

Silva Arboriculture Ltd

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LAND OFF HERON HILL LANE, CULVERSTONE, MEOPHAM

BS 5837: 2012 Arboricultural Impact Assessment

July 2025



Report no. 25061

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Executive Summary

Silva Arboriculture Ltd has been commissioned by Mr R Webb to provide Arboricultural services to support a planning application at Land off Heron Hill Lane, Culverstone, Meopham, DA13 0DT referred to as 'the Site'.

The Site is located approximately 10km south of Gravesend Town Centre within the Local Authority of Gravesham Borough Council.

A total of six arboricultural items have been recorded within the Study Area.

- Two individual trees and one group of trees were recorded within the Study Area as Category C
- Three individual trees were recorded within the Study Area as Category U.

Gravesham Borough Council was consulted in June 2025, via email, to ascertain if any of the recorded trees are protected by Tree Preservation Orders (TPO), conformation is still outstanding.

Ancient Woodland is located to the west of the Site boundary however due to the design being low impact along with the topography, soil type and existing historic roadway it is considered the Ancient Woodland will not be impacted by the proposal.

None of the recorded trees will need to be removed and no facilitation pruning will be required to facilitate the design proposal.

One Category C tree located within the Site and one Category C tree located adjacent to the Site on third-party land can both be protected with standard specification tree protection

One Category C group of trees located outside of the Site boundary can be protected by the existing topography.

The Site holds good potential for enhancement tree planting.

1 Introduction

1.1 Overview

Silva Arboriculture Ltd has been commissioned by Mr R Webb to provide Arboricultural services to support a planning application for the demolition of the existing dwelling and the construction of a new dwelling and associated infrastructure at Land off Heron Hill Lane, Culverstone, Meopham, DA13 0DT, referred to as 'the Site'.

This report presents the results of an Arboricultural Survey conducted in line with *BS 5837: 2012 - Trees in relation to design, demolition and construction – Recommendations*¹ and is designed to identify arboricultural constraints that could impact development of the Site.

1.2 Site Location and Setting

The Site is located within the Local Authority of Gravesham Borough Council and is located approximately 10km south of Gravesend town centre. The Site is approximately 0.64 acres and comprises of four terraces on a west facing elevation. The Site is a mixture of semi permeable hard surface and pockets open areas of young woody species. A small number of established trees are within the Site boundary. The local setting is rural residential. The Site is presented in Figure 1 Tree Constraints Plan.

1.3 Proposed Scheme

The development proposed is Material change of use of land to Gypsy Traveller site with 3 pitches each with space for stationing of a static caravan, utility block with associated hard standing for parking, with shared septic tank and space for associated storage of touring caravans (part retrospective).

¹ British Standards Institution (2012) BS 5837: 2012 *Trees in relation to design, demolition and construction – Recommendations*

Methodology

1.4 Tree Survey Methodology

An arboricultural survey was undertaken by Darren Hood FdSc MArborA (Arboricultural Consultant) on 23rd June 2025 in accordance with *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations*.

Observations were conducted from ground level, utilising the “Visual Tree Assessment” (VTA) system as outlined in *The Body Language of Trees, A Handbook for Failure Analysis Research for Amenity Trees No.4*², with the aid of binoculars. For reference, individual trees have been identified with the letter ‘T’ and an associated number and groups of trees have been identified with the letter ‘G’ and an associated number on the tree schedules and plans. The stem diameter of the Site trees was recorded using a rounded down diameter tape and scaled tree calipers at 1.5m above ground level. Measurements were taken in centimetres. The height of the subject tree was estimated to the nearest metre using a digital laser range finder.

Maximum crown spread of the subject tree was measured from the centre of the trunk to the tips of the live lateral branches taken at four compass points (N-E-S-W) using a digital laser range finder where access allowed. Crown spread measurements were taken in metres.

Tree age was estimated from visual indicators (such as tree size and appearance of bark) and should only be taken as a provisional guide. Age estimates often need to be modified based on further information such as historical records and local knowledge.

In compliance with Table 1 of *BS 5837:2012* the trees surveyed in this report have been categorised according to their arboricultural quality and value. A glossary of survey terms can be found in Appendix A - Explanation of Terms.

