



High Meadow, Saltwood

Arboricultural Impact Assessment and Method Statement

A Report for Mr and Mrs Sercombe

January 2023



www.greenspace-ecology.co.uk

info@greenspace-ecology.co.uk

High Meadow, Sandling Road, Saltwood

Arboricultural Impact Assessment and Method Statement

January 2023

Controlled Copy

01 of 02

01 Mr and Mrs Sercombe

02 Greenspace Ecological Solutions Ltd

This report was written by Neil Taylor and proofed by Chris Bawler GradCIEEM

*The content of this report is the responsibility of Greenspace Ecological Solutions Ltd.
It should be noted that whilst every effort has been made to meet the client's requirements, no site survey can ensure complete assessment or prediction of the changeable onsite environment. Furthermore, should more than 24 months elapse between the date of this survey and any subsequent development, it may be necessary to consider the need for an update survey to be undertaken.*

Report Number J21078_Arb

Greenspace Ecological Solutions Ltd.
Suite H3, Blackham Court,
Withyham, East Sussex,
TN7 4DB

Tel: 01892 457062
www.greenspace-ecology.co.uk
info@greenspace-ecology.co.uk

CONTENTS

1	PROJECT OVERVIEW	1
2	INTRODUCTION	2
2.1	Context	2
2.2	Site Location	2
2.3	Site Description	3
3	SURVEY METHODS	4
4	ASSESSMENT	7
4.1	Tree Character Groups	7
5	ARBORICULTURAL IMPACT ASSESSMENT (AIA)	8
5.1	Methodology	8
5.2	Assessment	8
6	ARBORICULTURAL METHOD STATEMENT (AMS)	10
6.1	Methods	10
6.2	Demolition within the RPA of Retained Trees	10
6.3	Construction within the RPA of Retained Trees	10
6.4	Services	11
6.5	Tree Protection	11
6.6	Site Monitoring and Supervision	12
7	CONCLUSION	13

DRAWINGS

Tree Protection Plan J21078_Arb_TPP

APPENDICES

APPENDIX A	Tree Survey Schedule
APPENDIX B	Cell Web Product Brochure
APPENDIX C	Section 4, Extracted from NJUG 4
APPENDIX D	Programme of Site Monitoring

1 PROJECT OVERVIEW

Client: Mr and Mrs Sercombe

Site Address: High Meadow, Sandling Road, Saltwood, Hythe, Kent, CT21 4QJ

Attending Surveyors: Neil Taylor

Survey Date: 25th January 2022

Site Proposals: Demolition of the existing fire damaged residential building and outbuilding, followed by the construction of three new residential properties with associated access and landscaping.

Associated Planning Reference Number: Not yet submitted

Source of Relevant Documents:

Document:	Source:
Site Plans:	Hollaway

2 INTRODUCTION

2.1 Context

- 2.1.1 In response to a proposed development at High Meadow, Saltwood (hereafter referred to as “The Site”), Greenspace Ecological Solutions (GES) has been commissioned by Mr and Mrs Sercombe to undertake a tree survey in accordance with British Standard (BS) 5837:2012 “Trees in Relation to Design, Demolition and Construction – Recommendations”.
- 2.1.2 The proposals include the demolition of the existing fire damaged residential building and outbuilding, followed by the construction of three new residential properties with associated access and landscaping. Works that are likely to affect retained trees include the installation of hard surfaces and the movement of construction vehicles.
- 2.1.3 The aim of this report is to present the results of the survey, including a Tree Survey Schedule (TSS), an Arboricultural Impact Assessment (AIA) and an Arboricultural Method Statement (AMS). A Tree Protection Plan (TPP) has also been produced and accompanies this report.
- 2.1.4 This report in no way constitutes a health and safety survey report. Where concerns for tree health and safety exist, the necessary and appropriate tree inspections should be carried out.

2.2 Site Location

- 2.2.1 The Site is located on the outskirts of the town of Hythe, Kent at OS National Grid Reference: TR 15429 35706. The geographical location of the Site is depicted in Image 1, overleaf.

