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ARBORICULTURAL

Arboricultural Implications Assessment and Method Statement for Land adjacent to Mistletoe Farm, Horsemere Green Lane, Climping

Arboricultural Implications Assessment and Method Statement

Land adjacent to Mistletoe Farm, Horsemere Green Lane, Climping

Produced by:

Barrie Draper BSc (Hons) Arb TechCert(ArborA) CertArb(RFS)

Arboricultural Consultant

Report Ref: **211423 - AIA 2**

Report Date: **29 November 2021**

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1 INTRODUCTION

- 1.1 **Instruction:** I am instructed by Vivid Design Studio to report on trees that could be affected by a development at Land adjacent to Mistletoe Farm, Horsemere Green Lane, Climping and prepare an Arboricultural Implications Assessment (AIA) and Arboricultural Method Statement (AMS) to assist with the discharge of a tree related planning condition attached to a recently issued planning consent.
- 1.2 **Document disclosure:** Initially, I was provided with a topographical survey (drawing reference 'Site Plan'). This showed the positions of the significant trees on or near the site, together with the existing buildings and other important features. Subsequently, I was supplied with a copy of a layout, (drawing reference '435358-201P [DRAINAGE LAYOUT]') showing a new site configuration, including drainage.
- 1.3 **Scope of report:** All my tree observations are of a preliminary nature, with the tree survey carried out from ground level without any investigations using invasive or diagnostic equipment. I was not able to fully view all the trees detailed in this report from all directions, as some were located on adjacent private property. I have therefore confined observations of them to what was visible from within the site. I have not checked the accuracy of the positions of the trees shown on the provided plans and I have estimated all dimensions unless otherwise indicated.
- 1.4 **The Tree Protection Plan:** This is included in Appendix 1 and is a composite drawing derived from the information provided. It shows the existing landscape features (from the land survey) in pale grey superimposed over the new layout shown in dark grey. This allows the relationship between the two to be clearly seen and an appropriate analysis of the implications of the site changes to be undertaken. The Tree Protection Plan has also been annotated to show protection measures for the trees which could realistically be affected by the development. It shows any activities in Root Protection Areas (RPAs) and if any trees are to be removed, they are shown with a red dashed crown outline.
- 1.5 **Qualifications and experience:** This report is based on my site observations and I have come to my conclusions in the context of my experience as a former local government tree officer and a private practice arboricultural consultant. I have qualifications in both arboriculture and forestry and details of these, together with a career summary are provided in Appendix 7.

1.6 **Ecological issues and statutory tree protection:** Providing guidance on ecological issues is not within my sphere of expertise. However, trees and other vegetation can often provide nesting, roosting and feeding opportunities for protected species. Therefore, before any tree work proceeds on site, I advise that appropriate advice is sought to see whether the trees to be removed are being utilised by any protected species. At the time of writing, I have made no checks to ascertain whether any of the trees discussed are covered by tree preservation orders, or if the site is located within a conservation area. Therefore, any person intending to carry out any operations involving trees before this document is approved by the council (see below) should consult the council before any such works are undertaken.

1.7 **Relevant background information:** As discussed, this report relates to an extant planning consent for the site (Council Ref: 'CM/18/21/PL'). A planning condition was attached to the permission relating to trees, as follows:

- 11 Development shall not commence until the applicant has submitted the following reports and plans from an Arboricultural Consultant; to be approved in writing by the Local Planning Authority: Arboricultural Impact Assessment (AIA) which must be inclusive of; a 'Tree Survey Schedule', a 'Root Protection Area (RPA) Schedule' and a 'Tree Constraints Plan' - with the trees accurately plotted on same.*

In the event that a RPA of any tree which is proposed for retention overlaps the development then BS5837:2012 requires that the Detailed Planning Application is accompanied by an Arboricultural Method Statement (AMS) and also most importantly a Tree Protection Plan - to both describe and illustrate the mitigation measures which are to be employed to ensure that the trees survive without detriment to their vigour and vitality and are given adequate protection both above and below ground.

Reasons: To comply with BS5837 and to ensure that retained trees are afforded due respect and appropriate levels of protection such that their ongoing health and vitality is not compromised, and they can continue to enhance the landscape and amenity of the area.

This report is presented to the council in pursuance of the discharge of this tree related planning condition.