1.5 Arboricultural Impact Assessment Methodology

The Arboricultural Impact Assessment (AIA) was undertaken by Darren Hood, FdSc, MArborA (Arboriculturist) in July 2025, as a desk-based study based using the design details and field data collected. Table 1 provides the data sources used.

Table 1: Data sources used

Document / Plan Title and Author	Date	Information Type
Topographical Plan – Sitech Surveying Services – Drawing Number 12513	May 2022	Topographical information - DWG
Proposed Site Layout Plan– Heine Planning	2021	Design footprint information – PDF

1.6 Root Protection Area

The Root Protection Area (RPA) is a recommendation in *BS 5837:2012* and is based upon a minimum area (in m²) calculated from the measurement of the tree stem diameter. The resulting area is usually recorded as a generalised circle surrounding the tree on the Tree Constraints and Protection and Impact Plan. In this study, the RPA has been amended to take in consideration of existing roads and built structures in line with section 4.63 *BS 5837:2012*. The RPA is represented in purple in Figure 1. The RPA presents an exclusion zone for construction activity to protect the health of the tree.

² Mattheck, C. and Broeler, H. DETR (1994) *The Body Language of Trees: A Handbook for Failure Analysis Research for Amenity Trees No.4*

1.7 Survey Limitations

Topographical base mapping was available with full locations of the Site trees; tree positions are therefore considered exact. For the purposes of *BS 5837:2012*, only trees with a stem diameter greater than 75mm, (measured at 1.5m above ground level), have been included within the survey; however, it should be noted that a number of individual trees/shrubs with a stem diameter of less than 75mm were present within the Site. Only trees within the likely zone of influence of the proposed scheme have been included within this report.

Any protective fencing distances are based on a given trees stem diameter taken at 1.5 metres above ground level with each RPA (see Appendix B - Tree Schedules) being calculated from the above ground portions of the tree. It should be recognised that the RPA may not entirely encompass all of the tree rooting material.

Trees are living organisms and as such their health and condition are naturally subject to change over time. Unforeseen future circumstances such as neglect, wilful damage or severe/extreme weather conditions may affect the future health and condition of the trees included in this report.

2 Survey Results

2.1 Tree Assessment and Categorisation

A total of six arboricultural items were recorded within the Study Area. These were recorded as 5 individual trees (T) and one group of trees (G). Full details of the survey data can be found in the Tree Schedule in Appendix B - Tree Schedule and Figure 1: Tree Constraints Plan.

Each arboricultural item was assigned to one of four categories, as listed below:

- Category A arboricultural items: No individual trees or groups were graded as category A (trees of high quality) as part of this survey.
- Category B arboricultural items: No individual trees or groups were graded as category B (trees of moderate quality) as part of this survey.
- Category C arboricultural items: Two individual trees and one group of trees have been identified as category C (trees of low quality) as part of this survey.
- Category U arboricultural items: Three individual trees were graded as category U (trees of poor quality unsuitable for retention) as part of this survey.

2.2 Tree Species Recorded

Three tree species were recorded during the survey and were represented throughout the survey area. A summary of the species surveyed can be found within the Tree Survey Schedule located in Appendix B - Tree Schedule and within Table 2 below.

Table 2 Tree Species Recorded

Common Name	Botanical Name	Presence within the Survey Area - High, Moderate or Low
Ash	<i>Fraxinus excelsior</i>	High
Field maple	<i>Acer campestre</i>	Moderate
Goat willow	<i>Salix caprea</i>	Low

2.3 Age Diversity

Table 3: Age Diversity

Age Class	Number of Arboricultural Items	Approximate Percentage
Young	0	0%
Semi-mature	4	66.68%
Early-mature	1	16.66%
Mature	1	16.66%
Over-mature	0	0%

Age Class	Number of Arboricultural Items	Approximate Percentage
Totals	6	100%

2.4 Statutory Tree Protection

Gravesham Borough Council was consulted on the 24th June 2025, via email, to ascertain if any of the recorded trees are protected by Tree Preservation Orders (TPO), confirmation is still outstanding.