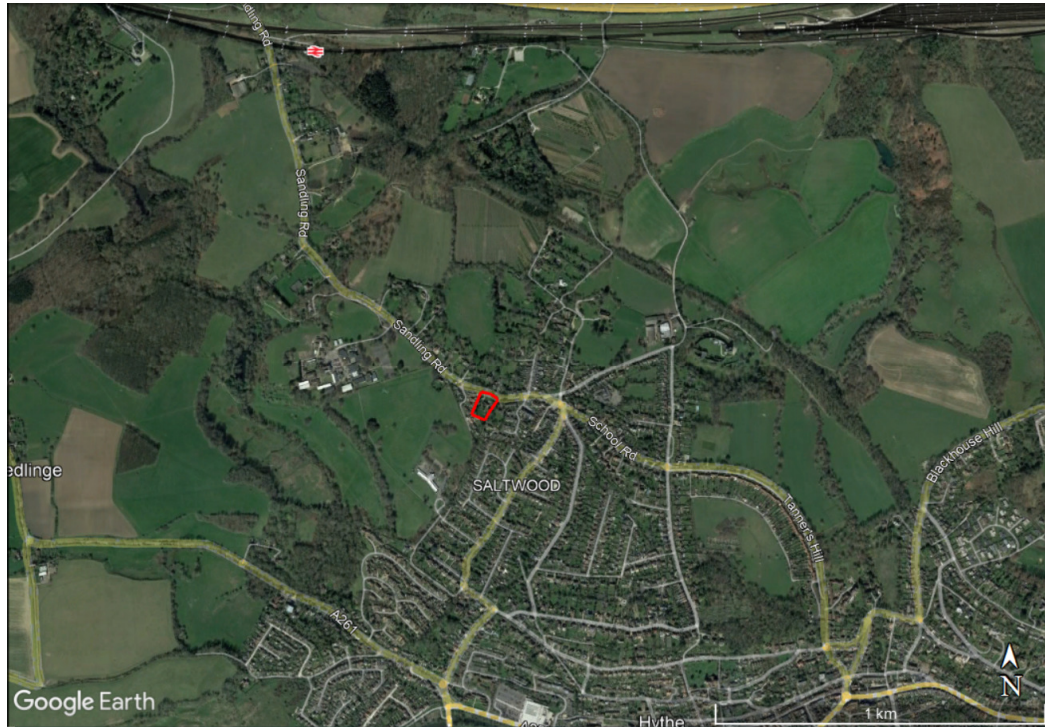


Image 1 – Geographical location of High Meadows

2.3 Site Description

- 2.3.1 The Site occupies approximately 0.4ha and consists of a single derelict residential building and an above-ground air raid shelter surrounded by amenity grassland, scattered trees and introduced shrubs.
- 2.3.2 The Site is bound by residential properties and associated gardens to the east, south and west. Sandling Road abuts the northern boundary and provides access to the Site. Saltwood and Hythe lie to the southeast of the Site, with agricultural fields, blocks of woodland and interconnected hedgerows further to the north, west and southwest. The M20 and railway line lie 1.1km to the north.
- 2.3.3 A number of trees within the Site boundary are protected by a Tree Preservation Order (TPO), reference number 08 of 2015.

3 SURVEY METHODOLOGY

3.1 The trees were inspected from ground-level by consultant arboriculturist Neil Taylor on 25th January 2022 and measurements taken in accordance with the recommendations set out in the BS 5837:2012. Canopy spreads were measured and plotted to the four compass points. Where direct access was not possible measurements have been estimated. The surveyed trees are colour coded on the accompanying tree survey drawing according to their relevant BS category.

3.2 The trees were categorised in accordance with the following criteria:

Trees for removal

U Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management. (Identified by red colouration on the TCP.)

These trees should not be a consideration in the planning process.

Trees to be considered for retention

A Those of high quality and value: in such a condition as to be able to make a significant contribution (a minimum of 40 years is suggested). (Identified by green colouration on the TCP.)

B Those of moderate quality and value: those in such a condition as to make a substantial contribution (a minimum of 20 years is suggested). (Identified by blue colouration on the TCP.)

C Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm. (Identified by grey colouration on the TCP.)

Category C trees will usually not be retained where they would impose a significant constraint on development. Category A and B trees will normally be retained.

3.3 The following subcategories are applied. Trees may be allocated more than one subcategory, but this will not increase their overall value.

1: Mainly arboricultural values

A1 Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue).

B1 Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage).

C1 Trees not qualifying in higher categories.

2: Mainly landscape values

A2 Trees, groups or woodlands 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).

B2 Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the Site, therefore individually having little visual impact on the wider locality.

C2 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.

3: Mainly cultural values, including conservation.

A3 Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).

B3 Trees with clearly identifiable conservation or other cultural benefits.

C3 Trees with very limited conservation or other cultural benefits.

3.4 The tree data collected is used to enable the current canopy spread of the surveyed trees and the Root Protection Area (RPA) to be plotted on the accompanying TPP. The RPA is defined by the formula in paragraph 4.6 of the BS 5837:2012 and may be refined by taking into account

current on-site constraints to root activity such as buildings, earthworks and hard paving. This forms part of the design process for the proposed development.

- 3.5 The design process should consider the below and above-ground constraints posed by the better-quality trees on and adjacent to the Site.

4 ASSESSMENT

4.1 Tree Character Groups

4.1.1 The detailed results of the tree survey are provided in the TSS, in Appendix A. In summary, the trees on the Site vary considerably in terms of condition and the amenity value that they provide to the wider landscape. The trees can be divided into three distinct character groups as follows:

1. The first character group includes the large, mature trees found growing predominately on the Site's boundaries. In the main, the trees in this character group are in a good condition and provide significant amenity to the local area.
2. The second character group includes the medium sized, middle aged trees found growing predominately on the Site's boundaries. In the main, the trees in this character group are in a good condition and provide an important screen to the Site.
3. The third character group includes the smaller, young trees found growing across the Site, mainly in groups of scrub. The trees in this character group are in a good condition but due to their size are of limited amenity value.

5 ARBORICULTURAL IMPACT ASSESSMENT (AIA)

5.1 Methodology

- 5.1.1 The AIA uses the information obtained in the tree survey to identify areas where the proposed construction may be at odds with accepted standards, in terms of a tree's requirements for space in which to maintain existing roots and shoots, and space for future growth.
- 5.1.2 The quality and relative importance of each tree is illustrated as a coloured polygon. The colour used relates to the BS categories as follows: A - green, B - blue, C - grey and U - red (see accompanying drawing, reference: J21078_Arb_TPP). In general the design process will try to retain A and B category trees. Proposed construction will therefore normally be excluded from the RPA of A and B category trees. Red trees are discounted as they are recommended for removal.
- 5.1.3 Details of the trees surveyed are given in the TSS (Appendix A). The juxtaposition of the proposed development in relation to existing tree locations is shown on the accompanying TPP drawing, reference: J21078_Arb_TPP.
- 5.1.4 The AIA considers existing Site conditions and the effect that they may have on the development of the surveyed trees' root systems. Hard structures such as buildings and paved roads and paths can influence the root activity of trees by reducing the availability of both moisture and nutrients.

5.2 Assessment

- 5.2.1 Refer to the accompanying TPP drawing (Reference: J21078_Arb_TPP) for the relationship between the proposed development and the trees on and adjacent to the Site.

- The following tree will be removed for arboricultural reasons:

T13

- The following trees will be removed to enable the proposed development:

T1	to enable the construction of a driveway
T2	to enable the construction of a driveway
T6	to enable the construction of a driveway
T7	to enable the construction of a driveway
T22	to enable the construction of a driveway
T28	to enable the construction of a dwelling

T29	to enable the construction of a dwelling
T31	to allow space for a garden
T32	to allow space for a garden
T33	to allow space for a garden
T34	to allow space for a garden
T35	to enable the construction of a dwelling
T37	to enable the construction of a driveway
T38	to enable the construction of a driveway
T39	to enable the construction of a driveway
Part of G2	to enable the widening of the existing access drive
G3	to allow space for a garden
Part of G4	to enable the construction of a dwelling
G5	to allow space for a garden
Part of G7	to enable the construction of a dwelling

- The following trees will be pruned prior to the demolition of the existing buildings:
 - T9 – crown lift to clear 5 metres
 - T18 – crown lift to clear 5 metres over access drive
- The following trees will be affected by the demolition of the existing garage within the RPA:
 - T8 and T9

The garage will be demolished in accordance with the methodology outlined in Section 6.2 below.
- The following tree will be affected by the construction of a dwarf wall on the edge of the RPA:
 - T25

The dwarf wall is on the edge of the RPA so the likelihood of encountering significant roots is minimal. As a precaution, excavations for the foundations will be carried out in accordance with the methodology outlined in Section 6.3 below.
- The following tree will be affected by the installation of hard surfaces within the RPA:
 - T3, T4 and T30

Where the proposed hard surface is within the RPA, it will be constructed in accordance with the 'no dig' principles outlined in APN12 and utilise a cellular confinement system such as Cell Web as a sub base. Refer to Section 6.3 below for details.

