



Arboricultural Impact Assessment Overview

Relation to Proposed Construction of
Detached Two-Storey Residential Property at



**Land South of 39 Clitheroe Road,
Whalley, Lancashire, BB7 9AD**

Prepared by:

Bowland 
Tree Consultancy Ltd

July 2019

**ARBORICULTURAL IMPACT ASSESSMENT OVERVIEW
LAND SOUTH OF 39 CLITHEROE ROAD, WHALLEY**

Control sheet

Project No.: BTC1823

Site: Land South of 39 Clitheroe Road, Whalley, BB7 9AD

Clients: Mr & Mrs Bentley

Council: Ribble Valley Borough Council

Survey Date: 4 January 2018

Surveyed by: Jennie Keighley PhD MSc MArborA

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ARBORICULTURAL IMPACT ASSESSMENT OVERVIEW LAND SOUTH OF 39 CLITHEROE ROAD, WHALLEY

CONTENTS

1. TREE SURVEY SCHEDULE & BS5837:2012 – TABLE 1
2. TEMPORARY PROTECTIVE FENCING SPECIFICATION
3. MANUFACTURER'S BROCHURE FOR CELLULAR CONFINEMENT SYSTEM
4. TREE IMPACT PLAN



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TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL	
Site:	Land South of 39 Clitheroe Road, Whalley, Lancashire, BB7 9AD
Clients:	Mr & Mrs Bentley

Surveyor:	Jennie Keighley PhD MSc MArborA
Survey Date:	4 January 2018
Job Reference:	BTC1823

No.	Species	Height	Stem Diam.	Branch Spread	Branch & Canopy Clearance	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA (m ²)	RPA Radius (m)
T1	Sycamore	18	1x320 1x270 (ts)	N E S W 6 8 1 6	6 12	EM	M/G	<ul style="list-style-type: none"> ■ Crown biased to east and west due to neighbouring trees. ■ Light deadwood to approximately 70mm. ■ Crown expressing a moderate reduction in vitality. 	<ul style="list-style-type: none"> ■ Retain in context of proposed development. ■ Protect Root Protection Area (RPA) throughout development using Temporary Protective Fencing (specification appended) to form a Construction Exclusion Zone (CEZ). ■ Construct proposed wall within RPA using a pier and beam design and construction in order to bridge over roots where possible. NB: The production of a specification for the design and construction of the wall should be conditioned to a planning approval. 	10+	C1/2	79	5.02
T2	Horse Chestnut	22	760	N E S W 6 10 6 8	2-SE 3	M	G	<ul style="list-style-type: none"> ■ Moderate stem lean east with associated basal flaring on west side. ■ Stem bifurcates at a height of approximately 2m with very tight fork. ■ Light deadwood to approximately 50mm. ■ Lower crown pruned away from neighbouring public footpath. 	<ul style="list-style-type: none"> ■ Retain in context of proposed development. ■ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ. ■ Construct proposed wall within RPA using a pier and beam design and construction in order to bridge over roots where possible. NB: The production of a specification for the design and construction of the wall should be conditioned to a planning approval. 	20+	B1/2	261	9.12
T3	Sycamore	18	370	N E S W 4 7 5 3	5-S 5	M	G	<ul style="list-style-type: none"> ■ Stem base 0.3m from boundary retaining wall top. ■ 0.5m above pavement height. ■ Moderate stem lean to east and crown biased to south-east due to presence of neighbouring trees. ■ Moderate deadwood to approximately 50mm. ■ Dead 100mm diameter, 2m long pruning stub overhanging neighbouring public footpath. 	<ul style="list-style-type: none"> ■ Remove in context of site landscaping. 	10+	C1/2	62	4.44

Headings and Abbreviations:

No.	Allocated sequential reference number - Tree ('T'), Group ('G'), Woodland ('W') or Hedge ('H') reference number - refer to plan and to numbered tags where applicable
Species:	Common name
Height:	In metres, to nearest half metre - where possible approximately 80% are measured using an electronic clinometer and the remainder estimated against the measured trees. In the case of Groups and Woodlands the measurement listed is that of the highest tree
Stem Diam.:	Stem diameter in millimetres, to nearest 10mm - measured and calculated as per Annex C of BS5837:2012. MS = multi-stemmed, TS = twin-stemmed
Branch Spread:	Crown radius measured (or estimated where considered appropriate) from the four cardinal points (north, east, south and west) to give an accurate visual representation of the crown
Branch & Canopy Clearances:	Existing height above ground level, in metres, of first significant branch and direction of growth (e.g. 2.5-N) and of canopy at lowest point - to inform on crown to height ratio, potential for shading, etc.
Life Stage:	Estimated age class - Y = young, SM = semi-mature, EM = early-mature, M = mature, PM = post-mature
PC:	Physiological Condition - a measure of the tree's overall vitality, i.e. D = Dead, MD = Moribund, P = Poor, M = Moderate, G = Good
General Observations and Comments:	Comments relating to the tree's overall condition and any other pertinent factors including structural defects, current and potential direct structural damage, physiological decline, poor form, etc.
Management Recommendations:	Either Preliminary or In Consideration of the Proposal - In the case of Arboricultural Constraints Surveys the recommended management works only take existing site and tree circumstances and conditions into account and not proposed developments. Arboricultural Impact Assessment and Method Statement related Surveys take the proposed development into consideration with recommendations made accordingly. More than one option may be given if considered appropriate
ERC:	Estimated Remaining Contribution - in years as per BS5837:2012 (i.e. <10, 10+, 20+, 40+)
Cat. Grade:	Category Grading - tree retention value listed as U, A, B or C - in accordance with BS5837:2012 Table 1
RPA m²:	Root Protection Area in m ² - calculated area around the tree that must be appropriately protected throughout the development process in order avoid root damage
RPA Radius (m):	Root Protection Area Radius - in metres measured from the centre of the stem to the line of tree protection
# (Estimated Dimensions):	Where trees are located off-site, or are inaccessible for any other reason, and accurate measurements or other information cannot be taken then the information provided is estimated and is duly suffixed with a "#" symbol

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL							
Site:	Land South of 39 Clitheroe Road, Whalley, Lancashire, BB7 9AD						
Clients:	Mr & Mrs Bentley						

Surveyor:	Jennie Keighley PhD MSc MArborA
Survey Date:	4 January 2018
Job Reference:	BTC1823