Ancient Woodland Ridge Wood/High Reed (Ancient Replanted Woodland) Status PAWS is located to the west of the Site.

2.5 Soil Type

British Geological Society records show the site Bedrock Geology being of Lewes Nodular Chalk Formation - Chalk. Sedimentary bedrock formed between 93.9 and 86.3 million years ago during the Cretaceous period.

3 Arboricultural Impact Assessment

3.1 Arboricultural Impacts

Development can have an adverse impact on trees and other woody vegetation within a site. This can result in: (1) immediate vegetation removal to facilitate the footprint of a new development; (2) potential future tree loss through the early decline of trees due to soil compaction; and (3) root disturbance and damage within a tree's rooting area.

3.2 Tree Removal

None of the recorded trees will require removal to facilitate the design proposal.

3.3 Facilitation Pruning

None of the recorded trees will require facilitation pruning to facilitate the design proposal.

3.4 Incursions within Calculated RPA

Of the six arboricultural items proposal within the Study Area, one Category C individual tree located within the redline boundary has areas of its Calculated RPA within the development footprint. This area of RPA is currently occupied by semi permeable hard surface type and soft landscaping. One individual Category C tree located on neighbouring land has portions of its calculated RPA within the Site. This area of RPA is designated as soft landscaping, and it is considered that this tree will not be impacted. Details of all RPA incursions can be found are detailed on Figure 2. Details of the tree and calculated RPA can be found in Table 5 below.

Table 5 Incursions within Calculated RPA

Tree No.	Species	RPA (m ²)	Incursion	Grade
T1	Field maple (<i>Acer campestre</i>)	35.5	Existing semi permeable surface type already in situ.	C
T2	Ash (<i>Fraxinus excelsior</i>)	n/a	None. In line with section 5.2 BS 5837: 2012	U
T3	Ash (<i>Fraxinus excelsior</i>)	n/a	None. In line with section 5.2 BS 5837: 2012	U
T4	Ash (<i>Fraxinus excelsior</i>)	n/a	None. In line with section 5.2 BS 5837: 2012	U
T5	Goat willow (<i>Salix caprea</i>)	33	Soft landscaping.	C
G1	Mixed broadleaf species	18.1	None due to trees being located on elevated topography	C

Three trees have been recorded as Category U due to advanced crown dieback in association with Ash Dieback Disease (*Hymenoscyphus fraxineus*). These three trees do not warrant RPA protection due to their limited useful life expectancy and physiological condition.

3.5 Mitigation

No Dig Cellular Confinement System

It is recommended that a proprietary no dig cellular confinement system is installed as part of the scheme to protect and mitigate the existing RPA incursion of T1. All no dig cellular confinement systems should be installed as per the manufacturers specification and in line with Arboricultural Association Guidance Note 12 and ideally under an arboricultural watching brief.

Mulching

In line with section 5.3.1 of British Standard 5837: 2012 it is recommended that the open areas of ground within the RPA of T1 is mulched to a depth of 20cm with a layer of well-rotted organic mulch to improve the soil environment. This will improve existing ground conditions and to help mitigate potential impacts of the development. It is recommended that this takes place prior to enabling works.

3.6 Tree Protection

One tree (T1) can be protected with bespoke tree protection using 18mm shuttering ply to create to a 900mm x 900mm box section or a size appropriate to the stem diameter around the main stem to a height of 1.5m. This will mitigate any potential impact damage to the tree stems during any Site work.

The third party tree T5 can be protected with standard specification protective barriers and G1 protected by existing Site topography.

3.7 Future Potential Impacts

It is considered that due to the aspect of the Site the design proposal will not place any additional future pressures such as excessive shading on the proposed development.

In addition, the proposed end use hard surface type is semi permeable as such it is considered constraints on Site drainage will not be an issue.

It should be noted that tree produced debris, such as leaf fall, will have a limited influence on the proposed end-use of any site, however, as this is a natural phenomenon it should be treated as a regular maintenance issue.

4 CONCLUSIONS

A total of six arboricultural items were recorded within the Study Area. These include five individual trees and one group of trees. Four of the recorded trees are located within the redline application boundary with one individual tree and one group of trees being located outside the redline boundary on third party land.

