BS 5837:2012 Arboricultural Survey

Land to the East of Yapton Lane, Walberton, West Sussex

Presented to Land Allocation Limited

Issued: July 2021

Delta-Simons Project No. 20-1611.01

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Report Details

Client	Land Allocation Limited
Report Title	BS 5837:2012 Arboricultural Survey
Site Address	Land to the East of Yapton Lane, Walberton, West Sussex
Project No.	20-1611.01
Delta-Simons Contact	Peter Morrell ([redacted])

Quality Assurance

Issue No.	Status	Issue Date	Comments	Author	Technical Review	Authorised
1	Final	30th July 2021		Pete Morrell Principal Arboriculturist	Charlotte Sanderson-Lewis Associate and Ecology Team Leader	Sue Charlton Principal Ecologist

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Executive Summary

Purpose	Delta-Simons Environmental Consultants Ltd was instructed by Land Allocation Limited ('the Client'), to undertake a Tree Survey to BS 5837:2012 standard of an area of land situated off Yapton Lane, Walberton, West Sussex ('the Site'). The survey was undertaken on 5th March 2021. The survey was undertaken to inform a planning application for the Site.
Current Site Status	The Site comprises a large arable field with continuous hedgerows and scattered broadleaved trees on three boundaries.
Proposed Development	It is understood that the proposed development will comprise a residential development of up to 75 units, with associated hard and soft landscaping with access from Yapton Lane.
Results	A total of six trees and four tree groups were identified and assessed as part of the Tree Survey. The results of the desk search undertaken on Arun District Council's online map on 03/03/2021 indicates that one tree is covered by Arun District Council Tree Preservation Order (TPO) Land East of Yapton Lane, Walberton (Feb 2021). Walberton Village and Walberton Village Green Conservation Area (CA) incorporates a small section of hedgerow at the south-western extent of the Site. Two species-poor hedgerows were identified and assessed as part of the Hedgerow Survey
Recommendations	<u>Recommendation 1 (Adequate Tree Protection)</u> Those trees identified within the proposed development plan for retention will need to be adequately protected during any construction works. Measures to protect trees should follow the best practice principles set out in BS 5837: Trees in Relation to Design, Development and Construction (2012). Prior to any construction or development work proceeding, the Root Protection Area (RPA) of individual trees to be retained should be marked out. Marking out should be completed by a competent person with arboricultural expertise. All trees that could be impacted should be protected by barriers or ground protection around the calculated RPA, and as indicated on the Tree Constraints Plan (TCP) produced in association with this Assessment.
This Tree Survey Executive Summary is intended as a summary of the assessment of the Site based on information received by Delta-Simons at the time of production. This Executive Summary should be read in conjunction with the full Report.	

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1.0 Introduction

1.1 Purpose and Scope of the Survey

Delta-Simons Environmental Consultants Ltd was instructed by Land Allocation Limited (the 'Client') to undertake an Arboricultural Survey to BS 5837:2012 standard. The survey was undertaken of an area of land situated off Yapton Lane, Walberton, West Sussex (hereafter referred to as 'the Site'). The survey was undertaken on 5th March 2021. The Site location and the area surveyed are shown in Figure 1. The survey was undertaken in order to inform a planning application for residential development at the Site.

The aims of the Tree Survey were to:

- Identify the individual tree species present at the Site by means of visual inspection;
- To define the approximate age, condition and canopy spread of all individual mature trees identified and the value of these within the development;
- To identify any trees that present a risk to existing or proposed foundations or other structures that may be constructed on the Site and recommend actions to remove this risk; and
- Recommend tree management or mitigation measures where appropriate.

1.2 Site Description

The Site is centred at Ordnance Survey (OS) grid reference SU 97808 06006, to the east of Walberton in West Sussex. The Site covers an area of approximately 7.6 hectares (ha) and comprises a large arable field with continuous hedgerows along three boundaries and scattered broadleaved trees on all four boundaries. The Site did not support standing water at the time of the survey.

The Site is set to the west of Walberton, bordered by Yapton Lane (B2132) to the east, with the village extending beyond. A golf course lies to the north and east, separated from the Site by a boundary hedgerow. Arable land extends to the south, with the southern boundary defined by a track/public footpath.

The Site layout is shown in Figure 2.

1.3 Proposed Development

It is understood that the proposed development will comprise of up to 75 residential dwellings, with associated hard and soft landscaping with access from Yapton Lane.

2.0 Legislation

2.1 Trees

Local planning authorities look upon trees as being highly beneficial to the locality. To ensure that any important specimens, or significant groups of trees are retained, they may place Tree Preservation Orders (TPOs) on them. In other situations, villages or whole districts may be classified as conservation areas. In these instances certain trees in the designated area will be protected. When trees are protected, legal procedures must be followed before any work is carried out.

When trees are protected by Preservation Orders, no work should be carried out on them without prior written consent from the Local Planning Authority (LPA). Once an application is made, the Authority personnel must inspect the trees, and make a decision within a statutory eight-week period as to whether work can go ahead. If no decision is made within the eight weeks period, the appellant can appeal to the Office of the Deputy Prime Minister for non-determination. If the Local Authority (LA) refuses the application the appellant still has the right to appeal.

If a tree protected by a Preservation Order is either killed or wilfully destroyed, the owners of the tree, and the contractor who did the work, can both be prosecuted. The fines for killing or wilfully destroying a tree can be high, i.e. the current maximum is £20,000 per tree, and there is an automatic requirement to re-plant. The current maximum for minor unlawful infringements, such as pruning, is £2,500.

Trees which are dead, dying, or dangerous are exempt from the legislation, although if such trees are removed, the onus on proving they fell into one of these categories lies with the tree owner. Whenever possible it is strongly recommended that the LA be given at least five days' notice before any work on such trees is carried out.

Trees in a conservation area that are already protected by a TPO are subject to the normal procedures and controls for any tree covered by such an Order.

Trees in a conservation area that are not protected by a TPO are protected by the provision in Section 211 of The Town and Country Planning Act (1990). These provisions require people to notify the LPA, using a 'section 211 notice', six weeks before carrying out certain works on such trees, unless an exception applies. The works may go ahead before the end of the six-week period if the LPA gives consent. This notice period gives the Authority an opportunity to consider whether to make an Order on the tree.