6 ARBORICULTURAL METHOD STATEMENT (AMS)

6.1 Methodology

- 6.1.1 The AMS provides the means by which retained trees and hedges can be protected throughout the development.
- 6.1.2 The movement of demolition and construction machinery in close proximity to trees may cause compaction of the soil which affects the tree's ability to absorb moisture and nutrients.
- 6.1.3 The RPA of retained trees will be protected by a tree protection barrier as described in Section 6.5 below and shown on the accompanying TPP drawing (Reference: J21078_Arb_TPP).

6.2 Demolition within the RPA of Retained Trees

- 6.2.1 The demolition of the existing garage that is within the RPA of T8 and T9 will be demolished using a top down, pull back method where any machinery used is stood on the existing hard surface at all times and will pull the building away from the trees. The concrete slab is to be broken up and used as a sub-base for the new driveway. Where possible, the foundations are to be left in-situ and covered over.

6.3 Construction within the RPA of Retained Trees

- 6.3.1 Excavations for Foundations: Excavations for the foundations of a dwarf wall that are within the RPA of T25 will be carried out by hand under the supervision of a suitably qualified arboriculturist. Any roots encountered will be pruned back to the edge of the trench using sharp secateurs.
- 6.3.2 Construction of Hard Surfaces: Construction of all new hard surfaces within the RPA of T3, T4 and T30 will incorporate the principles set out in Arboricultural Advisory and Information Service guidance note APN12 and utilise a cellular confinement system, such as cell web, as a sub base. Guidance on the form of construction necessary to avoid root damage and loss is provided in the form of an extract of the Cell Web Product brochure for their cellular confinement system in Appendix B. The access drive will be installed prior to the construction of the new dwelling in order to act as ground protection.

The installation of the new hard surfaces should proceed in the following order:

- Remove major projections such as stumps and rocks. Stumps must be removed with a stump grinder so as to minimise ground disturbance.
- Fill major hollows with sharp sand.

- Lay geotextile membrane over the soil and pin into place.
- Lay cellular confinement system (such as Cell Web) as specified by engineer and pin into place.
- Fill the cellular confinement system with a 'no fines' aggregate to engineer's specification. Work must be carried out progressively so that any machinery used only moves on the laid surface.
- Install timber sleeper or timber edging as specified by landscape architect or engineer.
- Lay geotextile membrane over filled cellular confinement system.
- Lay wearing course as specified by landscape architect.

6.3.3 No materials or spoil is to be stored within the RPA of a retained tree unless on an existing hard surface.

6.3.4 In order to avoid damage to the retained trees the tree surgery and felling work identified in the accompanying tree survey schedule will be carried out prior to the occupation of the Site by the building contractor. The work will be carried out in accordance with BS 3998:2010.

6.4 Services

6.4.1 The proposed locations of service runs are not known at this stage but will likely avoid the RPA of retained trees. However, where this is unavoidable, the section of service run which passes within the RPA of a retained tree will be hand dug in accordance with 'broken trenches' described in NJUG 4 Section 4, an extract of which can be found in Appendix C. This will ensure that tree roots are not damaged during the installation of the service. All root pruning will be agreed beforehand with the named Arboriculturist in consultation with the local authority Arboricultural Officer. All root pruning will be in accordance with current best working practice. All routes for overhead services will aim to avoid the trees. Where this is unavoidable any tree work will be agreed prior to commencement with the Council's Arboricultural Officer.

6.4.2 If the conditions are suitable on-site and there is sufficient space, underground services may cross the RPA if a low impact method is used. Such low impact methods include: moleing, directional drilling and thrust boring. It is important that all entry and exit pits remain outside of the RPA and the services are installed at a sufficient depth (at least 600mm) so as to avoid the tree rooting system.

6.5 Tree Protection

6.5.1 All trees that are to be retained on the Site will be protected by the use of a tree protection barrier erected in the location shown on the accompanying TPP, drawing number:

J21078_Arb_TPP. The barrier will consist of “Heras” type panels (or similar) braced at appropriate intervals and secured to keep in place. The tree protection barrier will be erected prior to the occupation of the Site by the contractor and will only be removed once the construction phase is complete.

- 6.5.2 Where specified on the accompanying TPP drawing, reference J21078_Arb_TPP, the ground between the new building and the tree protection barrier will be protected by geotextile fabric and side butting scaffold boards or thick plywood fit for purpose, on a compressible layer (e.g. 100mm layer of woodchip over a geotextile membrane). A single thickness of boarding will provide sufficient protection for pedestrian load.