2 SITE VISIT, DESCRIPTIONS, OBSERVATIONS AND SURVEY METHODOLOGY

- 2.1 **Site visit and description:** I visited the site on 3 November 2021 to gather my tree data. The site is located in Horsemere Green Lane, which is situated in the village of Climping. The site is on the southern side of the road and consists of a narrow and rectangular shaped piece of land (which is currently under grass), with a disused shed at one end. A small number of trees are located on or close to the site boundaries.
- 2.2 **Description of consented development:** This planning consent is for the construction of a single new 3 bed dwelling on the site.
- 2.3 **Soil assessment:** British Standard (BS) 5837: 2012 Trees in relation to design, demolition and construction – Recommendations advocates that a soil assessment should be carried out to inform decisions relating to Root Protection Areas (RPAs), tree protection, new planting and foundation design. I have consulted the British Geological Survey (BGS) website and their Geology of Britain viewer and this advises that the bedrock geology for the site is Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation and Portsdown Chalk Formation (undifferentiated) - Chalk. I did not undertake any excavations on site to confirm this and a full geotechnical site investigation may need to be undertaken to provide a more in-depth level of information regarding soil type for the site.
- 2.4 **Tree survey methodology:** My inspection of the trees was visual and did not involve any climbing or exploratory investigations. During my visit, I identified individual trees and obvious groups where this was appropriate and I assigned an identification number to each, as shown on the plan in Appendix 1. I then collected the tree data included in Appendix 2 and placed the vegetation in one of four categories (U, A, B or C), as set out in British Standard (BS) 5837: 2012. I have included the BS categorisations in Appendix 6 for easy reference. Where of relevance, I also estimated the crown spreads for each tree/group at the appropriate cardinal compass points and this information is also shown in the tree schedule in Appendix 2. Although this document is not a full and detailed report on tree health and safety, any significant visible structural defects or physiological conditions identified, together with preliminary tree works, are also noted in the appropriate columns in the tree schedule. However, this report is not a tree condition survey and a full post development tree inspection is recommended to establish that the trees retained pose acceptable levels of risk once the development has been completed.

2.5 **Data interpretation:** The Root Protection Area (RPA) figures are included in Appendix 2. As set out in paragraphs 4.6.2 and 4.6.3 of the BS, the RPAs may have been adjusted as a matter of arboricultural judgement to indicate the estimated likely position of important tree roots. These modified (or unmodified) RPAs dictate the location of the tree protection barriers (which encompass the Construction Exclusion Zones - CEZs) and also determine the position of any ground protection measures. Tree protection details are shown on the plan included in Appendix 1. Where there is a need for incursions into RPAs, an assessment of the implications of these activities is set out in Section 3 (Arboricultural Implications Assessment) of this report. Where appropriate, details of suitable work methodologies to protect trees and also mitigate any impact are set out in Section 5 (Arboricultural Method Statement).

3 ARBORICULTURAL IMPLICATIONS ASSESSMENT

- 3.1 **Introduction to the implications of the development on trees:** BS 5837: 2012 sets out in some detail how trees on development sites should be managed. It is usually accepted amongst arboriculturists that Category A (high quality) and Category B (moderate quality) trees are potential constraints on any development proposal, whereas vegetation belonging to Category C (low quality) is considered to be generally less important. Category U trees/hedges are in such poor condition that they are considered unsuitable for retention. This is because they cannot realistically be retained as living entities in respect of the current land use for longer than 10 years. Therefore, these can be effectively discounted in the context of a planning application. On this site a total of SIX individual trees and groups were recorded during the tree survey and were assigned to the BS 5837 (2012) categories, as set out in Table 1 below:

Category A and B trees	Category C trees	Category U trees
A total of TWO trees/groups (T2 and G3) were rated Category B	A total of THREE trees/groups (G4, G5 and T6) were rated Category C	A total of ONE tree (T1) was rated Category U

Table 1: Tree numbers and BS categories

No Category A trees were recorded during my survey and I have therefore focussed on the implications of the development on the Category B and C trees on or near the site. Of the total of SIX trees and groups surveyed, none are scheduled to be removed to directly facilitate this development, although one tree is indicated for removal for management reasons. However, two trees/groups will have activities arising from the development occurring within their RPAs. I have summarised the development related implications on trees in Table 2 below and set out the site tree issues in more detail in the following paragraphs.