According to Annex 2 Glossary of the National Planning Practice Guidance, a veteran tree is a tree of exceptional wildlife, landscape or cultural value by virtue of its great age, size or condition. Local authorities, when determining planning applications affecting veteran trees are expected to consult the standing advice published jointly by Natural England and the Forestry Commission.

2.2 Hedgerows

The Hedgerows Regulations 1997 applies to any hedgerow which has a continuous length of, or exceeding, 20 m, or is less than 20 m but adjoins another hedgerow at each end. A hedgerow can be categorised as 'important' if it is 30 years old or older and satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations. The removal of a hedgerow which is protected under these criteria is prohibited without appropriate measures being taken and it is an offence to intentionally or recklessly remove, or cause or permit another person to remove, a hedgerow in contravention of Regulation 5(1) or (9).

3.0 Methodology

The methodology set out below is a detailed summary of the suggested approach to tree assessment as described in British Standard 5837:2012. This Report has applied the methodology to all significant individual trees or groups of trees present at or near to the Site. Trees below 15 cm trunk diameter were generally excluded from the survey. All floral names follow the nomenclature of Stace (2010).

3.1 Trees

Trees have been broadly assessed based on guidance set out within the British Standard BS 5837:2012 Trees in Relation to Design, Development and Construction. This standard provides recommendations and guidance on the principles to be applied to achieve successful integration of development with trees, shrubs and hedgerows. Where development is to occur, the standard provides guidance on the approach needed to decide which trees are appropriate for retention, and the means for protecting these trees during the development (including demolition and construction works) and the means of incorporating trees into the developed landscape.

Trees on or adjacent to the Site have been divided into one of four categories (based on the cascade chart for tree quality assessment). These are classed as A, B, C or U (Section 4 of BS 5837) within Table 1. This gives an indication as to the tree's importance in relation to the Site, the local landscape and, also, the value and quality of the existing trees on-Site. This assists informal decisions concerning which trees should be removed or retained should development occur. For a tree to qualify under any given category it should fall within the scope of that category's definition (see below).

Categories A, B and C cover trees that should be a material consideration in the development process, each with three further sub-categories (i, ii, iii) which are intended to reflect arboricultural, landscape and cultural (nature conservation) values. Category U trees may have no significant landscape value but it is not presumed that there is any overriding need to remove these unless stated otherwise in the description and recommendations. They are for this reason not considered as being significant within the planning process. In assigning trees to the A, B or C categories, the presence of any serious disease or tree–related hazard is taken into account. If the disease is considered fatal and/or irremediable, or likely to require sanitation for the protection of other trees it may be categorised as U with a recommendation for work or even removal, even if they are otherwise of considerable value.

Category (A): Trees whose retention is most desirable and are of high quality and value. These trees are considered to be in such a condition as to be able to make a lasting contribution (a minimum of 40 years) and may comprise:

- Trees which are particularly good examples of their species, especially rare or unusual, or essential components of groups or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue);
- Trees, or groups of trees, which provide a definite screening or softening effect to the locality in relation to views into or out of the Site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups); and
- Trees or groups of significant conservation, historical, commemorative or other value (e.g. Veteran or wood-pasture trees).

Category (B): Trees whose retention is considered desirable and are of moderate quality and value. These trees are considered to be in such a condition as to make a significant contribution (a minimum of 20 years) and may comprise:

- Trees that might be included in the high category but because of their numbers or slightly impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage), are downgraded in favour of the best individuals;
- Trees present in numbers such that they form distinct landscape features and attract a higher collective rating than they would as individuals. Individually these trees are not essential components of formal or semi-formal arboricultural features, or trees situated mainly internally to the Site and have little visual impact beyond the Site; and

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- Trees with clearly identifiable conservation or other cultural benefits.

Category (C): Trees that could be retained but are considered to be of low quality and value. These trees are in an adequate condition to remain until new planting could be established (a minimum of ten years) or are young trees with a stem diameter below 150 mm and may comprise:

- Trees not qualifying in higher categories;
- Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value and or trees offering low or only temporary screening benefit; and
- Trees with very limited conservation or other cultural benefits.

Category (U): Trees that are considered to have no significant landscape value but it is not presumed that there is any overriding need to remove these unless stated otherwise in the description and recommendations. They are for this reason not considered as being significant within the planning process. These trees will be in such a condition that any existing value would be lost within 10 years and which should in the current context be ignored or removed for reasons of sound arboricultural management. Trees within this category are:

- 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;
- Trees that are dead or are showing signs of significant, immediate or irreversible overall decline; and
- 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.

Species have been recorded by common and scientific name. Height has been estimated in metres and stem diameter measured in centimetres unless impractical, taken at a height of 1.5 m from the base of the tree.

In the assessment particular consideration has been given to:

- The health, vigour and condition of each tree;
- The presence of any structural defects in each tree and its life expectancy;
- The size and form of each tree and its suitability within the context of the proposed scheme; and
- The location of each tree relative to existing Site features, e.g. its value as a screen or as a skyline feature.

Age class is assessed according to the age class categories referred to in BS 5837.

- Y: Young trees age less than 1/3 life expectancy;
- SM: Middle age trees 1/3 – 2/3 life expectancy;
- M: Mature trees over 2/3 life expectancy; and
- OM: Over mature – declining or moribund trees of low vigour.

The overall condition of any individual tree, or group of trees, has been referred to using one of the definitions listed below. A more detailed description of condition has been noted in the Tree Schedule:

- G **Good:** A sound tree or trees needing little, if any, attention;
- F **Fair:** A tree or trees with minor but rectifiable defects or in the early stages of stress, from which it may recover;
- P **Poor:** A tree or trees with major structural and physiological defects or stressed such that it would be very expensive and inappropriate to retain; and
- D **Dead:** A tree or trees no longer alive. However, this could also apply to those trees that are dying and will be unlikely to recover, or are becoming or have become dangerous.

Major defects or diseases and relevant observations have also been recorded. Dead wood has been defined as the following:

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Twigs and small branch material	-	Up to 5 cm in diameter.
Minor dead wood	-	5 cm to 10 cm in diameter.
Major dead wood	-	10 cm in diameter and above.