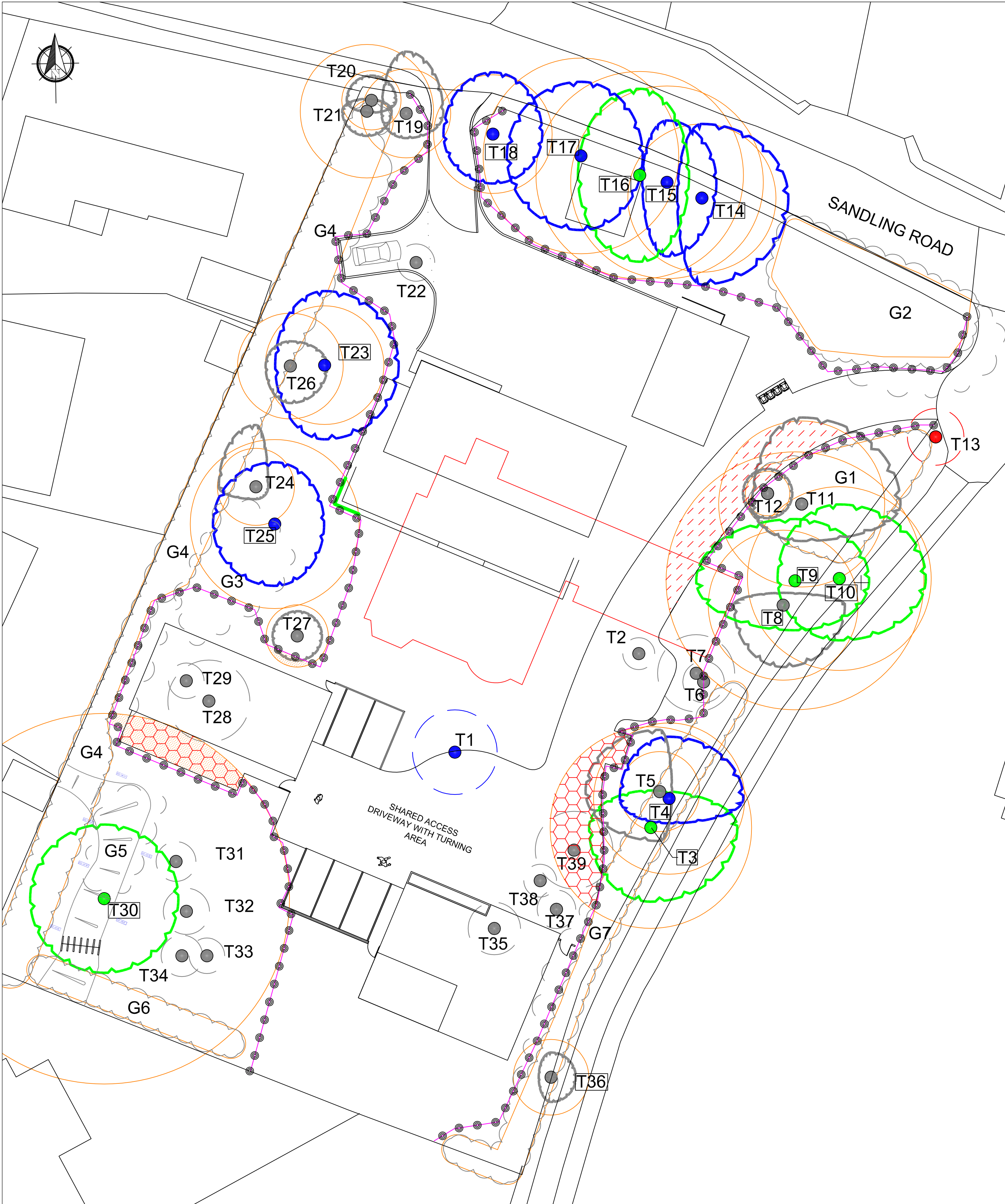
6.6 Site Monitoring and Supervision

- 6.6.1 The process of reporting to the client and LPA Arboricultural Officer will be by emailing the checklist form in Appendix D. The detailed schedule of works is yet to be produced. As such, a draft monitoring schedule has been produced at this stage to demonstrate how the project will be supervised throughout its lifespan. Once the schedule of works has been produced, the draft monitoring schedule can be finalised with more detail and timings. It can then be submitted as a condition of planning approval.

7 CONCLUSION

- 7.1 GES was commissioned by Mr and Mrs Sercombe to carry out a tree survey at the Site. The results of the survey indicate that the trees within the survey area vary considerably in terms of quality and contribution to the amenity value within the local area.
- 7.2 A total of fifteen individual trees, two groups of trees and part of two further groups of trees will be removed to enable the proposed development. The majority of the trees to be removed are within the C category due to their young age or ailing condition.
- 7.3 Through the specified construction methodologies and mitigation measures, it will be possible to minimise the impact of the proposed development on the retained trees.
- 7.4 Overall, there are no known overriding arboricultural constraints which would prevent the proposed development from going ahead, subject to the protection measures and construction methodologies specified within this report being correctly implemented.

DRAWINGS



Underlined tree tags denote tree located by eye

Note: Trees labeled thus T are subject to TPO

Tree categories

Category A tree
BS5837 2012

Category B tree
BS5837 2012

Category C tree
BS5837 2012

Category U tree
BS5837 2012

Arboricultural Strategy

Tree to be retained
Colour reference in accordance with the categories defined by BS:5837

Tree to be removed
Colour reference in accordance with the categories defined by BS:5837

Tree group/hedge to be retained
Colour reference in accordance with the categories defined above

Tree group or part of tree group to be removed
Colour reference in accordance with the categories defined above

Line along which Tree Protection Barrier should be installed. Refer to accompanying report for specification

Area of hard surface to be installed following a 'no dig' method of construction

Area of supervised excavations. Refer to accompanying report for details

Area of existing hard surface to remain in situ and used as a sub base for the proposed re-surfacing of the car park

Area where additional ground protection will be required. Refer to the accompanying report for details.