No.	Species	Height	Stem Diam.	Branch Spread	Branch & Canopy Clearance	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA (m²)	RPA Radius (m)	
T4	Norway Maple	19	320	N E S W	1 3 3 2	12-S 12	M	G	<ul style="list-style-type: none"> Very tall, thin tree due to presence of neighbouring trees. 	<ul style="list-style-type: none"> Retain in context of proposed development. Protect RPA throughout development using Temporary Protective Fencing to form a CEZ. Construct proposed wall within RPA using a pier and beam design and construction in order to bridge over roots where possible. NB: The production of a specification for the design and construction of the wall should be conditioned to a planning approval. 	10+	C1	46	3.84
T5	Horse Chestnut	22	800	N E S W	7 5 9 10	2-W 2	M	G	<ul style="list-style-type: none"> Evidently growing in/on a mound of made ground. Vertical, almost fully occluded helical wound runs from base to a height of approximately 13m. Suspected hazard beam crack developing on top of 350mm diameter primary branch extending south-west at a height of 2m (unable to view in detail from ground level). Crown heavily biased west. 	<ul style="list-style-type: none"> Retain in context of proposed development. Protect RPA throughout development using Temporary Protective Fencing to form a CEZ. 	10+	C1/2	290	9.6
T6	Sycamore	20	620	N E S W	8 7 5 6	3-N 4	M	G	<ul style="list-style-type: none"> Very heavy ivy to upper crown significantly impeding inspection. Slight stem lean north with associated basal flaring on southern side. 	<ul style="list-style-type: none"> Retain in context of proposed development. Protect RPA throughout development using Temporary Protective Fencing to form a CEZ. Construct proposed hard-surfaced driveway, due to encroachment into RPA, using a cellular confinement system in strict accordance with s7.4 of BS5837:2012 (see appended manufacturer's brochure). 	20+	B1	174	7.44
T7	Sycamore	19	580	N E S W	6 6 8 6	5-SE 3	M	G	<ul style="list-style-type: none"> Heavy ivy to upper crown significantly impedes inspection. Very slight stem lean south. 	<ul style="list-style-type: none"> Retain in context of proposed development. Protect RPA throughout development using Temporary Protective Fencing to form a CEZ. Sever ivy at base and at a height of 1.5m and remove section in between. 	20+	B1	152	6.96
T8	Sycamore	16.5	720	N E S W	8 5 10 9	4-N 3	M	G	<ul style="list-style-type: none"> Approximately ten unoccluded and partially occluded pruning wounds in lower crown to a diameter of 300mm, evidently from two separate crown lifts in recent years. Crown moderately biased south and west. 	<ul style="list-style-type: none"> Remove in order to construct development as proposed. 	20+	B1	235	8.64
T9	Horse Chestnut	13	720	N E S W	7 7 7 7	2-N 2	M	G	<ul style="list-style-type: none"> Brush piled around south-western side of base. Numerous pruning wounds in lower crown with long stubs left. 	<ul style="list-style-type: none"> Retain in context of proposed development. Protect RPA throughout development using Temporary Protective Fencing to form a CEZ. 	20+	B1	235	8.64
T10	Common Lime	14	490	N E S W	6 5 6 6	4-S 3	M	G	<ul style="list-style-type: none"> Brush piled around western side of base. Crown lifted in past, wounds fully occluded. 	<ul style="list-style-type: none"> Retain in context of proposed development. Protect RPA throughout development using Temporary Protective Fencing to form a CEZ. 	20+	B1	109	5.88

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Page: 3 of 5

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T11	Apple	7	1x260 1x230 (ts)	N E S W 3.5 3.5 3.5 3.5	2.5-NE 2	M	M	<ul style="list-style-type: none"> Severe stem lean east. Two leaders removed at a height of 1.5m. Crown reduced. Limited remaining life expectancy. 	<ul style="list-style-type: none"> Remove in context of site landscaping. 	<10	U	55	4.17
T12	Elm	16	710	N E S W 7 7 6 6	5-N 4	M	G	<ul style="list-style-type: none"> Located in neighbouring garden, outside proposed development boundary. Trifurcates at a height of 2m with acutely tight forks. Crown lifted to a height of 5m. 	<ul style="list-style-type: none"> Retain in context of proposed development. Protect RPA throughout development using Temporary Protective Fencing to form a CEZ. 	20+	B1	228	8.52
T13	Purple Plum	6	1x230 1x160 (ts)	N E S W 3 6 4 3	3-E 2	M	M	<ul style="list-style-type: none"> Bifurcates near ground level. Eastern leader has severe lean east. Heavy ivy in crown has been severed and is dead. Limited remaining life expectancy. 	<ul style="list-style-type: none"> Remove in context of site landscaping. 	<10	U	35	3.36
T14	Oak	18	1x510 1x490 (ts)	N E S W 8.5 8.5 8.5 8.5	1.5-W 3	M	G	<ul style="list-style-type: none"> Located in neighbouring garden, outside proposed development boundary. Growing in rockery area, at level approximately 1m higher than site. Bifurcates at base. Crown lifted to a height of 4m to 5m. Frequent deadwood and branch tear out wounds (including recent) to a diameter of 50mm. 	<ul style="list-style-type: none"> Retain in context of proposed development. Protect RPA throughout development using Temporary Protective Fencing to form a CEZ. 	20+	B1	226	8.49
T15	Beech	20	720	N E S W 7 8 11 7	5-S 4	M	G	<ul style="list-style-type: none"> Located in neighbouring garden, outside proposed development boundary. Growing in rockery area, at level approximately 1m higher than site. Heavy ivy to upper crown significantly impedes inspection. Crown moderately biased south due to presence of neighbouring tree. 	<ul style="list-style-type: none"> Retain in context of proposed development. Protect RPA throughout development using Temporary Protective Fencing to form a CEZ. Construct proposed wall within RPA using a pier and beam design and construction in order to bridge over roots where possible. NB: The production of a specification for the design and construction of the wall should be conditioned to a planning approval. Sever ivy at base and at a height of 1.5m and remove section in between. 	20+	B1/2	235	8.64