The survey was completed from ground level only. Aerial inspections were not undertaken. Evaluations of tree conditions given within this assessment apply to the date of survey and cannot be assumed to remain unchanged, and it may be necessary to review these within 24 months, in accordance with good arboricultural practice.

3.2 Potential for Protected Species

Potential bat roost locations are described within this Report using the methodology as that recommended by the Bat Conservation Trust (BCT), see Collins J. (ed) (2016) in references (Appendix A).

3.3 Tree Plans and Tree Schedules

The extent and positions of significant individual trees or groups of trees close to the Site are shown on the Arboricultural Survey Plan (Figure 2). The Root Protection Areas (RPA) of the key trees of value identified for, or recommended for retention have been marked within the Constraints Plan (Figures 3) using the RPAs provided in the Tree Schedule within Table 1.

A summary that includes the trees identified on or near to the Site is included in the Tree Assessment Report detailing information on each group of trees. This is also provided in Table 1. Within the summary table maximum RPAs (m^2) for estimated tree diameters have been included where appropriate, as well as a calculated corresponding radius of the circle for that RPA. The RPAs are formulated as described below and assist when designing layouts in relation to trees.

3.4 Root Protection Area

Below ground constraints to development are represented by the root plate around a tree, which needs protecting in order for the tree to be incorporated into a proposed scheme without adverse harm to the tree or structural integrity of any proposed foundation structures.

This area is illustrated by the RPA and is calculated according to the formula set out in BS 5837:(2012). This area is equivalent to a circle with a radius 12 x the stem diameter for single stem trees or the basal diameter for trees with more than one stem arising less than 1.5 m above ground level.

RPA (m^2) = (stem diameter (mm) x 12 / 1000) ^{2} x 3.142

This figure should be capped to 707 m^2, that is, equivalent to a circle with a radius of 15 m, or a square with approximately 26 m sides

Taken from Table 2: Calculating the RPA, BS 5837 (2005).

3.5 Hedgerows

An assessment of any hedgerows present at the Site, which may be adversely affected by the proposed development, was undertaken using the standard hedgerow surveying methodology outlined in the Hedgerow Regulations 1997. The purpose of the assessment was to ascertain whether the hedgerows are classified as 'nationally important' and, therefore, protected under the Hedgerow Regulations 1997. The assessment involves a scoring system which relies on particular features, number of woody and floral species present within the hedgerow habitat, and the age of the hedgerow.

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The following hedgerow features were recorded:

- A bank or wall supporting the hedgerow for at least half its length;
- Gaps in the hedgerow not exceeding 10% of its length;
- An average of at least one standard tree per 50 m of hedgerow;
- The number of woodland plant species (as defined);
- A ditch along at least half the hedgerow;
- Connections (as defined by the Regulations) scoring four points or more; and
- A parallel hedge within 15 m of the hedgerow.

An assessment of a 30 m section was undertaken per 100 m of hedgerow length, which involved recording the number of woody species present. Where two or more sections of each hedgerow were surveyed, the average number of the species was calculated.

3.6 Limitations of the Survey

There were no limitations to the survey in terms of timing and weather conditions. Where access to trees within off-Site land was not possible approximations of the dimensions of the trees were made, including of the stem diameter at breast height. As most trees were clearly visible from the Site this is not anticipated to be detrimental to the survey.

4.0 Results

4.1 Data Search

The results of the desk search undertaken on Arun District Council's online map on 03/03/2021 indicates that one pedunculate oak tree inside the Site (T4) is covered by Arun District Council Tree Preservation Order (TPO) Land East of Yapton Lane, Walberton (Feb 2021), with the other tree within the TPO located over 20 m from the southern boundary. Walberton Village and Walberton Village Green Conservation Area (CA) incorporates a small section of hedgerow at the south-western extent of the Site which continues south of the boundary.

4.2 Survey Details

The tree inspection took the form of a walkover inspection completed by Peter Morrell TechArbA on 5th March 2021. Each individual tree of significance that could be impacted upon by any proposed development was identified and visually inspected and classified. The trees identified during the survey at the Site have been individually noted and identified within this Report and are shown in the Tree Survey Plan within Figure 2, and within the Photograph Section of this Report (Appendix B).

4.3 Mature, Semi-Mature and Young Trees

A total of six individual Trees (T) and four Tree Groups (TG) have been identified and assessed as part of the tree survey. All trees and hedgerows surveyed lay within the Site or around the boundaries. Two off-Site groups of trees support canopies that extend over the Site boundary.

4.3.1 Species and their Arrangement in the Landscape

There is a range of tree species on and immediately adjacent to the Site, and ash *Fraxinus excelsior* being the dominant species. The following species are present in low numbers or individually: Pedunculate oak *Quercus robur,* field maple *Acer campestre,* cherry *Prunus* sp.*,* hazel *Corylus avellana,* common alder *Alnus glutinosa,* hornbeam *Carpinus betulus,* holly *Ilex aquifolium,* Sycamore *Acer pseudoplatanus and* lime *Tilia* sp..

All trees are located within boundary hedgerows at the edges of the Site or within plantation woodland groups that lay adjacent to the Site.

4.3.2 Height and Significance in the Landscape

Standing at 18 m, the oak standing on the western boundary (T4) is highly visible due to its location adjacent to Yapton Lane, and as such is placed within Category B2.

The remaining trees located within a hedgerow and standing at heights of up to 14 m, form a linear feature along the western boundary of the Site. They are highly visible when viewed from Yapton Lane and provide a degree of screening to the Site, while contributing to the street scene and semi-rural landscape. However, residential housing to the west restricts their view in that direction.

If retained, all of these trees will require protection measures to ensure no impact occurs as a result of any development.

4.3.3 Age and Condition

The majority of trees present within the Site are semi-mature. One mature tree was also present, T4 which is an oak on the western boundary. Young trees form mixed broadleaved plantation groups beyond the northern and eastern boundaries.

All on-Site trees appear to be in fair condition. However, a rot hole was also present on the main stem of T4. The trees standing on the western boundary appear to have been crown lifted Site-side though no evidence of stubs was noted due to ivy cover on the majority of stems.