Drawing Reference : J21078_Arb_TPP

Project Title
High Meadow, Sandling Road, Saltwood

Drawing Title
Tree Protection Plan

Date : 18-01-23 Checked : GN


Drawn : NT Approved : N/A

Status : Final Scale : 1:200@A2


Greenspace Ecological Solutions


APPENDICES


APPENDIX A – TREE SURVEY SCHEDULE


Project:	High Meadow, Sandling Road, Saltwood							BS 5837 2012 Trees in relation to design, demolition and construction- recommendations			Surveyed by		NAT		<div> Greenspace Ecological Solutions</div>		
Ref:	J21078_Arb_TSS										Weather		Clear				
Date:	25.01.22										Tagged		No				
Client:	Holloways																
				Canopy Spread													
Tree No.	Species	Height (m)	DBH (mm)	N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category		
T1	Araucaria araucana (Monkey Puzzle)	12	440	3	3	3	3	1	4	MA	Good	Good	None	20-40	B2		
T2	Taxus baccata (Yew)	5	654	1	1	1	1	2	1	MA	Fair - Pollard.	Good	None	20-40	C1		
T3	Tilia X europaea (Common Lime)	15	680	3	7	6	5	1	2	M	Good	Good	None	40+	A2		
T4	Tilia X europaea (Common Lime)	14	510	5	6	2	4	1	4	MA	Good	Good	None	40+	B2		
T5	Tilia X europaea (Common Lime)	12	270	5	1	4	6	1	4	Y	Good - sucker growth	Good	None	20-40	C1		
T6	Taxus baccata (Yew)	5	140	1	2	2	1	1	2	Y	Good	Good	None	40+	C1		
T7	Taxus baccata (Yew)	5	260	4	4	2	1	1	2	Y	Fair - Poor shape & form.	Fair	None	10-20	C1		
T8	Tilia X europaea (Common Lime)	13	506	1	5	5	4	2	1	MA	Fair - suppressed.	Fair - Crown distorted due to group pressure.	None	20-40	C1		
T9	Tilia X europaea (Common Lime)	18	870	5	6	4	8	1	2	M	Good	Good	None	40+	A2		
T10	Quercus robur (Common Oak)	16	620	6	7	5	5	1	5	MA	Good - Off site.	Good	None	40+	A2		
T11	Fraxinus excelsior (Ash)	17	560	7	8	3	4	1	6	M	Fair - Die back.	Fair	None	10-20	C1		
T12	Ilex aquifolium (Holly)	5	150	2	2	2	2	1	0	Y	Good	Good	None	40+	C1		

Project:	High Meadow, Sandling Road, Saltwood							BS 5837 2012 Trees in relation to design, demolition and construction- recommendations	Surveyed by		NAT	<div><div>GES</div><div>Greenspace Ecological Solutions</div></div>				
Ref:	J21078_Arb_TSS								Weather		Clear					
Date:	25.01.22								Tagged		No					
Client:	Holloways															
				Canopy Spread												
Tree No.	Species	Height (m)	DBH (mm)	N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category	
T13	Fraxinus excelsior (Ash)	6	200	2	2	2	2	1	2	Y	Poor - Die back. Off site	Fair	None	<10	U	
T14	Tilia X europaea (Common Lime)	16	500	6	7	7	2	1	4	MA	Good - Crown distorted due to group pressure.	Good	None	20-40	B2	
T15	Tilia X europaea (Common Lime)	18	650	5	4	6	2	1	5	MA	Good - Crown distorted due to group pressure.	Good	None	20-40	B2	
T16	Tilia X europaea (Common Lime)	20	700	7	4	7	5	1	4	M	Good	Good	None	40+	A2	
T17	Tilia X europaea (Common Lime)	17	660	6	5	6	6	1	4	MA	Good - Crown distorted due to group pressure.	Good	None	20-40	B2	
T18	Fagus sylvatica (Beech)	13	400	5	4	4	4	1	2	MA	Good	Good	None	40+	B2	
T19	Laurus nobilis (Bay)	8	300	5	3	2	2	4	2	MA	Good - Coppice.	Good	None	20-40	C1	
T20	X Cupressocyparis leylandii (Leyland Cypress)	10	200	2	2	1	2	1	1	Y	Good	Good	None	20-40	C1	
T21	X Cupressocyparis leylandii (Leyland Cypress)	15	450	1	2	2	2	1	2	MA	Good	Good	None	20-40	C1	
T22	Magnolia (Magnolia)	3	276	1	2	1	1	4	1	MA	Good - Pollard.	Good	None	20-40	C1	
T23	Acer platanoides (Norway Maple)	12	400	6	6	6	4	1	6	MA	Good - early stem lesions	Good	None	40+	B2	

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Tree No.	Species	Height (m)	DBH (mm)	N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category
T24	Betula pendula (Silver Birch)	9	260	5	1	1	3	1	3	MA	Fair - suppressed.	Fair - Poor shape & form.	None	10-20	C1
T25	Betula pendula (Silver Birch)	11	570	5	4	5	5	1	4	M	Good - Previously reduced.	Good	None	20-40	B2
T26	Laurus nobilis (Bay)	8	357	2	3	3	2	3	2	MA	Good	Fair	None	20-40	C1
T27	Laurus nobilis (Bay)	5	210	2	2	2	2	1	1	MA	Good	Good	None	20-40	C1
T28	Taxus baccata (Yew)	5	277	3	4	3	3	2	1	MA	Good	Good	None	40+	C1
T29	Taxus baccata (Yew)	4	120	1	1	1	1	1	2	Y	Good	Good	None	40+	C1
T30	Fagus sylvatica 'Purpurea' (Copper Beech)	12	1280	6	6	6	6	1	3	M	Good - Previously reduced.	Good	None	40+	A2
T31	Cornus sanguinea (Dogwood)	4	134	3	3	1	2	2	1.5	Y	Good	Good	None	20-40	C1
T32	Taxus baccata (Yew)	3	156	2	3	2	2	2	1	Y	Fair - Low vitality.	Good	None	20-40	C1
T33	Taxus baccata Fastigiata (Yew)	4	120	1	1	1	1	1	1.5	Y	Good	Good	None	40+	C1
T34	Ilex aquifolium (Holly)	3	140	1	1	1	1	1	0	Y	Good - Coppice.	Good	None	40+	C1
T35	Magnolia (Magnolia)	4	177	3	1	2	2	2	2	MA	Good - Previously reduced.	Good	None	20-40	C1

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T36	Crataegus monogyna (Hawthorn)	5	255	2	2	2	1	2	2	MA	Good - Previously reduced.	Good	None	40+	C1
T37	Acacia dealbata (mimosa)	6	130	1	3	2	1	1	2	Y	Good	Good	None	20-40	C1
T38	Eucalyptus gunnii (Cider Gum)	7	670	1	1	1	1	1	2	M	Fair - Pollard.	Poor - Decay present on stem.	None	10-20	C1
T39	Tilia X europaea (Common Lime)	5	262	3	3	3	2	2	0	MA	Good - Pollard.	Fair	None	10-20	C1
G1	Ilex aquifolium (Holly),Prunus laurocerasus (Cherry Laurel)	5	Varied							Y	Good	Good	None	40+	C1
G2	Prunus laurocerasus (Cherry Laurel),Prunus lusitanica (Portuguese Laurel),Laurus nobilis (Bay),Chamaecyparis lawsoniana (Lawson Cypress)	8	Varied							MA	Good - boundary group.	Good	None	20-40	C1