Trees to be removed for development		Activities in RPAs arising from the development	
Category A and B	Category C	Category A and B	Category C
n/a	n/a	T2 and G3 (new surfacing and drainage)	G5 and T6 (ground protection)

Table 2: Trees lost and activities in RPAs arising from the development

3.2 Direct implications of the development - Tree retention and tree loss

3.2.1 **BS Category B and C trees to be retained (trees of moderate and low quality):** All the Category B and C trees surveyed will be retained and protected in accordance with the guidance set out in BS 5837 (2012). Consequently, no trees will need to be removed to facilitate this development

3.3 Additional implications arising from the development

3.3.1 **Trees and activities within RPAs:** TWO trees/groups will have activities arising from the development occurring within their RPAs. My comments on these issues are as follows:

- **New 'low invasive' surfacing:** This will be installed within the RPAs of tree T2 and a tree within group G3. After careful consideration and discussions within the design team, it has been agreed that the sub base for the new hard surfacing will be a cellular confinement system. This will negate the need for significant excavation and excessive disturbance within the RPAs of these nearby trees. The use of cellular confinement systems is supported in BS 5837 (2012), together with bespoke suspended engineered solutions (paragraph 7.4.2.7). The surfacing will be installed after the drainage (see below), but before any other clearance or construction activities occur on site and will act as ground protection throughout the construction phase. Consequently, the protective barrier positions shown on the plan included in Appendix 1 are set back from

the full BS protection distances to allow space for this to be installed. I have set out some guidance in section 3.3.2 of this report detailing how this work should proceed in order to reduce the risk of implications for these trees. Provided the work proceeds in accordance with this methodology, then I feel that the risk of any significant tree implications are likely to be relatively low.

- **New drainage:** The new foul and surface water drainage is shown on the plan included in Appendix 1. Following extensive discussions with the project engineers, the positions of these service runs have been optimised so as to minimise implications for these nearby trees. Nonetheless, the pipes to connect into the existing foul sewer and watercourse (for surface water runoff) just clip the edge of the RPAs of tree T2 and group G3. However, provided the works are carried out with care using a small excavator on rubber tracks, then I feel that these RPA incursions are sufficiently small and are unlikely to have any significant implications for the health and wellbeing of the trees indicated.
- **Ground protection:** Ground protection around G5 and T6 will be required to allow sufficient room for the positioning of scaffolding and to provide suitable space for the movement of materials and personnel around the nearby new building during its construction, whilst also allowing room for the removal of the existing structure close to T6. The area of the RPAs that is outside of the barriers will be covered in ground protection and this will be installed after the erection of the barriers, but before any clearance or construction work starts on site. The provision of ground protection to allow pedestrian access in RPAs is supported in paragraph 6.2.3 of BS 5837 (2012) and I do not perceive this to be a particular problem provided it is implemented correctly and remains in situ during the construction phase of the project.

3.4 Additional site tree issues

- 3.4.1 **BS Category U trees normally removed for management reasons:** Category U trees are in such poor condition that they are considered unsuitable for retention. This is because they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years. Therefore, these types of trees can be effectively discounted in the context of the planning process. On this site, I have assessed tree T1 as falling into Category U because of its canopy condition and decay ingress into one of its stems which will overhang the new access drive into the site. Consequently, I have indicated this tree for removal for management reasons.

3.4.2 **Tree protection during development:** An Arboricultural Method Statement is included in Section 5 and it details the various issues associated with successful tree protection in a development context on this site.

4 SUMMARY OF THE IMPLICATIONS OF THE DEVELOPMENT ON TREES

- 4.1 **Summary:** Of the total of SIX trees and groups surveyed, none are scheduled to be removed to directly facilitate this development, although one tree is indicated for removal for management reasons. However, two trees/groups will have activities arising from the development occurring within their RPAs. Provided the tree protection measures set out in this report are realised and care is taken during the sensitive works within tree RPAs, then the site layout is acceptable from an arboricultural perspective and the risk of implications for retained trees are likely to be low.

5 ARBORICULTURAL METHOD STATEMENT

5.1 Tree protection issues

5.1.1 **Tree Protection Plan (TPP):** The plan in Appendix 1 is illustrative, but is based on the layout drawings and topographical survey provided. Therefore, all scaled measurements should be checked against the original design documents. The attached plan and all other information in this report should only be used for dealing with the tree protection issues and all other uses are prohibited, unless authorised by ecourban ltd. All the existing trees will have been numbered, with any higher categories (A and B) highlighted in green and blue rectangles and any low categories (C and U) highlighted in grey and red respectively. The plan also shows the locations of the proposed protective measures, including areas where special care may be required. Additionally, any trees to be removed are indicated with a red dashed crown outline. The TPP is an important document and a copy of it should be kept on site for reference during the construction phase.