4.3.4 Environmental Condition

Given the Site's agricultural use and the semi-mature age of the majority of trees, it is surmised that major damage to the root systems has likely been sustained through recent agricultural on-Site working practices through compaction and ploughing.

The trees present display minimal signs of an adverse effect from wind having been protected from prevailing winds by the adjacent residential buildings to the west.

Groundwater conditions are not assessed to be a significant factor in present or future growth or health of trees since the gently undulating Site appears to be well drained and this situation will probably improve further following completion of any development.

4.4 Tree Schedule

Table 1 – BS 5837:2012 Tree Schedule

	Tree Species		Measurements				Crown (m)					Tree Condition								Management
Tree Number	Common Name	Latin Name	Maturity	Height (m)	Stems	Stem Diameter (mm)	Average Height	N	E	S	W	Roots	Stem	Crown	Comments	Structural	Life Expectancy (yrs)	Category	RPA (m)	Works
TG1	Field maple Ash Common alder Hornbeam Holly Pedunculate oak Cherry	*Acer campestre* *Fraxinus excelsior* *Alnus glutinosa* *Carpinus betulus* *Ilex aquifolium* *Quercus robur* *Prunus* sp.	Y	Av 10	1	175	1	4	4	4	4	No obvious damage	Single stems, vertical.	Rounded canopies that read as one.	Linear group on edge of golf course	F	>40	B2	2.1	
T2	Ash	*Fraxinus excelsior*	SM	11	4	350 300 200 200	4	6	8	3	8	No obvious damage	Multiple stems from base, vertical. Ivy clad.	Spreading open canopy. Scattered deadwood.		F	>40	C2	6.6	Sever and remove ivy
T3	Ash	*Fraxinus excelsior*	SM	14	6	6 x 200	4	6	8	6	8	No obvious damage	Multiple stems from base, vertical. Ivy clad.	Spreading open canopy. Scattered deadwood.		F	>40	C2	6.0	Sever and remove ivy
T4	Pedunculate oak	*Quercus robur*	M	18	1	Est 1250	4	8	8	8	8	No obvious damage	Single stem, vertical. Ivy clad. Rot hole present.	Spreading open canopy. Scattered deadwood.	TPO Tree	F	>40	B2	15.0	Sever and remove ivy
T5	Ash	*Fraxinus excelsior*	SM	14	5	3 x 300 2 x 200	4	8	6	6	6	No obvious damage	Multiple stems from base, vertical. Ivy clad.	Spreading open canopy. Scattered deadwood.		F	>40	C2	7.2	Sever and remove ivy
T6	Ash	*Fraxinus excelsior*	SM	13	4	2 x 200	4	6	6	6	3	No obvious damage	Multiple stems from base, vertical. Ivy clad.	Spreading open canopy. Scattered deadwood.		F	>40	C2	5.4	Sever and remove ivy
TG7	Ash	*Fraxinus excelsior*	SM	13	4	4 x 250	4	6	6	6	6	No obvious damage	Multiple stems from base, vertical. Ivy clad.	Spreading open canopy. Scattered deadwood.		F	>40	C2	6.0	Sever and remove ivy
TG8	Ash	*Fraxinus excelsior*	SM	12	4	4 x 200	2	6	6	6	4	No obvious damage	Multiple stems from base, vertical.	Spreading open canopy. Scattered deadwood		F	>40	C2	4.8	
T9	Sycamore	*Acer pseudoplatanus*	SM	12	4	400 150 150 150	1	6	6	6	8	No obvious damage	Multiple stems from base, vertical. Ivy clad.	Rounded canopy, scattered deadwood.		F	>40	C2	5.7	
TG10	Lime Ash Cherry	*Tilia sp.* *Fraxinus excelsior* *Prunus* sp.	Y	Av 10	1	Av 200	2	4	4	4	4	No obvious damage	Single stems, vertical.	Rounded canopies that read as one.	Linear group on edge of golf course	F	>40	B2	2.4	

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Table 2 – Key to Tree Schedule

Measurements	Age – Class	Overall Condition	BS 5837 2005 : Cascade Chart for Quality Assessment/Retention Category	Symbols:
MS – Multi-stemmed	Y - Young	G – Good	A – High	< = less than
Ht - Height in metres	SM – Semi-Mature	F – Fair	B – Moderate	~ = approximately
Stem – Stem Diameter at 1.5m in mm	EM – Early-mature	P – Poor	C – Low	> = greater than
Crown – Crown spread in metres	M – Mature	D – Dead	R – Trees for Removal	
TD - Trunk division (height in metres)	V - Veteran Est Yrs – estimate of years remaining (>40 years; 20 –40 years; <20 years)		Sub-categories: 1 = mainly arboricultural values 2 = mainly landscape values 3 = mainly cultural values.	
RPA = Root Protection Area (equivalent to a circle with a radius 12 x the stem diameter for single stem trees and 10 x the basal diameter for trees with more than one stem arising below 1.5m above ground level).				

4.5 Hedgerows

A total of two hedgerows have been identified and assessed as part of the hedgerow survey. They were both assessed against the Hedgerow Regulations (1997) and they did not support the number of woody species or associated features required to meet the criteria for an Important Hedgerow.

4.5.1 Hedgerow H1

Hedgerow H1 (Photograph 11), defining the northern and eastern boundaries of the Site, comprised an intact species-poor hedgerow. The height of the hedgerow was 2 m with a maximum width of 2 m. Species present were blackthorn *Prunus spinosa,* hawthorn *Crataegus monogyna*, field maple and occasion dog rose *Rosa canina*. The hedgerow was young and managed Site side with spiral guards present. Dormouse nest boxes were also present within the body of the hedgerow.

4.5.2 Hedgerow H2

Hedgerow H2 (Photograph 12), defined the western boundary of the Site, and comprised an intact species-poor hedgerow. The height of the hedgerow was 2 m with a maximum width of 1 m. Species present were blackthorn, hawthorn and hazel *Corylus avellana*. The hedgerow was managed. Ash, sycamore and pedunculate oak were present as occasional semi-mature and mature single trees and groups within the hedgerow. The hedgerow had been managed and dormouse nest boxes were present.