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T16	Sycamore	21	620	N E S W	5 8 5 10	4-N&S 5	M	G	<ul style="list-style-type: none"> Located in neighbouring garden, outside proposed development boundary. Growing in rockery area at level approximately 1m higher than site. Moderately heavy ivy to upper crown significantly impedes inspection. 	<ul style="list-style-type: none"> Retain in context of proposed development. Protect RPA throughout development using Temporary Protective Fencing to form a CEZ. Construct proposed wall within RPA using a pier and beam design and construction in order to bridge over roots where possible. NB: The production of a specification for the design and construction of the wall should be conditioned to a planning approval. Sever ivy at base and at a height of 1.5m and remove section in between. 	20+	B1/2	174	7.44
G1	2no. Horse Chestnut, 1no. Copper Beech	≤ 22	≤ 830	N E S W	≤ 8 ≤ 8 ≤ 8 ≤ 10	3-NW ≥ 2	M	P	<ul style="list-style-type: none"> Moderately spaced group. Historic and severe fire damage to all three trees, which now have advanced stem decay, including evidence of white rots, brown rots, and saprophytic fungi. Exposed decay columns on all three stems to heights of up to 6m. Irreparable damage projected to result in short remaining life expectancies. 	<ul style="list-style-type: none"> Remove due to short projected life expectancies. 	<10	U	≤ 312	≤ 9.96
G2	10no. Plum, 1no. Apple	≤ 6	≤ 130	N E S W	≤ 2 ≤ 2 ≤ 2 ≤ 2	2-N ≥ 1	Y-EM	M/P	<ul style="list-style-type: none"> Very closely spaced group growing as an orchard. All with varying degrees of stem leans or stem curvature. 	<ul style="list-style-type: none"> Retain in context of proposed development. Protect RPAs throughout development using Temporary Protective Fencing to form a CEZ. 	10+	C1	≤ 8	≤ 1.56
G3	4no. Purple Plum	≤ 9	≤ 490	N E S W	≤ 4.5 ≤ 4.5 ≤ 4.5 ≤ 4.5	2-W ≥ 2	M	G	<ul style="list-style-type: none"> Closely spaced linear group growing in neighbouring garden, outside proposed development boundary. Ivy on stems has been severed and is dead. 	<ul style="list-style-type: none"> Retain in context of proposed development. Protect RPAs throughout development using Temporary Protective Fencing to form a CEZ. 	10+	C1	≤ 109	≤ 5.88
G4	Pine, Cypress, Cedar, Monkey Puzzle, Beech	≤ 24	≤ 750	N E S W	≤ 12 ≤ 12 ≤ 12 ≤ 12	1 ≥ 1	EM-M	G	<ul style="list-style-type: none"> Growing in neighbouring garden, outside proposed development boundary. Moderately spaced roughly linear group of mixed conifers growing in rockery area at level approximately 2m higher than site. 	<ul style="list-style-type: none"> Growing outside proposed development area and not projected to be impacted. 	40+	A2	≤ 254	≤ 9
H1	Thuja	≤ 10	≤ 200#	≤ 4 wide	N/A 0	SM	G	<ul style="list-style-type: none"> Unmanaged boundary hedge. Topped in past at various heights. 	<ul style="list-style-type: none"> Remove in context of site landscaping. 	10+	C2	N/A	≤ 2.4	
H2	Hawthorn	≤ 2	≤ 9x20 (ms)#	≤ wide	N/A 0	SM	G	<ul style="list-style-type: none"> Managed boundary hedge. Covered in ivy. 	<ul style="list-style-type: none"> Retain in context of proposed development. Ensure protection throughout development. 	10+	C2	N/A	≤ 0.72	

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H3	Leyland Cypress	≤ 1.5	≤ 50#	≤ 1 wide	N/A 0	Y	G	▪ Very young boundary hedge planted at road frontage.	▪ Remove in context of site landscaping.	10+	C2	N/A	≤ 0.6

BS5837:2012 Table 1 – Cascade Chart for Tree Quality Assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
<p>Category U</p> <p>Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years</p>	<ul style="list-style-type: none"> ▪ Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) ▪ Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline ▪ Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <p><i>Note: Category U trees can have existing or potential conservation value which it might be desirable to preserve; see BS5837:2012 paragraph 4.5.7.</i></p>			Red
1. Mainly arboricultural qualities		2. Mainly landscape qualities	3. Mainly cultural values, including conservation	
Trees to be considered for retention				
<p>Category A</p> <p>Trees of high quality with an estimated remaining life expectancy of at least 40 years</p>	<p>Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)</p>	<p>Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features</p>	<p>Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)</p>	Green
<p>Category B</p> <p>Those of moderate quality and value: those in such a condition as to make a significant contribution. A minimum of 20 years is suggested.</p>	<p>Trees that might be included in the high category, but are downgraded because of impaired condition. Examples include the presence of remediable defects including unsympathetic past management and minor storm damage</p>	<p>Trees present in numbers, usually as groups or woodlands, so they form distinct landscape features which attract a higher collective rating than they might as individuals. But which are not, individually, essential components of formal or semi-formal arboricultural features. For example, trees of moderate quality within an avenue that includes better, A category specimens. Or trees which are internal to the site, therefore individually having little visual impact on the wider locality</p>	<p>Trees with clearly identifiable conservation or other cultural benefits</p>	Blue
<p>Category C</p> <p>Those trees 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 150 mm</p>	<p>Trees not qualifying in higher categories</p>	<p>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</p>	<p>Trees with very limited conservation or other cultural benefits</p>	Grey
	<p>Note – Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation</p>			

DISCLAIMER

Survey Limitations: Unless otherwise stated all trees are surveyed from ground level using non-invasive techniques. The disclosure of hidden crown and stem defects, in particular where they may be above a reachable height or where trees are ivy clad or in areas of ground vegetation, cannot therefore be expected. All obvious defects, however, are reported. Detailed tree safety appraisals are only carried out under specific written instructions. Comments upon evident tree safety relate to the condition of said tree at the time of the survey only.

Unless otherwise stated all trees should be re-inspected annually in order to appraise their on-going mechanical integrity and physiological condition. It should, however, be recognised that tree condition is subject to change, for example due to the effects of disease, decay, high winds, development works, etc. Changes in land use or site conditions (e.g. development that increases access frequency) and the occurrence of severe weather incidents are also significant considerations with regards tree structural integrity and trees should therefore be re-assessed in the context of such changes and/or incidents and inspected at intervals relative to identified and varying site conditions and associated risks.

Where trees are located wholly or partially on neighbouring private third-party land then said land is not accessed and our inspection is therefore restricted to what can reasonably be seen from within the site. Stem diameters of trees located on such land are estimated. Any subsequent comments and judgments made in respect of such trees are based on these restrictions and are our preliminary opinion only. Recommendations for works to neighbouring third-party trees are only made where a potentially unacceptable risk to persons and/or property has been identified during our survey. Where significant structural defects of third-party trees are identified and associated management works are considered essential to negate any risk of harm and/or damage then we will first attempt to inform the site occupier of the issues and, if not possible, then inform the relevant Council. Where a more detailed assessment is considered necessary then appropriate recommendations are set out in the Tree Survey Schedule.

