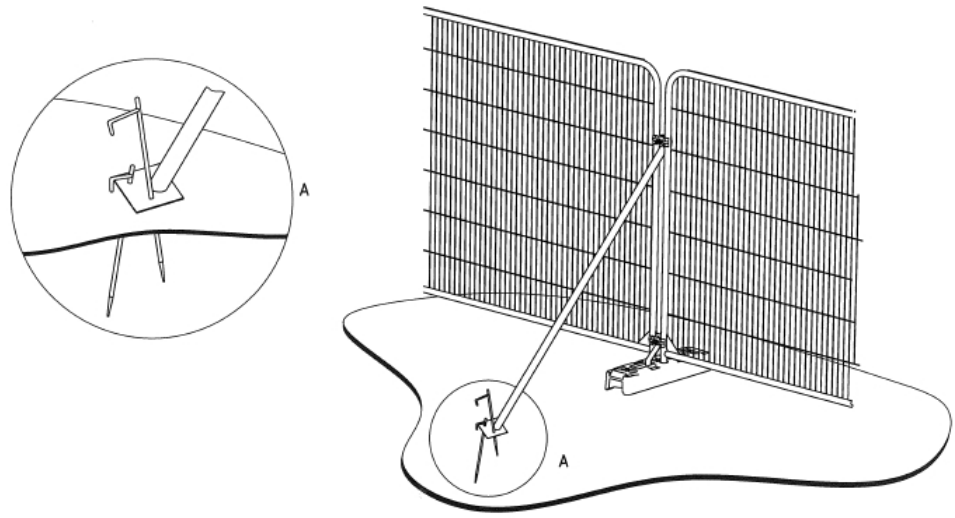
Category and definition	Criteria (including subcategories where appropriate)		
Trees unsuitable for retention (see Note)			
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have 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 *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see [BS5837:2012]* ***4.5.7****.*		
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**
Trees to be considered for retention			
Category A **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)
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually 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 or other cultural value
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 150 mm	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

The above is an extract form BS5837:2012. The key in plans provided in appendix 1 illustrates categorisations described above.

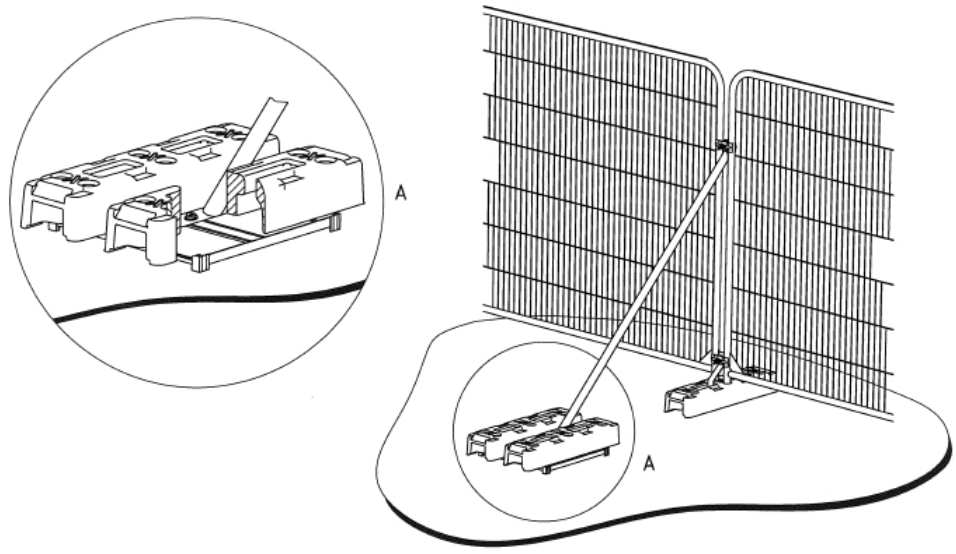
Appendix 5 – Root Protection Area Formulas

Tree type	Formula used. (Taken form BS5837: 2012)
Single Stem	$RPA(m^2) = \frac{(\text{stem diameter (mm) @ 1.5 m x 12})^2 \times 3.142}{1000}$
Up to five stems	$\sqrt{(\text{stem diameter 1})^2 + (\text{stem diameter 2})^2 \ldots + (\text{stem diameter 5})^2}$
Trees with more than five stems	$\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$

Appendix 6– Tree Protection Fencing Specification



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

Appendix 7– Tree Protection Fencing Signage

TREE PROTECTION AREA

Trees enclosed in this area are subject to planning conditions and/or tree preservation orders (TPO). Contravention of TPOs can result in criminal prosecution

No access beyond this point is permitted unless part of planned operations described within arboricultural method statement.

Owen Allpress BSc (Hons) Arb
Independent Arboricultural Consultant