No individual trees were recorded within the Study Area as Category A.

No individual trees were recorded within the Study Area as Category B.

Two individual trees and one group of trees were recorded within the Study Area as Category C.

Three individual trees were recorded within the Study Area as Category U.

Gravesham Borough Council was consulted in June 2025, via email, to ascertain if any of the recorded trees are protected by Tree Preservation Orders (TPO), conformation is still outstanding.

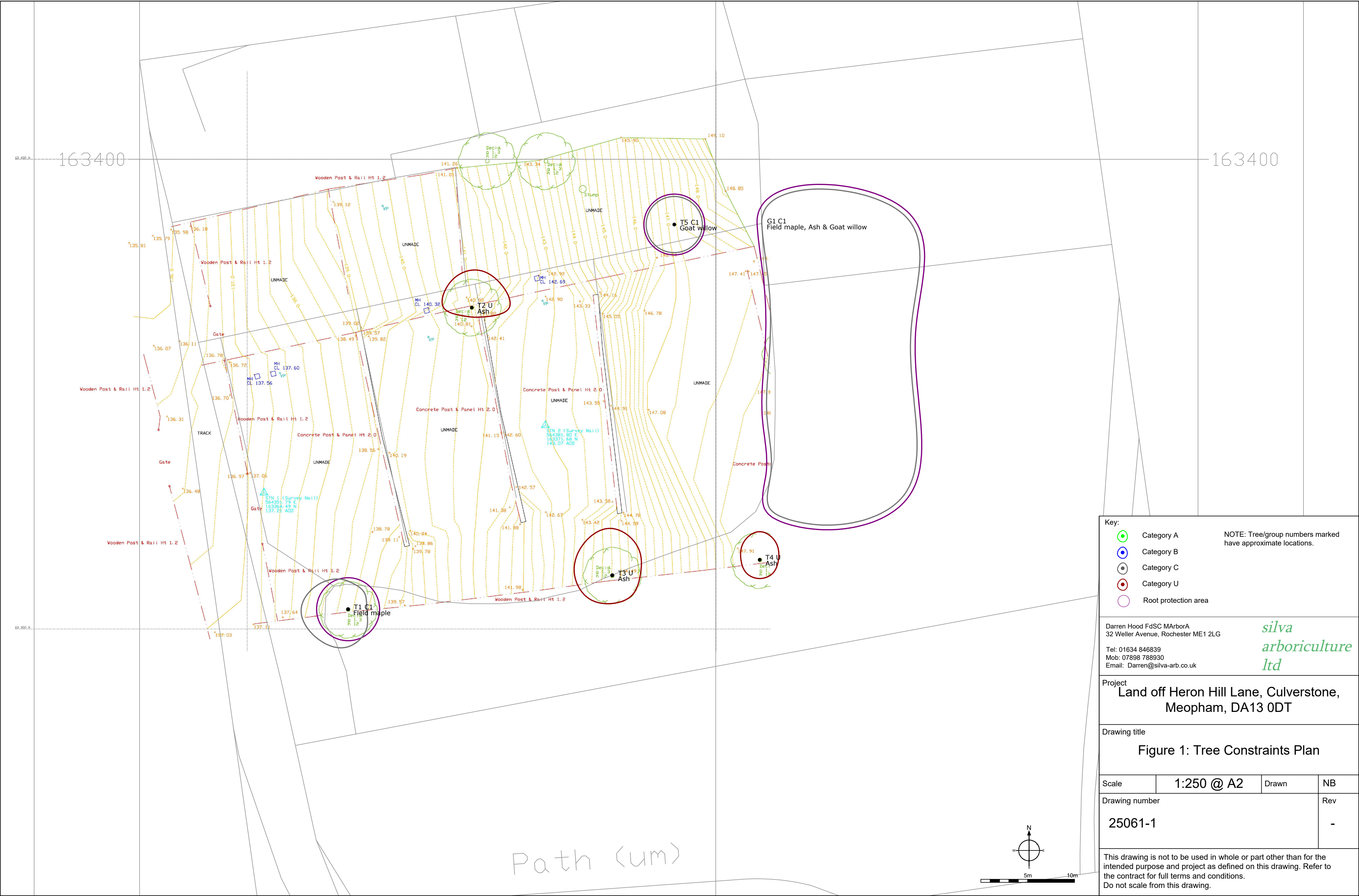
Ancient Woodland is located to the west of the Site boundary however due to the design being low impact along with the topography, soil type and existing historic roadway it is considered the Ancient Woodland will not be impacted by the proposal.