Where tree stem locations are not included on the plan(s) provided then they are plotted at the time of the survey using, where appropriate and/or practicable, a combination of measurement triangulation and GPS co-ordination. Where this is not possible then locations are estimated. Restrictions in these respects are detailed in the report.

The tree survey and any report information provided is intended as a guide to identify key tree related constraints to site development only. As such, the potential influence of trees upon existing or proposed buildings or other structures resulting from the effects of their roots abstracting water from shrinkable load-bearing soils is not considered herein. The tree survey information in its current form should not therefore be considered sufficient to determine appropriate foundation depths for new buildings. Accordingly, an updated survey, with reference to the current NHBC Standards Chapter 4.2 - Building Near Trees, must therefore be prepared for the specific purpose of informing suitable foundation depths subsequent to planning approval being granted. The advice of a structural engineer must also be sought with regard to appropriate foundation depths for new buildings.

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Statutory Tree Protection: It is the client's responsibility to check for the presence of any statutory tree protection measures, such as the site's location within a Conservation Area and/or the presence of any Tree Preservation Orders, directly with the applicable Council's planning department prior to scheduling or carrying out any tree works. In turn, it is also the client's responsibility to check for the need for a felling licence with the Forestry Commission prior to scheduling or carrying out any tree works. Bowland Tree Consultancy Ltd cannot be held responsible for any decisions made by the client to prune or remove trees where any such statutory protection exists.

- TEMPORARY PROTECTIVE FENCING SPECIFICATION -

Construction Exclusion Zones (CEZs), enclosed by **Temporary Protective Fencing**, as detailed below and to be agreed with the Local Planning Authority (LPA), shall:

1. be retained in place throughout the development process, as specified in the 'Temporary Protective Fencing Construction' section below and detailed in BS5837:2012 Figure 2 (overleaf);
 2. be sited in the area(s) defined by the Root Protection Areas or, if applicable, the Construction Exclusion Zones, as detailed on the associated Tree Plan;
 3. be erected prior to any construction, demolition or excavation works and remain in place for the duration of the project;
 4. preclude any delivery of site accommodation and/or materials and/or plant machinery;
 5. preclude all construction related activity, with the sole exception of specified arboricultural works and any other works to be carried out under supervision that have been agreed by all parties; and
 6. preclude the storage of all development related materials and substances including fuels, oils, additives, cement and/or any other deleterious substance.
- Any incursion into CEZs must be by prior arrangement, following consultation with the LPA.

Temporary Protective Fencing Construction

1. Temporary protective fencing panels shall be weldmesh "Heras" panels of at least 2.0 metres in height.
2. The panels shall butt together and be securely fixed to a scaffold framework, as per 3 to 5 below.
3. The scaffold framework shall comprise of upright poles of at least 3.0 metres in length driven no less than 0.6 metres into the ground at maximum 3.0 metre centres with horizontal and diagonal poles fixed to the uprights, as per 4 to 5 below.
4. The two horizontal rail poles shall be attached to the uprights at heights of 0.6 and 1.8 metres with 3 no. clamps to each joint.
5. The diagonal scaffold pole struts be clamped to the top rail of the scaffold framework at a 45° angle and extend back into the CEZ and clamped to a 0.7 metre length of scaffold tube that shall be driven no less than 0.5m into the ground.
6. No fixing shall be made to any tree and all possible precautions shall be taken to prevent damage to tree roots when locating posts.
7. A 600mm x 300mm warning sign reading "TREE PROTECTION AREA KEEP OUT" (see Figure 1, below) shall be fixed to every 10.0 metre length of protective fencing.
8. On completion and prior to any demolition or construction works, site preparation, excavation or delivery of plant and materials, the LPA shall inspect and approve the Temporary Protective Fencing.

Figure 1: CEZ Warning Sign

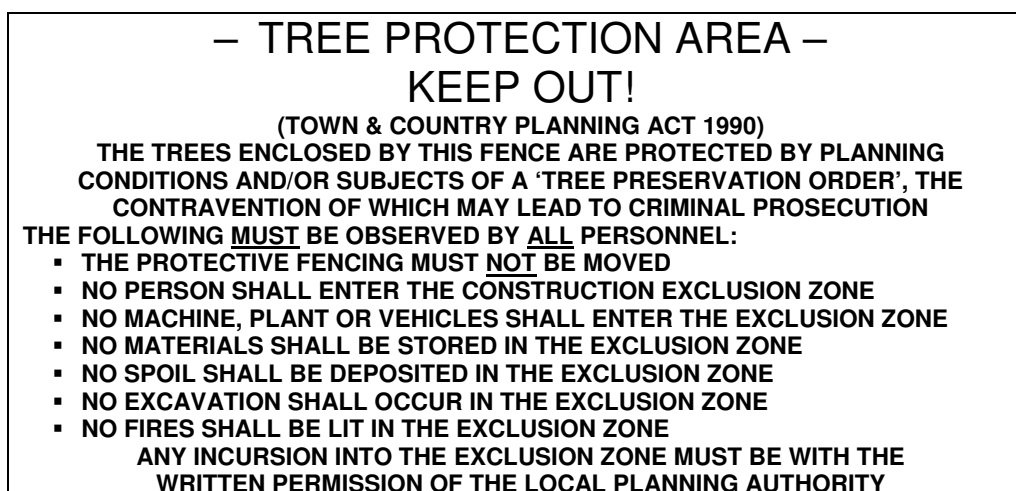
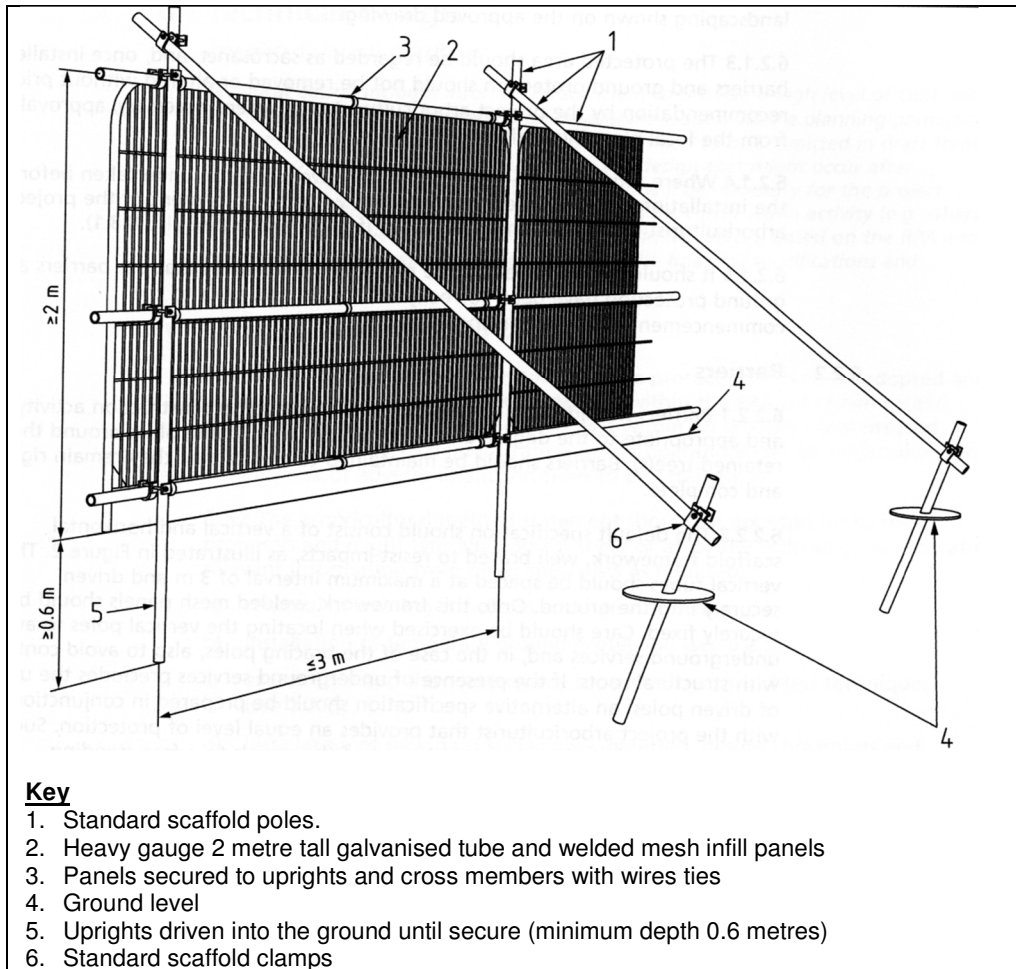