5.1.2 **Protective barriers:** The approximate location of the barriers is illustrated on the plan in Appendix 1 and information on barrier design based on BS 5837 (2012) guidance is included in Appendix 3. The protective barriers will be erected before any materials or machinery are brought onto the site, and before any clearance or construction activities occur. Once the protective barriers have been positioned, these will stay in situ for the duration of the construction, unless previously agreed with the arboricultural consultant or council's tree officer. There will be no access into the protected areas and the storage of excavated debris and building materials will be prohibited in RPAs, unless authorised by the arboricultural consultant, after discussion with the council's tree officer. No fires or fuel storage will be allowed within (or near to) protected areas under any circumstances.

5.1.3 **Ground protection measures:** Where the positioning of tree protection barriers is not feasible due to the need for construction access, then ground protection measures will be needed to safeguard RPAs. The position of ground protection is shown on the plan included in Appendix 1, with guidance for ground protection design included in Appendix 4 and an installation video for proprietary ground protection is available to view at <https://tinyurl.com/3nk2c3cw>. The ground protection will be installed before any materials or machinery are brought onto the site, and before any clearance or construction activities occur. Again, once the ground protection has been positioned, it will stay in situ for the duration of the construction phase, unless previously agreed with the project arboricultural consultant or council's tree officer.

5.2 Arboriculturally sensitive operations

5.2.1 **Activities within Root Protection Areas (RPAs):** Work within RPAs must be undertaken with care, as set out in the following text. Site personnel will be properly briefed before any activities start and all sensitive work will be inspected regularly during the course of operations.

5.2.2 **Installation of new surfacing:** Trees/groups T2 and G3 may be affected by the installation of new hard surfacing. I have shown the minimum extent of 'low invasive' type surfacing required to successfully retain these trees on the plan included in Appendix 1 and the extent of this is based on their BS derived RPAs. The cellular system will act as ground protection for the parts of the RPAs that are outside the protective barriers and so will need to be installed after the drainage, but before any other construction activity occurs on site. The use of a cellular confinement system is suggested in BS 5837 (2012) as one appropriate way to achieve hard surfacing over tree roots and the following guidance is based on this principle. However, before implementation the following specifications and guidance will need to be reviewed by an engineering specialist, to ensure that the final construction is appropriate from an engineering viewpoint and suitable for the purpose intended.

- **Installation:** An installation video for a proprietary cellular confinement system is available to view at <https://tinyurl.com/bbs7tsfs>. Generally, any required changes in topography will be accomplished by the use of fill materials rather than cutting into the existing site levels, which could have a significant impact on tree health. Suitable fill materials include uncompacted crushed stone or sharp sand. In this instance, the removal of the top layer of vegetation to a depth of 50mm (to provide a flat surface for the installation of the cellular sub base) is unlikely to encounter or damage any tree roots. Any additional excavation will need to be assessed by the arboriculturist, in consultation with the council's tree officer. However, in the event that roots may need to be cut, those smaller than 25mm diameter may be pruned back, preferably to a side junction, using a cutting tool such as bypass secateurs or handsaws. Roots larger than 25mm should only be severed following consultation with an arboriculturist, as they may be essential to the tree's health and stability.
- **Sub base and final wearing courses:** Once a level surface has been formed, the cellular system will be installed on top of the existing soil, with no compaction of its structure. The cell infill material will be crushed aggregate (typically 20-40mm, clean angular stone), with no fines, as per the manufacturer's specification. A temporary wearing

course of tarmac and/or aggregate, separated by a geotextile membrane is likely to be the most appropriate way of providing a suitable ground protection/working surface during the clearance and construction phase of the project. At the final stages of the construction, the temporary wearing course will be removed (under arboricultural supervision), and the final surfacing will be installed. Suitable final wearing courses include resin bound gravel, paving slabs, washed gravel or block pavements set on a sand base, although other surfacing may be appropriate after consultation with the project arboriculturist.

- **Edge retention:** The use of non-invasive ground contact structures (including proprietary edging products, gabions, wooden boards or railway sleepers) is suggested in BS 5837 (2012) as effective edge supports in RPAs, to be secured by metal rods, track or road pins or wooden pegs. This, or a similar approach (negating the need for excessive ground disturbance within RPAs) will be used to minimise adverse risk of impact on trees.