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5.0 Tree Management

5.1 Arboricultural Assessment

Around the boundaries of the field are a number of tree groups individual trees and hedgerows that could be impacted by any proposed development. Given their positions, it should be possible to retain and incorporate the majority of trees and tree groups currently present within the Site, and hedgerows bounding the Site, into the landscaping scheme of any proposals.

Limited previous management has been undertaken to the trees present on-Site including crown lifting a number of trees, particularly those immediately adjacent to field boundaries to allow access for agricultural machinery. Tree 4 supported rot and had a hollow mainstem and should be monitored annually or have a detailed internal inspection undertaken to establish any stability issues. To ensure that the root areas and canopy extremities of the individual trees and the tree groups that may be retained are not damaged, a Constraints Plan has been prepared to show the locations where protective fencing should be erected for any trees selected for retention (see Figures 3). Any tree surgery required is best carried out towards the conclusion of the development so that, if necessary, any known root damage can be corrected by the appropriate crown thinning to restore root /shoot balance.

Two hedgerows were assessed against the Hedgerow Regulations and they did not support the number of woody species or associated features required to meet the criteria for an Important Hedgerow.

It is considered that the Site would benefit from native deciduous tree and hedgerow planting along the southern boundary to provide effective screening to the wider semi-rural area, and complement retained trees and the surrounding landscape.

5.2 Recommendations

Recommendation 1 (Adequate Tree Protection)

Those trees identified within any development plan for retention will need to be adequately protected during any approved development works. As a general rule at this Site, measures to protect trees should follow the best practice principles set out in BS5837: Trees in Relation to Design, Development and Construction (2012). Prior to any construction or development work proceeding, the RPAs of individual trees to be retained should be marked out using the distances provided in the Table 1. Marking out should be completed by a person with arboricultural or horticultural expertise as individual trees will have root zones that may be affected by local conditions and allowances would need to be made to accommodate this.

The best practice principles have been broadly summarised below:

- All trees retained adjacent to the Site should be protected by barriers or ground protection around the calculated RPA and as indicated on any Tree Constraints Plan (TCP) that may be produced in association with the assessment;
- Any fencing required should be erected prior to commencement of construction and before demolition including erection of any temporary structures. Once set up fences should not be removed or altered without prior consultation with the arboricultural advisor;
- Arrangements should be made for an arboriculturist to supervise works and tree protection where trees are particularly vulnerable or sited close to access points;
- Pre-development works may be undertaken prior to the installation of fencing with the agreement of the local planning authority;

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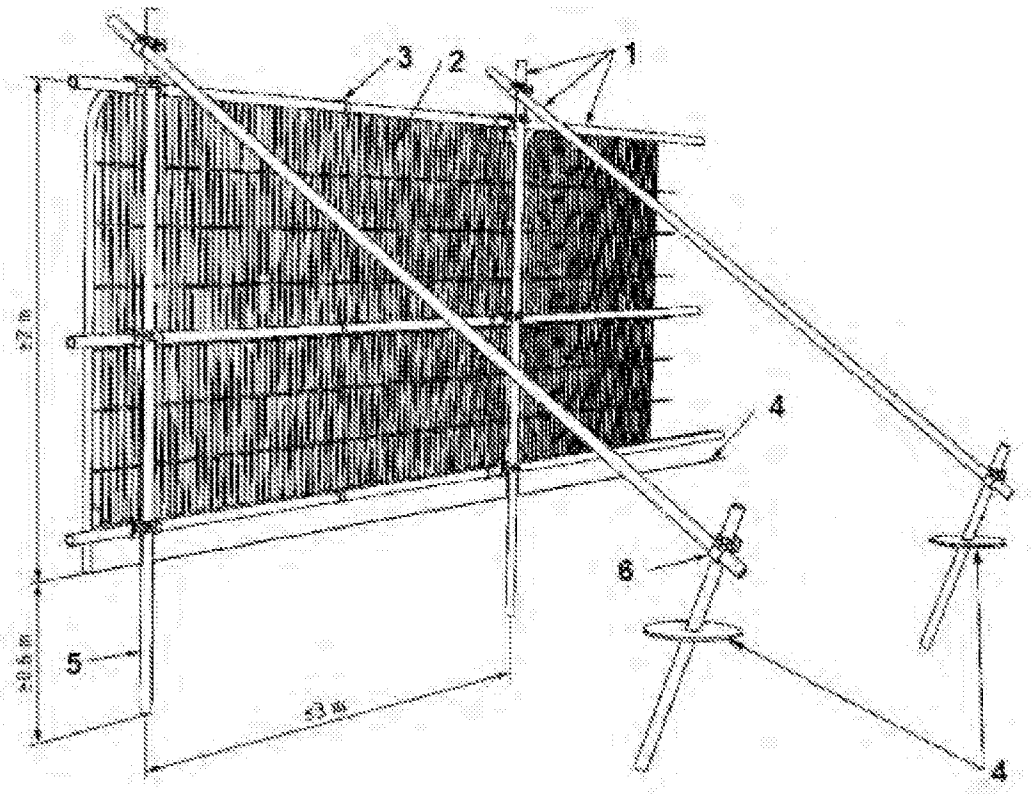

1. Standard scaffold poles
2. Heavy Guage 2m tall galvanised tube and weld mesh infill panels
3. Panels secured to uprights and cross members with wire ties
4. Ground Level
5. Uprights driven into ground until secure (up to 0.6m)
6. Standard scaffold clamps

- All tree works should follow best practice procedures as set out in BS 3998 (2010). All trees should be maintained in good condition on-Site and be inspected annually (where overall condition requires) or every two years and after any major storm events, with safety a priority;
- Fencing should be clearly visible and suitable for the location, type and proximity of construction activity;
- It may be appropriate on some sites to use temporary site offices as components of the protection barriers;
- Where it has been agreed and shown on a Tree Protection Plan, construction access may take place within the RPA if suitable ground protection measures are in place (e.g. existing surfaced car park areas). In other areas this may comprise single scaffold boards over a compressible layer laid onto geo-textile materials for pedestrian movements. Vehicular movements over the RPA will require the calculation of expected loading and may require the use of proprietary protection systems;
- Once areas around trees have been protected by fencing, any works on the remaining Site area may be commenced providing activities do not impinge on protected areas. Notices should be placed on fencing to indicate that operations are not permitted within the fenced area;
- Wide or tall loads etc should not come into contact with retained trees. Banksman should supervise transit of vehicles, jibs, booms etc where this is in close proximity to retained trees;
- Oil, bitumen, cement or other material that is potentially injurious to trees should not be stacked or discharged within 10 m of a tree bole. No concrete mixing should be done within 10 m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree;