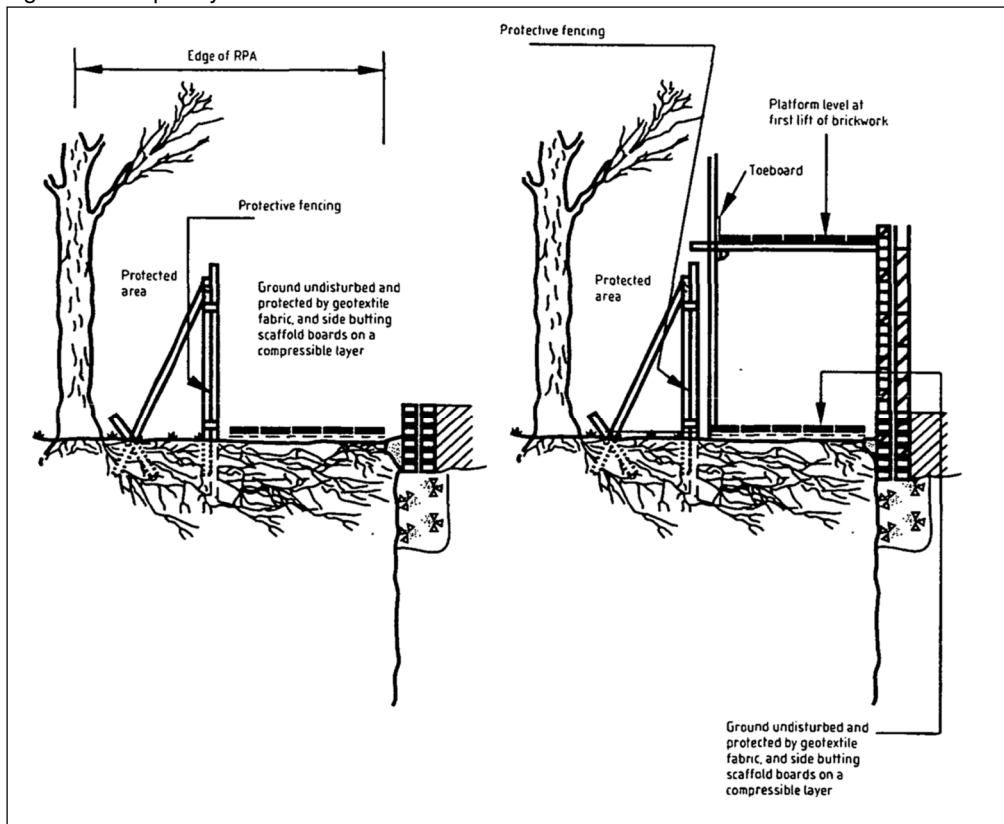
Figure 2: BS5837:2012 Default specification for protective barrier



Temporary Ground Protection

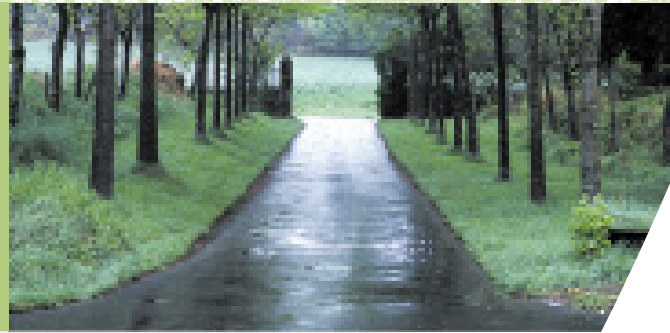
1. Any necessary Temporary Ground Protection areas shall conform to Figure 3, below, unless otherwise agreed with the LPA.
2. The Ground Protection Area shall be left undisturbed and covered by a semi-permeable geotextile membrane which shall, in turn, be covered by a compressible layer consisting of a material such as woodchip.
3. Side-butting scaffold boards shall then be fitted to cover the Ground Protection Area.
4. On completion of installation, and prior to any demolition or construction works, site preparation, excavation or delivery of plant and materials, the Consulting Arboriculturist or the LPA Tree Officer, as agreed, shall inspect the Temporary Ground Protection.
5. The Temporary Ground Protection shall remain in place until completion of the project and only removed following receipt of written permission from the LPA.