5.3 Additional tree-related issues

- 5.3.1 **Site supervision:** Site personnel will be properly briefed regarding the tree protection issues before any work starts, and the tree protection will be inspected periodically to ensure the retained trees are protected in accordance with this document and any conditions imposed by the council.
- 5.3.2 **Contractors car parking, site offices and welfare facilities:** Whilst it is possible to have site offices and welfare facilities within RPAs, care is needed in their positioning and also in the connection of water, electricity and drainage to service them. Therefore, these will generally be sited outside the tree RPAs, unless agreed previously with the council. Contractor's car parking facilities will also be located away from retained trees.
- 5.3.3 **Material storage areas and site compounds:** All construction material storage areas, cement silos or cement mixing areas, fuel storage points and compounds for machinery etc. will be outside protected areas, unless otherwise agreed with the council.
- 5.3.4 **Tree works:** Any tree pruning or tree removal operations are set out in the tree schedule included in Appendix 2. Additionally, those trees scheduled for removal are also shown on the Tree Protection Plan included in Appendix 1.

5.3.5 **Planning, communication and preliminary timing of events:** It is not unusual for the details of timing of operations that could impact on important trees to only be finalised once planning consent has been given. Site managers, clearance and construction teams and other important personnel are normally only appointed at this stage and it is these people who will be crucial in delivering the tree protection detailed in this report. My experience is that the pre commencement site meeting is critical in terms of avoiding damage to trees and this particular aspect, along with tree protection issues can be specifically referenced in a suitably worded planning condition imposed by the council. In the intervening time, I propose the following preliminary cascading timetable of events to help minimise the risk of impact on important trees. However, the following schedule may be modified at the pre-commencement meeting, subject to discussion with all parties and agreement with the council:

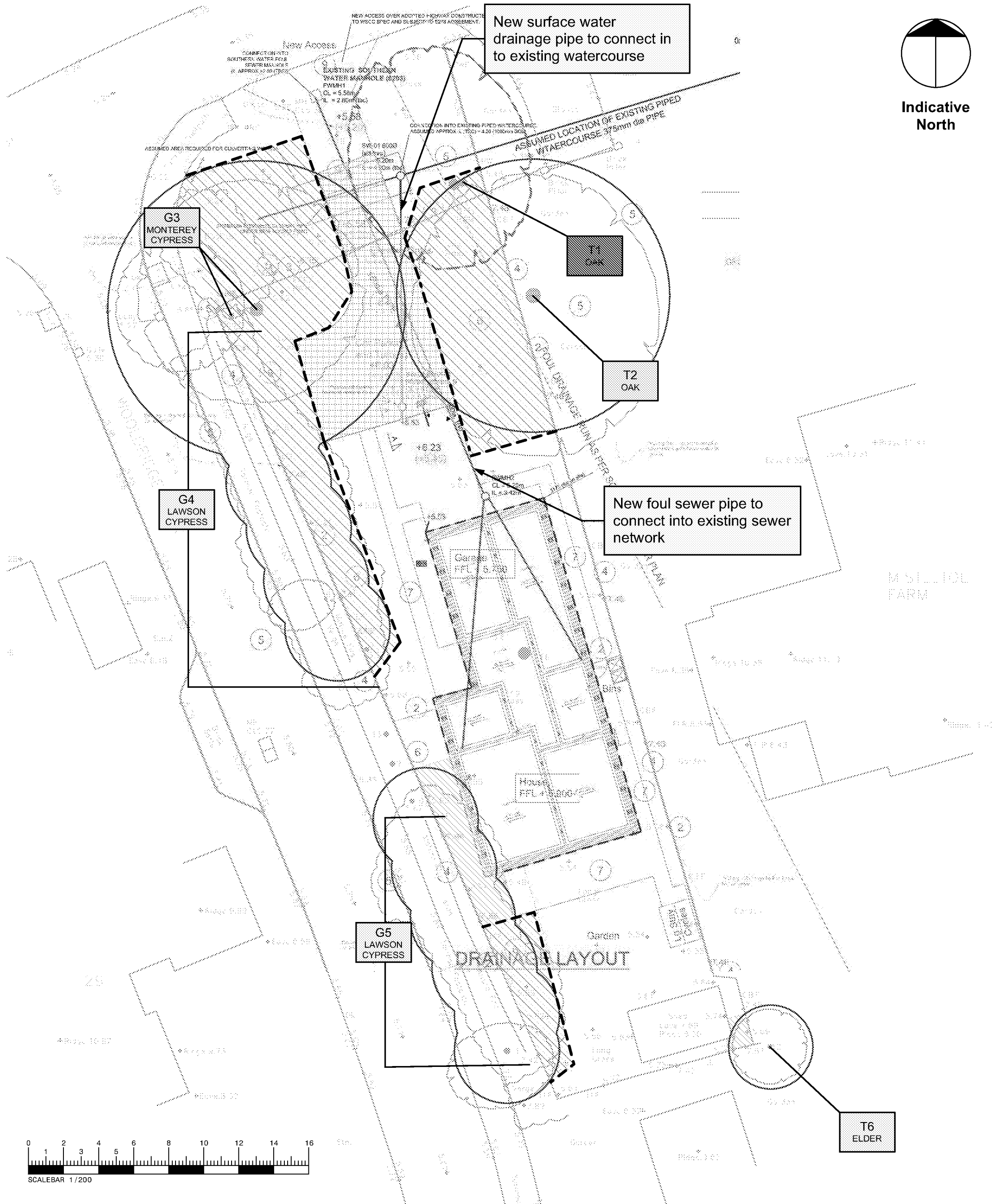
1. Pre-commencement site meeting
2. Extent of any arboricultural supervision agreed
3. Tree works undertaken
4. Protective barriers erected before any clearance or construction activities occur on site and notification to the council that this is in place
5. Ground protection installed before any clearance or construction activities occur on site and notification to the council that this is in place
6. Installation of new surfacing – Where this is to also act as ground protection, this must be installed before any clearance or construction activities occur on site
7. Tree protection only removed at the end of the construction phase when there is no longer any risk to trees