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- No fires should be lit where flames are anticipated to extend to within 5 m of tree foliage, branches or trunk, taking into consideration wind direction and size of fire;
- Notice boards, telephone cables or other services should not be attached to any part of a retained tree;
- Where it is deemed necessary to operate a wide or tall load, plant bearing booms, jibs and counterweights or other such equipment, as part of construction works, and such equipment would have potential to cause injurious contact with crown material i.e. low branches and limbs, of retained trees within the RPA fencing, it is best advised that appropriate, but limited, tree surgery be carried out beforehand to remove any obvious problem branches. This is classed as 'Facilitation Pruning' within BS 5837 (2012). Any such pruning should be undertaken in accordance with a specification prepared by an arboriculturist;
- It is advised that a Pre-Commencement Site Meeting is held with contractors who are responsible for operating machinery, as described above, to firstly highlight the potential for damage occurring to tree crowns and to ensure that extra care is applied when manoeuvring machinery during such operations within close proximity to retained trees to avoid any contact;
- In the event of having caused any such branch or limb damage to retained trees it is strongly recommended that suitable tree surgery be carried out, in accordance with BS 3998 (2010) Recommendations for Tree Work, to correct the damage, upon completion of development; and
- All of the above precautionary measures should be applied to minimise the effect of any damage to long-term tree health and safety.

6.0 Limitations of the Tree Survey

The recommendations contained in this Report represent Delta-Simons' professional opinions, based upon the information referred to in Section 1.0 of this Report, exercising the duty of care required of an experienced Environmental Consultant.

This Report was prepared by Delta-Simons for the sole and exclusive use of the Client and for the specific purpose for which Delta-Simons was instructed as defined in Section 1.1 of this Report. Nothing contained in this Report shall be construed to give any rights or benefits to anyone other than the Client and Delta-Simons, and all duties and responsibilities undertaken are for the sole and exclusive benefit of the Client and not for the benefit of any other party. In particular, Delta-Simons does not intend, without its written consent, for this Report to be disseminated to anyone other than the Client or to be used or relied upon by anyone other than the Client. Use of the Report by any other person is unauthorised and such use is at the sole risk of the user. Anyone using or relying upon this Report, other than the Client, agrees by virtue of its use to indemnify and hold harmless Delta-Simons from and against all claims, losses and damages (of whatsoever nature and howsoever or whensoever arising), arising out of or resulting from the performance of the work by the Consultant.

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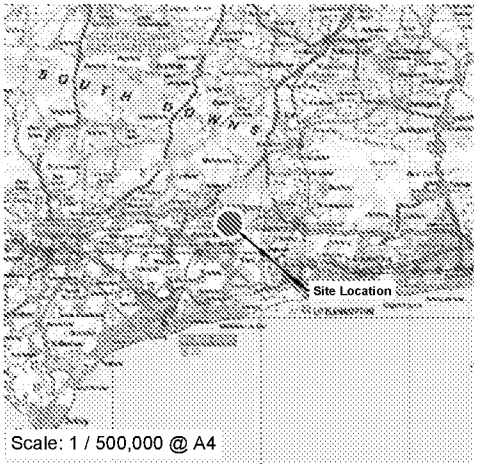
Figure 1 – Site Location Map



Scale: 1 / 500,000 @ A4

LEGEND

Site Boundary

Binsted

Avisford

Walberton

Foxes Cottages

The Old Rectory

Walberton Farm

Oakley Cottages

Lower Farm

Scale: 1 / 10,000 @ A4

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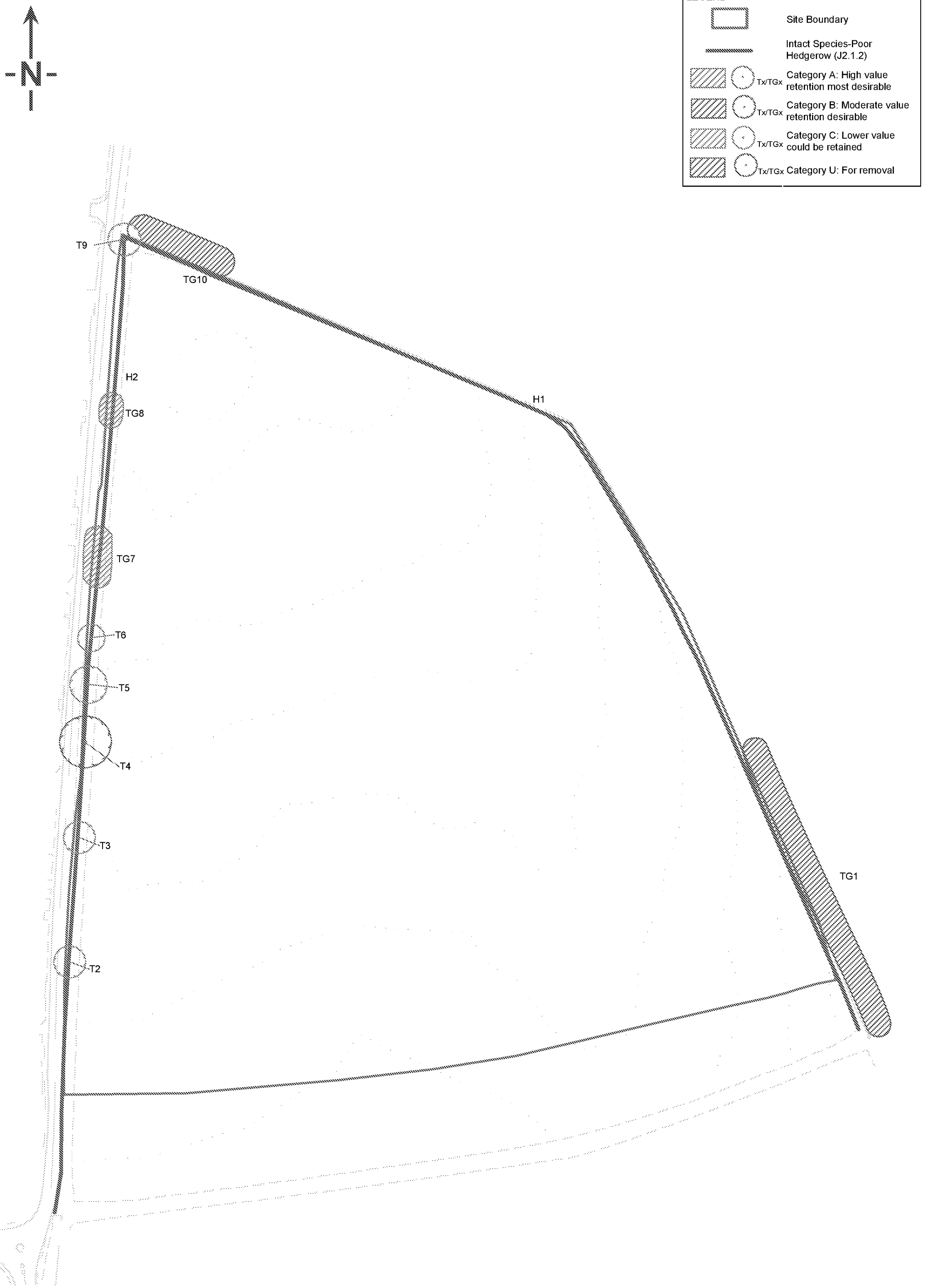
deltasimons