Figure 3: Temporary Ground Protection – Recommended Construction





CellWeb TRP®



Tree Root Protection Guaranteed

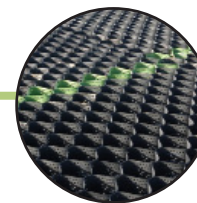
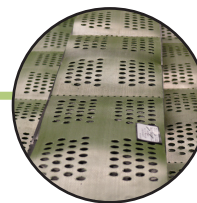


Geosynthetics

www.geosyn.co.uk

CellWeb TRP[®] System

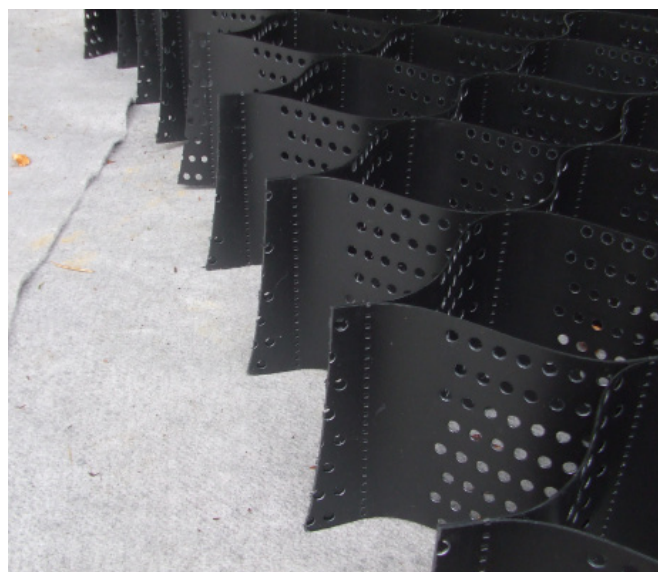
Tree Root Protection System



The Consequences Of Tree Root Damage During Construction

It is an offence to cut down, lop, uproot, top, wilfully damage or destroy a protected tree without authorisation. Trees can be protected under the Town and Country Planning Act 1990 and the Town and Country Planning (Trees) Regulations 1999. Trees are protected when they are the subject of Tree Preservation Orders (T.P.O) or within Conservation Areas, subject to certain exemptions. Retention and protection of trees on development sites is also secured through the use of planning conditions.

On a construction site all trees with a Tree Preservation Orders need to be managed in accordance with BS5837 2012 (Trees in relation to construction); failure to comply with these orders can be a costly affair as many parties have discovered.



Fishponds, Ketterton

There are two offences which apply equally to trees protected by Tree Preservation Orders and those within Conservation Areas:

- Firstly, anyone who cuts down, uproots or wilfully destroys a tree, or who lops, tops or wilfully damages it in a way that is likely to destroy it is liable, if convicted in the Magistrates Court, to pay a fine of up to £20,000. If the person is committed for trial in the Crown Court, they are liable on conviction to an unlimited fine. The Courts have held that it is not necessary for a tree to be obliterated for it to be “destroyed” for the purposes of the legislation. It is sufficient for the tree to have been rendered useless as an amenity.
- Secondly, anyone who carries out works on a tree that are not likely to destroy it is liable, if convicted in the Magistrates Court, to a fine of up to £2,500. In addition to directly carrying out unauthorised works on protected trees, it is an offence to cause or permit such works.

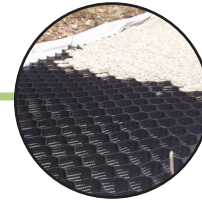
Developers and building contractors are often completely unaware that ‘compaction of soils within the Root Protection Area (RPA)’ constitutes wilful damage to the tree. When vehicular or pedestrian access within the RPA is necessary, either for the construction operation or final site access, the effects of this activity must be addressed and the ground must be protected. When tracked or wheeled traffic movements are involved, the ground protection system should be designed by an engineer and take into account the loading involved.



Shelton Road, Shewsbury

The Solution:

Geosynthetics CellWeb TRP® System



The Solution According to BS 5837:2012

“Appropriate sub-base options for new hard surfacing include three-dimensional cellular confinement systems

(BS 5837 2012 section 7.4.2 Note 1)

The CellWeb TRP® Solution

CellWeb TRP® is the market leader in the United Kingdom and Ireland for tree root protection. CellWeb TRP® cellular confinement system protects tree roots from the damaging effects of compaction and desiccation, while creating a stable, load bearing surface for vehicular traffic. CellWeb TRP® complies with BS 5837:2012 and APN 12. It provides a no-dig solution, is tried and tested having been used successfully since 1998. It is the only tree root protection system which has been independently tested and it is the only tree root protection system which is guaranteed for 20 years. See page 6 for the full terms and conditions of the guarantee.



Fishponds, Ketton

Field Trials

Geosynthetics Limited are the only company in the UK and Ireland to carry out live, completely independent field tests on the performance of a 3 dimensional cellular confinement system when used in a no-dig tree root protection system application. The results prove that CellWeb TRP® significantly reduces the compaction of sub-soils within the root growth limiting parameters established by K D Coder, 'Soil damage from compaction'. University of Georgia. July 2000. A copy of the report is available upon request.

CellWeb TRP® Product Guarantee

Geosynthetics Limited prides itself on a providing a reliable, consistent service; including technical advice, on site support and installation guidance. Geosynthetics Limited provides a 20 year guarantee for the CellWeb TRP® tree root protection system. This guarantee gives the client, the tree officer and arboricultural consultant the confidence that the designed system will perform as intended without damaging the health of the tree.

See page 6 for the full terms and conditions of the guarantee.