None of the recorded trees will need to be removed and no facilitation pruning will be required. It should be noted that Category U trees may need to be managed at a future date in the interests of health and safety.

The Category C tree (T1) can be protected with bespoke tree protection. The Category C tree (T5) can be protected with standard specification tree protection and the Category C group of trees (G1) can be protected by the existing topography.

The Site holds good potential for enhancement tree planting however due to the prevalence of Ash Dieback Disease (*Hymenoscyphus fraxineus*) in the local area the planting of ash species should be avoided.

FIGURE 1. Tree Constraints Plan.



Key:

Category A

Category B

Category C

Category U

Root protection area

NOTE: Tree/group numbers marked have approximate locations.

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Project

Land off Heron Hill Lane, Culverstone,
Meopham, DA13 0DT

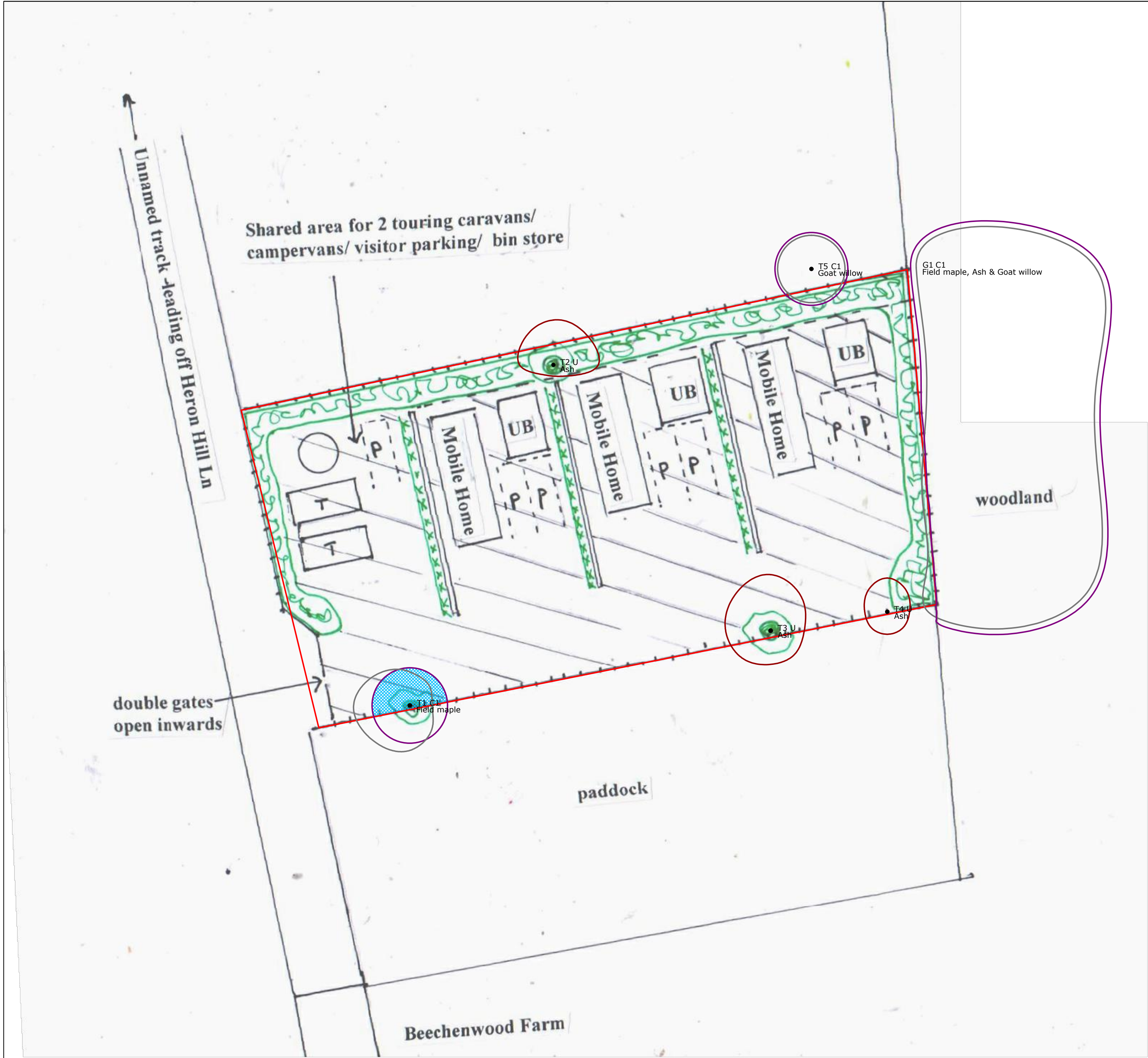
Drawing title

Figure 1: Tree Constraints Plan

Scale	1:250 @ A2	Drawn	NB
Drawing number			Rev
25061-1			-

This drawing is not to be used in whole or part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.
Do not scale from this drawing.

FIGURE 2. Arboricultural Impact.



Key			
	Post and rail fence		Retaining Fence
	Septic tank		Retained trees
	Proposed hedgerow		Proposed landscaping
	Utility Building		Hard Standing
	Parking Space		Touring Van

Key:		
	Category A	NOTE: Tree/group numbers marked have approximate locations.
	Category B	
	Category C	
	Category U	
	Root protection area	
		 Area already covered by semi-permeable surface type

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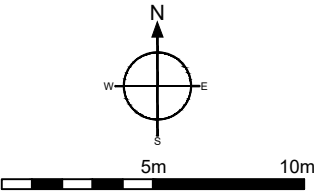
Project
Land off Heron Hill Lane, Culverstone,
Meopham, DA13 0DT

Drawing title
Figure 2: Arboricultural Impact and
Protection Plan

Scale	1:250 @ A2	Drawn	NB
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25061-2	-

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APPENDIX A. Explanation of Terms

Age Class