Project:	High Meadow, Sandling Road, Saltwood							BS 5837 2012 Trees in relation to design, demolition and construction- recommendations	Surveyed by		NAT	<div> Greenspace Ecological Solutions</div>			
Ref:	J21078_Arb_TSS								Weather		Clear				
Date:	25.01.22								Tagged		No				
Client:	Holloways														
				Canopy Spread											
Tree No.	Species	Height (m)	DBH (mm)	N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category
G3	Acer platanoides (Norway Maple),Prunus laurocerasus (Cherry Laurel),Ilex aquifolium (Holly)	6	Varied							Y	Good	Good	None	40+	C1
G4	Ilex aquifolium (Holly),Prunus laurocerasus (Cherry Laurel),Laurus nobilis (Bay),Thuja plicata (Western Red Cedar),Buxus sempervirens (Box)	4	Varied							MA	Good - boundary group.	Good	None	20-40	C1
G5	Sambucus nigra (Elder),Ilex aquifolium (Holly)	4	Varied							Y	Good	Good	None	40+	C1
G6	Prunus laurocerasus (Cherry Laurel),Eucalyptus gunnii (Cider Gum)	5	Varied							Y	Good - boundary group.	Good	None	40+	C1

Project:	High Meadow, Sandling Road, Saltwood							BS 5837 2012 Trees in relation to design, demolition and construction- recommendations			Surveyed by	NAT	<div> Greenspace Ecological Solutions</div>			
Ref:	J21078_Arb_TSS										Weather	Clear				
Date:	25.01.22										Tagged	No				
Client:	Holloways															
				Canopy Spread												
Tree No.	Species	Height (m)	DBH (mm)	N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category	
G7	Prunus laurocerasus (Cherry Laurel),Ilex aquifolium (Holly),Eucalyptus gunnii (Cider Gum),Laurus nobilis (Bay)	5	Varied								Y	Good - boundary group.	Good	None	40+	C1

APPENDIX B: EXTRACT FROM THE CELL WEB PRODUCT BROCHURE

CellWeb

Tree Root Protection System



CellWeb Tree Root Protection System provides a flexible and permeable solution for protecting tree roots while creating a strong stable surface for traffic.



With increased urbanisation and more redevelopments of existing properties, the need to be mindful of the impact on the surrounding environment is more important than ever.

The demand for building site access, driveways and parking around existing trees can have a potentially fatal impact on the tree if carried out incorrectly. Tree preservation orders (TPO's) ensure that trees are not wilfully damaged. However the need for vehicle access over and around tree roots can still cause the following problems:

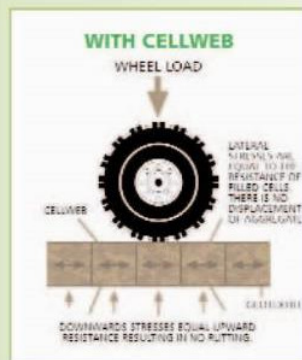
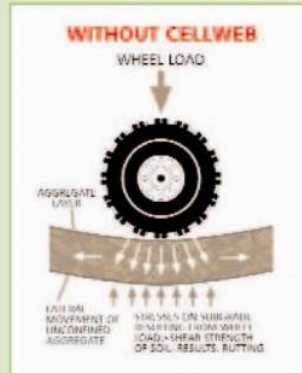


Problems:

- Compaction of subsoils (especially by construction traffic) causing oxygen and nutrient depletion
- Creating an impermeable surface that prevents water reaching the roots
- Changes in ground level and water table
- Damage caused during excavation
- Contamination of the subsoil

By using CellWeb Tree Root Protection System you can avoid these problems and ensure the tree's long-term future. BS 5837:1991 (revised 2005) and APN 1 provide information for the protection of trees during the construction process, and CellWeb is a well-established solution that conforms to these guidelines.

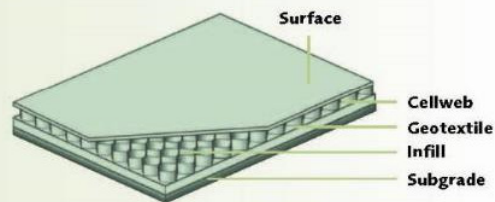
Product features



Cellweb's patented design with its unique cellular structure and perforated cell walls reduces the vertical load pressure on tree roots and prevents damage. With clean granular materials as infill, air and moisture can reach the roots to encourage healthy growth.

With no-dig solutions being the preferred option of most Arboricultural Consultants and Tree Officers, CellWeb is ideal as only the surface vegetation need be removed. As well as avoiding disruption to the roots this reduces installation time and saves money.

What's more CellWeb also cuts down the depth required for the sub base – in most cases by 50% for further cost savings. CellWeb also significantly reduces surface rutting, increasing the long-term performance of the finished surface.



Using CellWeb for tree root protection gives you these benefits:

- Reduced depth of excavation required
- Preventing the compaction of subsoils
- Preventing oxygen and nutrient depletion
- Environmentally sound
- Quick, easy and cost-effective installation
- Free technical support available

CellWeb gives you the cost-effectiveness you need at the same time as helping to preserve trees.

Geosynthetics Ltd is a leading dis

Please call
01455 617 139
or email sales@geosyn.co.uk
for further information.

Wide
product
range

Large
stock
holding

Next day
delivery



Access road for the National Lake District Parks Authority.

Site before construction pictured above.



Cellweb during installation.



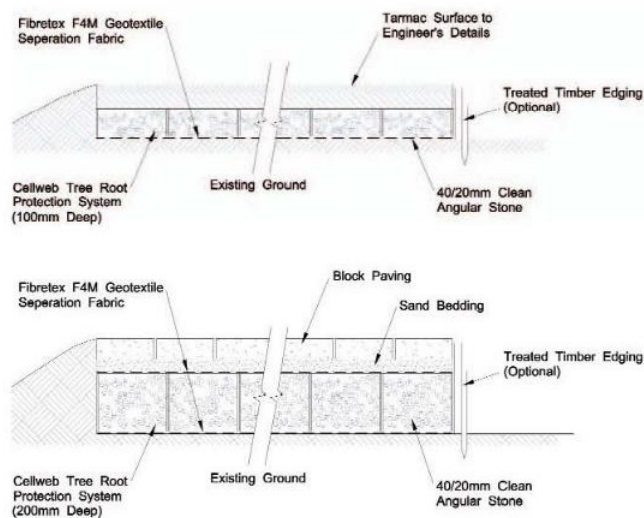
Final surfacing.