CellWeb TRP® System

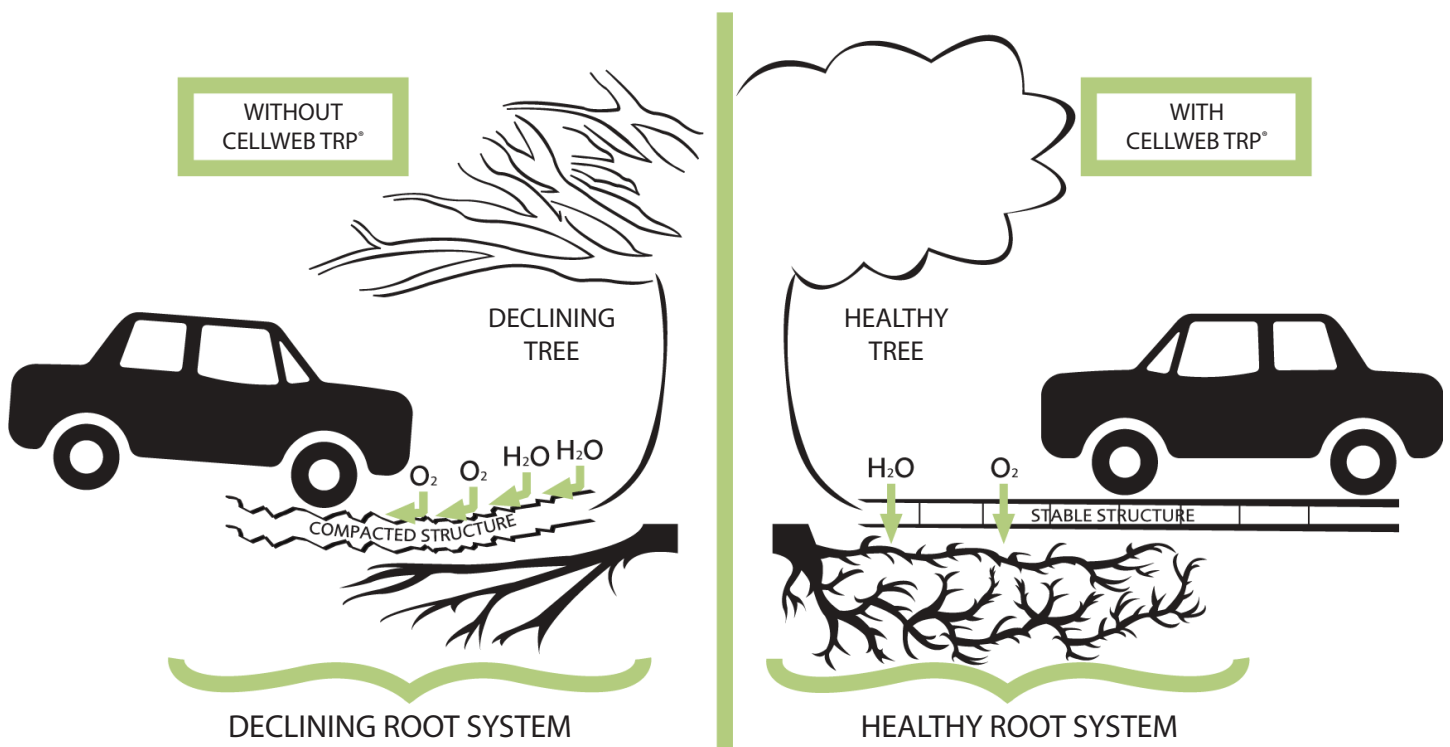


How the System Works

How CellWeb TRP® Works

CellWeb TRP® is a cellular confinement system that confines aggregate materials and makes them stronger, thus increasing the bearing capacity of the sub base materials. Research shows that CellWeb TRP® acts as a stiff raft to distribute wheel loads and reduce their magnitude at the base of the construction, thus maintaining the soil bulk density at levels that are suitable for tree root growth.

CellWeb TRP® is used around the world to provide cost effective hard surface construction over tree roots and is the system of choice for Tree Officers and Arboriculturists. For more information on this subject see CellWeb TRP® Fact Sheet No 1.

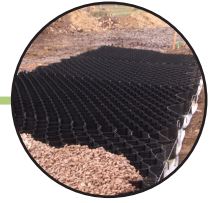


Water and Oxygen Transfer Through the CellWeb TRP® System

The CellWeb TRP® system is constructed using open aggregate infill and CellWeb TRP® has perforated cell walls. The pore spaces between the aggregate particles are greater than 0.1mm in diameter. This open structure is far more permeable than typical soils and allows the free movement of water and oxygen so that supplies to trees are maintained.

For more information on this subject see CellWeb TRP® Fact Sheet No 2.

CellWeb TRP[®] and Pollution



How CellWeb TRP[®] Deals With Catastrophic Oil Spills

How CellWeb TRP[®] Deals With Pollution

Where possible a permeable pavement system should always be constructed above the CellWeb TRP[®] system. The effective removal of pollution from runoff by permeable pavements is well known. Worldwide research has shown runoff that has passed through permeable pavements has low concentrations of pollutants.

Small spills of oil will be dealt with within the joints between the paving blocks and in the aggregate used within the system. However, large catastrophic spills are a different matter.

For more information on this subject see CellWeb TRP[®] Fact Sheet No 3.



Castle Gardens



Ambleside Lake District



Harcourt Aboretum

The Treetex[®] geotextile used in the CellWeb TRP[®] system has two functions. Treetex[®] separates the sub base aggregates from the soil beneath and it traps oil within its structure and allows it to degrade aerobically within the pavement construction. The structure, thickness and weight of Treetex[®] creates the perfect environment for this to happen. Most importantly tests prove that Treetex[®] will absorb 1.7 litres of oil per square metre, this is 4 times more effective than standard geotextiles.

Treetex[®] is an intrinsic part of the CellWeb TRP[®] system; and must be in conjunction with the CellWeb TRP[®] in order to guarantee the success of the system.

Please see page 6 for full details of the guarantee.

Geosynthetics CellWeb TRP® System:

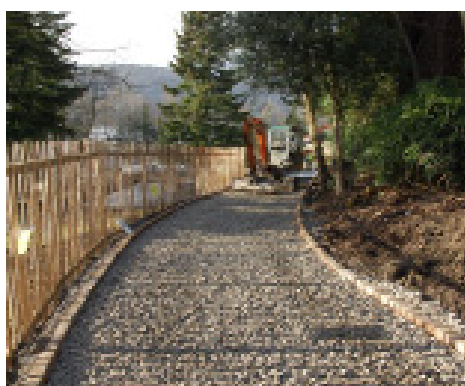
A Proven No Dig Solution



Advice, Design and Product Selection

Geosynthetics Limited has been supplying the CellWeb TRP® system since 1998 and has vast experience in its application. No two contracts are the same and we understand the factors that need to be taken into account to specify the correct CellWeb TRP® product.

We provide a free consultation, design and advisory service to find the solution that is most cost effective and beneficial for your site. Our service includes product selection, engineering calculations, CAD drawings and full instructions to help you from project conception to completion.



Fallbarrow Park, Windermere:
Prior to CellWeb TRP® Installation



Fallbarrow Park, Windermere:
CellWeb TRP® Installation



Fallbarrow Park, Windermere:
Completed CellWeb TRP® Installation

Final Surfacing

The benefits of the CellWeb TRP® system can only be maintained if a suitably porous final surface is selected. An ideal surfacing is the Golpla grass reinforcement and gravel retention system, a visually attractive surface that has the advantage of being fully porous. Alternatives include block paviors, porous asphalts and loose or bonded gravel.