Young – Trees in the first fifth of full life expectancy

Semi-mature – Trees in the second fifth of full life expectancy

Early-mature – Trees in the third fifth of full life expectancy

Mature – Trees in the fourth fifth of full life expectancy

Over Mature – Trees having reached full life expectancy and trees in natural decline

Veteran – Trees of interest biologically, culturally and aesthetically because of their age

Stem Diameter

The diameter of the stem measured in millimetres (mm) at a height of 1.5m above ground level

Crown Spread

Average measured in metres using a ground tape where possible

Physiological Condition

Good – Healthy tree with no signs of ill health and signs of good extension growth for species

Fair – Trees with signs of disease, minor defects and decreased life expectancy due to physical damage

Poor – Trees with significant disease, significantly reduced life expectancy and/or under major physiological stress

Dead – Dead tree or trees with over 70% crown dieback

Structural Condition

Good – Trees with no significant defects

Fair – Trees with remedial defects which require minor tree surgery works

Poor – Trees with remedial defects which require significant tree surgery works or felling

Dead – Trees which require felling

BS 5837 Retention Category

Each tree, group of trees or hedge is assigned to a retention category where:

Table A1 Categorisation of trees

Category	Description
A	Trees of high quality and value, retention is highly desirable
B	Trees of moderate quality and value where retention is desirable
C	Trees of low quality and value, or young trees with a stem diameter <150mm. Category C trees may be retained, replaced or in the case of younger trees, relocated
U	Trees of poor quality unsuitable for retention or trees which should be removed

In addition, each tree, group of trees or hedge is assigned to a retention sub-category where categorisation is for:

Table A2 Reasons for Categorisation

Sub-category	Reason for Categorisation
1	Mainly arboricultural qualities
2	Mainly landscape qualities
3	Mainly cultural values, including conservation