TITLE:
Site Location Map
Land East of Yapton Lane
Walberton, West Sussex

DRAWN BY:	SCALE:	PROJECT NO:
YA	To Scale@A4	20-1611.01
CHECKED BY:	REVISION:	FIGURE NO:
Cb	1	1
DATE: 28 July 2021		

Figure 2 – Tree Survey



Site Plan Provided by Client

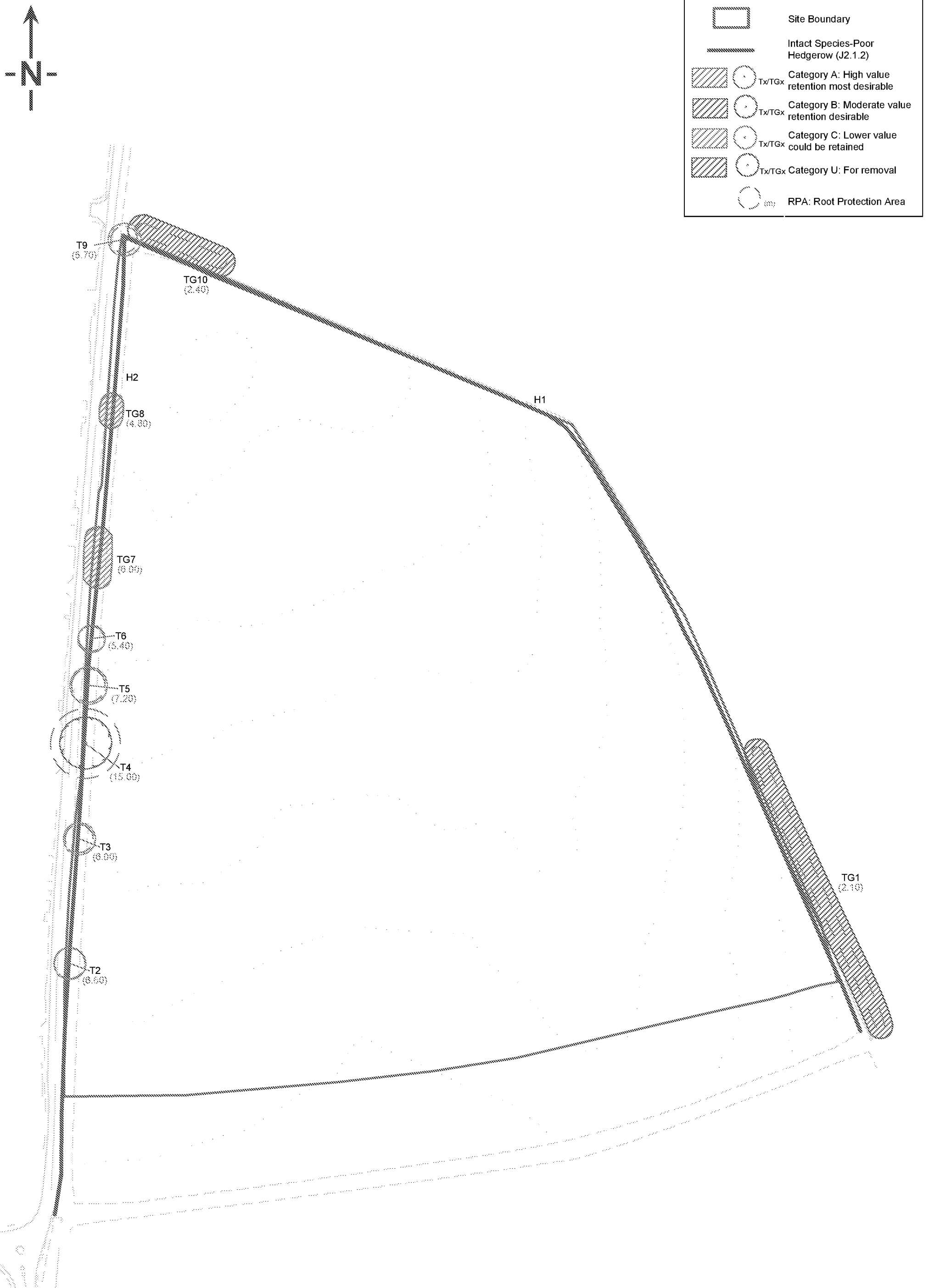
deltasimons
Environment - Health & Safety - Sustainability