Final surfacing

The Cellweb Tree Root Protection is totally confined within the clean stone sub base, therefore you can choose whichever surface materials are most appropriate for your installation. Some materials are more suitable than others and serious consideration should be given to the porosity of the surface for continued healthy growth of the tree. An ideal surfacing are DuoBlocks: a grass reinforcement and gravel retention system. Geosynthetics can supply these systems for a visually attractive surface that also has the advantage of being fully porous.

Loose or bonded gravels can be used as an alternative hard landscaping and Cellweb can also be used with block paviors whose porous joints will permit moisture and air transfer to the roots. Where planning allows, porous asphalt is yet another possible surfacing treatment.

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APPENDIX C – SECTION 4, EXTRACTED FROM NJUG 4

4. HOW TO AVOID DAMAGE TO TREES

This section gives general guidance on methods of work to minimise damage to trees. The local authority (or for privately owned trees, the owner or their agent), should be consulted at an early stage prior to the commencement of any works. This will reduce the potential for future conflict between trees and apparatus.

4.1 Below Ground

Wherever trees are present, precautions should be taken to minimise damage to their root systems. As the shape of the root system is unpredictable, there should be control and supervision of any works, particularly if this involves excavating through the surface 600mm, where the majority of roots develop.

4.1.1 Fine Roots

Fine roots are vulnerable to desiccation once they are exposed to the air. Larger roots have a bark layer which provides some protection against desiccation and temperature change. The greatest risk to these roots occurs when there are rapid fluctuations in air temperature around them e.g. frost and extremes of heat. It is therefore important to protect exposed roots where a trench is to be left open overnight where there is a risk of frost. In winter, before leaving the site at the end of the day, the exposed roots should be wrapped with dry sacking. This sacking must be removed before the trench is backfilled.

4.1.2 Precautions

The precautions referred to in this section are applicable to any excavations or other works occurring within the Prohibited or Precautionary Zones as illustrated in Figure 1 – 'Tree Protection Zone'.

4.1.3 Realignment

Whenever possible apparatus should always be diverted or re-aligned outside the Prohibited or Precautionary Zones. Under no circumstances can machinery be used to excavate open trenches within the Prohibited Zone.

The appropriate method of working within the Precautionary Zone should be determined in consultation with the local authority (or for privately owned trees the owner or their agent) and may depend on the following circumstances;

- the scope of the works (e.g. one-off repair or part of an extensive operation)
- degree of urgency (e.g. for restoration of supplies)
- knowledge of location of other apparatus
- soil conditions
- age, condition, quality and life expectancy of the tree

Where works are required for the laying or maintenance of any apparatus within the Prohibited or Precautionary Zones there are various techniques available to minimise damage.

Acceptable techniques in order of preference are;

a) Trenchless

Wherever possible trenchless techniques should be used. The launch and reception pits should be located outside the Prohibited or Precautionary Zones. In order to avoid damage to roots by percussive boring techniques it is recommended that the depth of run should be below 600mm. Techniques involving external lubrication of the equipment with materials other than water (e.g. oil, bentonite, etc.) must not be used when working within the Prohibited Zone. Lubricating materials other than water may be used within the Precautionary Zone following consultation and by agreement.

b) Broken Trench - Hand-dug

This technique combines hand dug trench sections with trenchless techniques if excavation is unavoidable. Excavation should be limited to where there is clear access around and below the roots. The trench is excavated by hand with precautions taken as for continuous trenching as in (c) below. Open sections of the trench should only be long enough to allow access for linking to the next section. The length of sections will be determined by local conditions, especially soil texture and cohesiveness, as well as the practical needs for access. In all cases the open sections should be kept as short as possible and outside of the Prohibited Zone.

c) Continuous Trench - Hand-dug

The use of this method must be considered only as a last resort if works are to be undertaken by agreement within the Prohibited Zone. The objective being to retain as many undamaged roots as possible.

Hand digging within the Prohibited or Precautionary zones must be undertaken with great care requiring closer supervision than normal operations.

After careful removal of the hard surface material digging must proceed with hand tools. Clumps of roots less than 25mm in diameter (including fibrous roots) should be retained in situ without damage. Throughout the excavation works great care should be taken to protect the bark around the roots.

All roots greater than 25mm diameter should be preserved and worked around. These roots must not be severed without first consulting the owner of the tree or the local authority tree officer / arboriculturist. If after consultation severance is unavoidable, roots must be cut back using a sharp tool to leave the smallest wound.

4.1.5 Backfilling

- Any reinstatement of street works in the United Kingdom must comply with the relevant national legislation (see: **Volume 6 – 'Legislation and Bibliography'**). In England this relates to the requirements of the code of practice – 'Specification for the Reinstatement of Openings in Highways' approved under the New Roads and Street Works Act 1991. Without prejudice to the requirements relating to the specification of materials and the standards of workmanship, backfilling should be carefully carried out to avoid direct damage to roots and excessive compaction of the soil around them.
- The backfill should, where possible, include the placement of an inert granular material mixed with top soil or sharp sand (not builder's sand) around the roots. This should allow the soil to be compacted for resurfacing without damage to the roots securing a local aerated zone enabling the root to survive in the longer term.
- Backfilling outside the constructed highway limits should be carried out using the excavated soil. This should not be compacted but lightly "tamped" and usually left slightly proud of the surrounding surface to allow natural settlement. Other materials should not be incorporated into the backfill.

4.1.6 Additional Precautions near Trees

- Movement of heavy mechanical plant (excavators etc.) must not be undertaken within the Prohibited Zone and should be avoided within the Precautionary Zone, except on existing hard surfaces, in order to prevent unnecessary compaction of the soil. This is particularly important on soils with a high proportion of clay. Spoil or material must not be stored within the Prohibited Zone and should be avoided within the Precautionary Zone.
- Where it is absolutely necessary to use mechanical plant within the Precautionary Zone care should be taken to avoid impact damage to the trunk and branches. A tree must not be used as an end-stop for paving slabs or other materials nor for security chaining of mechanical plant. If the trunk or branches of a tree are damaged in any way advice should be sought from the local authority tree officer / arboriculturist.