APPENDIX B. Tree Schedules

Client: **Mr R Webb**

Project: **Land off Heron Hill Lane, Culverstone, Meopham, DA13 0DT**

Survey date: **23rd June 2025**

Surveyor: **Darren Hood FdSc MArborA**

Table B1 - Tree Schedule

Tree reference number	Species	Height (m)	Stem diameter (mm)	Crown spread (m)	Height of crown clearance (m)	Age class	Physiological condition	Structural condition	Comments	Estimated remaining contribution (years)	Category grading
T1	Field maple (<i>Acer campestre</i>)	15	280	N3 E2 S4 W5	6	EM	Good	Fair	None.	10+	C (1)
T2	Ash (<i>Fraxinus excelsior</i>)	16	250	N4 E4 S1 W3	9	SM	Poor	Poor	Advanced crown dieback and evidence of Ash Dieback Disease (<i>Hymenoscyphus fraxineus</i>). Tree located on boundary on elevated topography, evidence of surface lateral roots growing east/west along boundary.	<10	U
T3	Ash (<i>Fraxinus excelsior</i>)	18	280	N5 E3 S3 W4	9	SM	Poor	Poor	Advanced crown dieback and evidence of Ash Dieback Disease (<i>Hymenoscyphus fraxineus</i>).	<10	U
T4	Ash (<i>Fraxinus excelsior</i>)	18	270	N3 E2 S2 W2	9	SM	Poor	Poor	Advanced crown dieback and evidence of Ash Dieback Disease (<i>Hymenoscyphus fraxineus</i>).	<10	U
T5	Goat willow (<i>Salix caprea</i>)	8	270#	N3 E3 S3 W3	1	M	Fair	Poor	Off site. Topped at 2m. Not on topographical plan.	10+	C (1)

Table B2 Group Schedule

Tree reference number	Species	Height (m)	Stem Ø (mm)	Average Radial Crown Spread (m) N-E-S-W	Height of crown clearance (m)	Age class	Physiological condition	Structural condition	Estimated remaining contribution (years)	Category grading
G1	Field maple (<i>Acer campestre</i>) (x6), Ash (<i>Fraxinus excelsior</i>) (x12) and Goat willow (<i>Salix caprea</i>) (x4)	14	Avg 200	3	3	SM	Fair	Fair – Off site on raised topography. Evidence of Ash Dieback Disease (<i>Hymenoscyphus fraxineus</i>) within group. Trees not on topographical plan.	10+	C (1)

Table B3 **Root Protection Area**

Tree reference number	Species	Stem diameter (mm)	Radius of nominal circle (m)	RPA (m ²)
T1	Field maple (<i>Acer campestre</i>)	280	3.4	35.5
T2	Ash (<i>Fraxinus excelsior</i>)	250	n/a	n/a
T3	Ash (<i>Fraxinus excelsior</i>)	280	n/a	n/a
T4	Ash (<i>Fraxinus excelsior</i>)	270	n/a	n/a
T5	Goat willow (<i>Salix caprea</i>)	270	3.2	33
G1	Field maple (<i>Acer campestre</i>) (x6), Ash (<i>Fraxinus excelsior</i>) (x12) and Goat willow (<i>Salix caprea</i>) (x4)	Avg 200	2.4	18.1

Table B3 Key to Categories

Tree Reference Number	Category
T/GXX	Category A
T/GXX	Category B
T/GXX	Category C
T/GXX	Category U

Appendix C Selected Site Photographs



Photo 1 Ash T2 showing evidence of advanced crown dieback in association with Ash Dieback Disease.



Photo 2 Ash T3 showing evidence of advanced crown dieback in association with Ash Dieback Disease.



Photo 3 Ash T4 showing evidence of advanced crown dieback in association with Ash Dieback Disease



Photo 4 Mixed species group G1 showing evidence of advanced crown dieback in association with Ash Dieback Disease within the group.



Photo 5 Change in topography between Site boundary and G1 demonstrating no RPA impacts.



Photo 6 Existing hard standing access road and trees opposite Site on access road with pasture beyond. Area shown as Ancient Woodland on historic mapping.



Photo 7 Existing hard standing access road and trees opposite Site on access road with pasture beyond. Area shown as Ancient Woodland on historic mapping.