ARUN DISTRICT COUNCIL WORKING COPY

TITLE:
Tree Survey
Land East of Yapton Lane
Walberton, West Sussex

DRAWN BY:	SCALE:	PROJECT NO:
YA	Not to Scale	20-1611.01
CHECKED BY:	REVISION:	FIGURE NO:
CB	1	2
DATE:		
28 July 2021		

Figure 3 – Tree Constraints Plan



Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

ARUN DISTRICT COUNCIL WA/60/21/OUT

TITLE:
Tree Constraints Plan
Land East of Yapton Lane
Walberton, West Sussex

DRAWN BY: YA	SCALE: Not to Scale
CHECKED BY: CB	REVISION: 1
DATE: 28 July 2021	

PROJECT NO: 20-1611.01

FIGURE NO: 3

Appendix A – References

References

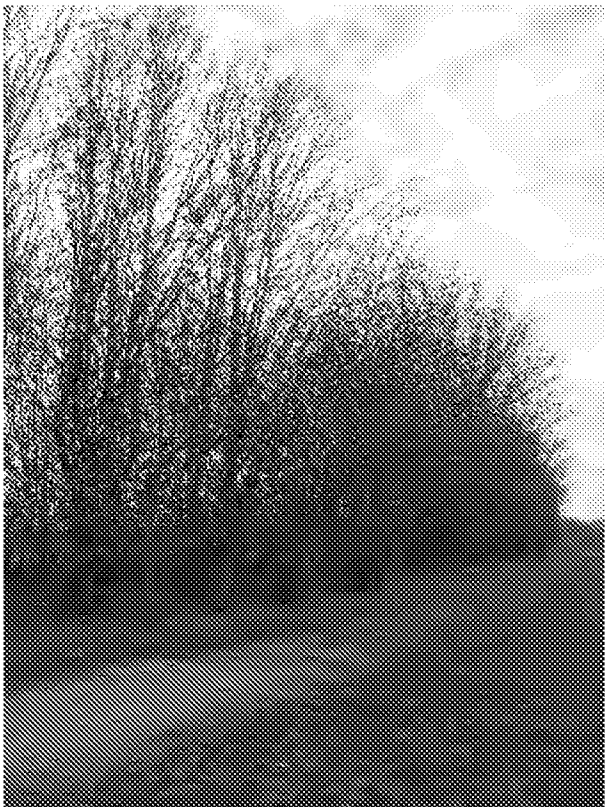
BSI Publication BS 5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations.

BSI Publication BS 5837:2005 Trees in Relation to Construction - Recommendations.

Stace, C. (2010). *New Flora of the British Isles 3rd edition*. University Press, Cambridge.

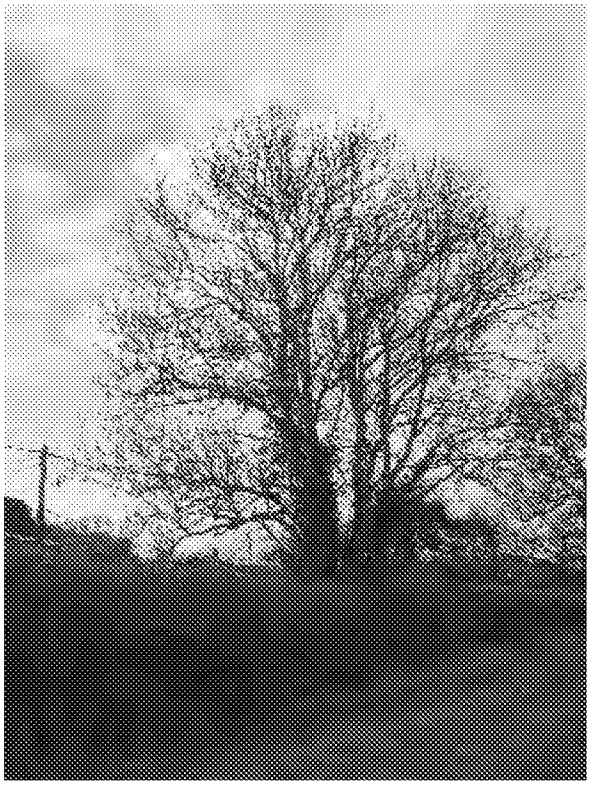
Appendix B – Site Photographs

Site Photographs

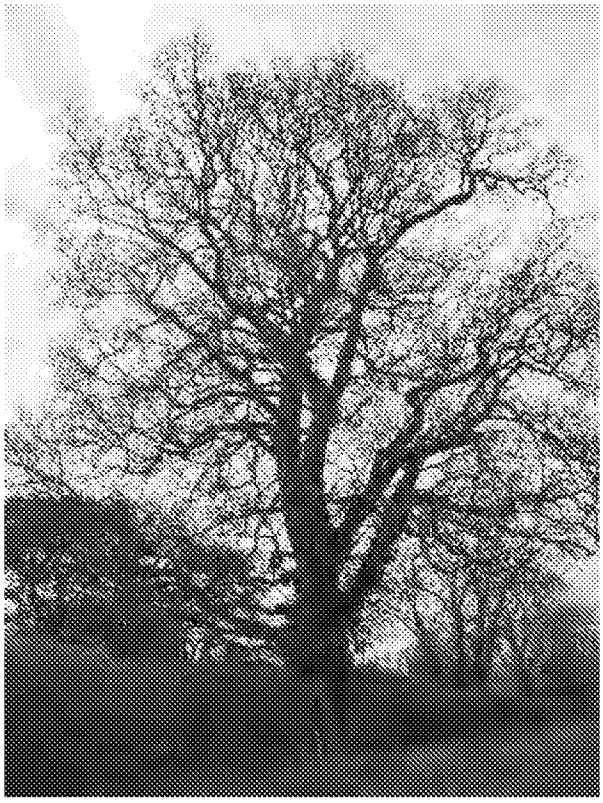


Photograph 1 – Tree Group (TG) 1

Photograph 2 – Tree (T) 2



Photograph 3 – T3



Photograph 4 – T4

Photograph 5 – T5

Photograph 6 – T6

Photograph 7 – TG7

Photograph 8 – TG8

Photograph 9 – T9

Photograph 10 – TG10

Photograph 11 – Hedgerow (H) 1

Photograph 12 – H2