Always Use CellWeb TRP®

The CellWeb TRP® system is the only research backed system of its kind in the UK with a 100% success rate. CellWeb TRP® has been specifically developed for the Tree Root Protection market. The system is supported by 15 years of data and thousands of installations making it the system of choice for the majority of Tree Officers and Arboriculturists in the UK.

CellWeb TRP® is uniquely identifiable. It is manufactured with a bright green panel on each side. When installed the green panels are laid adjacent, creating a green band across the construction.



Woodcock Hall, Yorkshire

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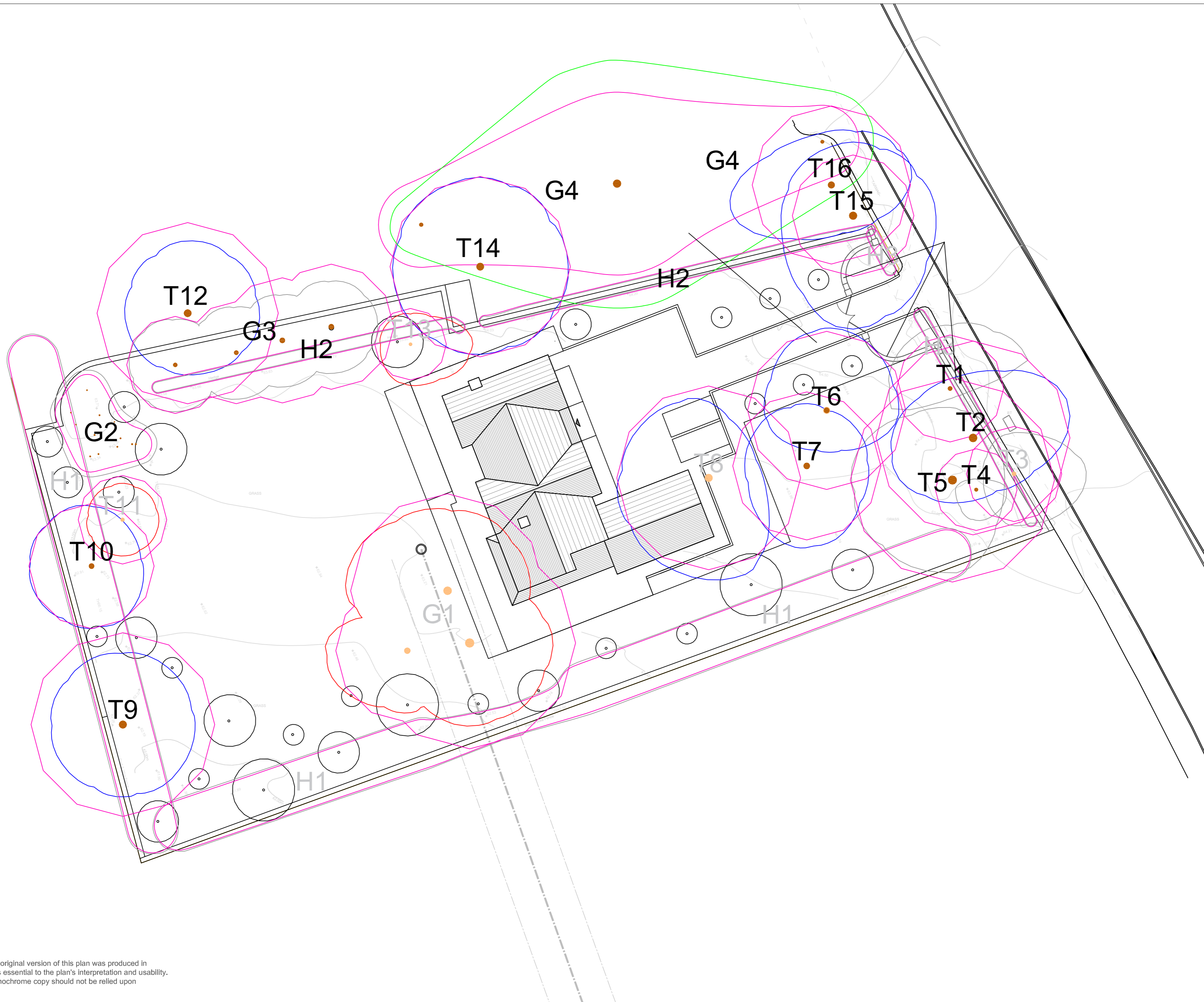


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KEY

T = Individual Tree
 G = Group of Trees
 H = Hedge

Please refer to associated Tree Survey Schedule for specific details in respect of items below:

Tree Categorisations:

Those to be Considered for Retention:

- Category 'A' Tree/Group/Hedge
Those of a High Quality with an Estimated Remaining Life Expectancy of at Least 40 Years
- Category 'B' Tree/Group/Hedge
Those of a Moderate Quality with an Estimated Remaining Life Expectancy of at Least 20 Years
- Category 'C' Tree/Group/Hedge
Those of Low Quality with an Estimated Remaining Life Expectancy of at Least 10 Years, or Young Trees

Those Considered Unsuitable for Retention:

- Category 'U' Tree/Group/Hedge
Those in Such a Condition that they Cannot Realistically be Retained as Living Trees in the Context of the Current Land Use for Longer Than 10 Years

Note 1: The stem locations of trees T12, T13, T14 and T16 and groups G3 and G4 were not included on the topographical site plan provided and were subsequently plotted by the arboricultural surveyor at the time of the survey using GPS siting and, where possible, measurement from site features. As such, the locations of these trees cannot therefore be considered to be exact.

Note 2: Trees with their numbers detailed in grey are proposed for removal in the context of the proposed development.

Root Protection Areas (RPAs):

- RPAs
Area(s) of Ground Around Trees that Should be Protected Throughout Development Works with Protective Fencing to form a Construction Exclusion Zone - see appended Temporary Protective Fencing Specification

Project:
 LAND SOUTH OF
 39 CLITHEROE ROAD
 WHALLEY
 LANCASHIRE
 BB7 9AD

Clients:
 MR & MRS BENTLEY

Title:
TREE IMPACT PLAN
 in Relation to Proposed Construction of Detached Two-Storey Residential Property

Scale: 1:250@A2
 Date: July 2019
 Drawn by: PH
 Checked by: ET

Bowland Tree Consultancy Ltd
 e: info@bowlandtreeconsultancy.co.uk
 t: 01772 437150

Ref: BTC1823-TIP Rev:

Important: The original version of this plan was produced in colour, which is essential to the plan's interpretation and usability. As such, a monochrome copy should not be relied upon