See TABLE 1 –'Prevention of Damage to Trees Below Ground' below for summary details regarding causes and types of damage to trees and the implications of the damage and the necessary precautions to be taken to avoid damage.

TABLE 1 - Prevention of Damage to Trees Below Ground

Causes of Damage	Type of Damage	Implications to Tree	Precautions
Trenching, mechanical digging etc.	Root severance	<ul style="list-style-type: none"> • The tree may fall over • Death of the root beyond the point of damage • Potential risk of infection of the tree <p>The larger the root the greater the impact on the tree.</p>	Hand excavate only within the Precautionary Zone. Work carefully around roots. Do not cut roots over 25mm in diameter without referring to the local authority tree officer. For roots less than 25mm in diameter use a sharp tool and make a clean cut leaving as small a wound as possible.
Trenching, mechanical digging, top soil surface removal etc.	Root bark damage	<ul style="list-style-type: none"> • The tree may fall over • If the damage circles the root it will cause the death of the root beyond that point • Potential risk of infection of the tree <p>The larger the root the greater the impact on the tree.</p>	Do not use mechanical machinery to strip the top soil within the Precautionary Zone. Hand excavate only within the Precautionary Zone. Work carefully around roots. Do not cut roots over 25mm in diameter without referring to the local authority tree officer. For roots less than 25mm use a sharp tool and make a clean cut leaving as small a wound as possible.
Vehicle movement and plant use. Material storage within the precautionary area.	Soil compaction & water saturation	Restricts or prevents passage of gaseous diffusion through soil, the roots are asphyxiated and killed affecting the whole tree.	Prevent all vehicle movement, plant use or material storage within the Precautionary Zone.
Top-soil scouring, excavation or banking up.	Alterations in soil level causing compaction or exposure of roots.	Lowering levels strips out the mass of roots over a wide area. Raising soil levels asphyxiates roots and has the same effect as soil compaction.	Avoid altering or disturbing soil levels within the Precautionary Zone.
Use of herbicides.	Poisoning of the tree via root absorption	<ul style="list-style-type: none"> • Death of the whole tree • Death of individual branches <p>Damage to leaves and shoots.</p>	The selection and application of herbicides must be undertaken by a competent person in accordance with COSHH regulations.
Spillage of oils or other materials.	Contamination of soil	Toxic and asphyxiation effects of chemicals, oils, building materials (cement, plaster, additives etc.) on the root system can kill the tree.	Never store oils, chemicals or building materials within the Precautionary Zone or within the branch spread of a tree, whichever is the greater.
Placement or replacement of underground apparatus.	Various	Death of all or part of the tree.	Effective planning and liaison with local authority tree officer, taking into consideration the position of trees, and their future growth potential and management

4.2 Above Ground

4.2.1 Damage by Pruning

Trees (including shrubs and hedges) can be damaged by inappropriate or excessive pruning. Reference should be made to the Energy Networks Association (ENA) document "Engineering Technical Report 136 Vegetation Management near Electricity Equipment – Principles of Good Practice" (see section 8 – 'Other Useful Publications') or appropriate company specific documentation for guidance on pruning.

See TABLE 2 – 'Prevention of Damage to Trees Above Ground' below for summary details regarding causes and types of damage to trees and the implications of the damage and the necessary precautions to be taken to avoid damage.

TABLE 2 - Prevention of Damage to Trees Above Ground

Causes of Damage	Type of Damage	Implications for the Tree	Precautions
Impact by vehicle or plant Physical attachment of signs or hoardings to the trunk Storage of materials at base of tree Rubbing by winch or pulling cables	Bark bruising, bark removal, damage to the wood, damage to buttress roots, abrasion to trunk	Wounding with the potential for infection ultimately resulting in death of all or part of the tree. Structural failure of the tree	Surround the trunk with protective free-standing barrier. Exclude vehicles, plant or material storage from the Precautionary Zone. Ensure sufficient clearance of cables or ropes.
Impact by vehicle or plant Rubbing by overhead cables	Bark damage to branches, breakage and splitting of branches, abrasion to branches	Structural failure of the branch. Wounding or loss of a branch with the potential for infection ultimately resulting in death of all or part of the branch or tree.	Exclude vehicles, plant or material storage from the Precautionary Zone. Ensure sufficient clearance of cables or ropes. All pruning should be carried out in accordance with BS3998 (<i>prune affected branches to give appropriate clearance from cables</i>)
Inappropriate siting of overhead apparatus, such as CCTV, lighting fixtures and communications masts and dishes.	Inappropriate pruning, unnecessary tree removal	Severely pruning tree to acquire line of sight signal for communications dish etc.	Effective planning and liaison with local authority tree officer / arboriculturist, taking into consideration the position of trees, and their future growth potential and management.
Lack of forethought in design and location of apparatus and services entries on new developments	Complete tree removal	The tree is removed unnecessarily	Agree the location and installation of services at the design stage. Consideration should be given to the creation of dedicated service routes wherever possible.
Use of herbicides	Poisoning of the tree via absorption through bark, leaves and shoots	Death of the whole tree, death of individual branches, damage to leaves and shoots	The selection and application of herbicides must be undertaken by a competent person in accordance with COSHH regulations.

APPENDIX D – PROGRAMME OF SITE MONITORING

High Meadow, Saltwood Draft Site Monitoring Form

To be completed by the named arboriculturist and emailed to the client and tree officer at the completion of each operation.

Arboriculturist.....

Client.....

Project Manager.....

Tree Officer.....

(The above to be filled in with names and contact numbers)

OPERATION	TIMING	DATE	COMMENTS
Pre-commencement meeting or contact with project/site manager.	Before any works or pre-works on site		
Spot check of tree protection measures	Prior to demolition taking place		
Spot check of installation of no dig surface for access road in RPA of T3 and T4	During site preparation		
Supervision of excavations for foundations within RPA of T25	During landscape phase		
Spot check of installation of no dig surface for patio in RPA of T30	During landscape phase		

Completion of development	Once all construction activity has been completed		
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