Barrie Draper BSc (Hons) Arb TechCert(ArborA) CertArb(RFS)
Arboricultural Consultant

Date: 29 November 2021

Appendix 1: Tree Protection Plan

1 A3 plan



urbanARBORICULTURAL

ECO 4 - TREE ISSUES FOR LAND ADJACENT TO MISTLETOE FARM, HORSEMERE GREEN LANE, CLIPPING

SCALE: 1:200 @ A3

COMPOSITE PLAN:
LAND SURVEY IN PALE GREY,
NEW LAYOUT DARK GREY

T1
Tree sp

BS Category B: Trees of moderate quality and value

T1
Tree sp

BS Category C: Trees of low quality and value

T1
Tree sp

BS Category U: Trees normally removed for arboricultural management reasons

Tree protection barriers with construction exclusion zone

Minimum extent of 'Low Invasive' type surfacing within RPAs but outside of tree protection barriers

RPA outside barriers requiring ground protection

Tree to be removed

Root Protection Areas (RPAs):
Below ground tree constraints for trees based on BS 5837 guidance

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Appendix 2: Tree Schedule and Inventory

Background fill colour represents BS 5837 (2012) categories: A Category trees have green backgrounds, B Category trees have light blue backgrounds, C Category trees have grey backgrounds and U Category trees have red backgrounds.

Tree No.	Species	Ht (m)	Single stem dia. at 1.4m (cm)	Est. Date	STEM DIAMETERS (MULTIPLE)								Branch spread (m)				Ht above ground (m)	Age class	Notes	Management proposals	BS cat.	RPA area (m²)	RPA radius (m)
					Multi stemmed trees with 1 - 5 stems (cm)					Multi stemmed trees with 1 - 5 stems combined (cm)	Multi stemmed trees > 5 stems												
					1	2	3	4	5		Main stem dia. (cm)	No. of stems	N	E	S	W							
All trees/ hedges																		Crown clean all trees. Where appropriate for construction access, crown lift trees by up to 4m over site					
T1	Oak	12	-	-	56	36	-	-	-	67	-	-	7	4	4	-	3	MA/ M	Twin stemmed, decay ingress western stem and canopy symptoms indicating declining vitality.	Fell.	U	200	8.0
T2	Oak	18	65	*	-	-	-	-	-	-	-	-	6	-	7	5	4	MA/ M	Offsite tree, no access to survey. Some canopy reduction work previously.		B1	191	7.8
G3	Monterey cypress	18	71	* Lgst	-	-	-	-	-	-	-	-	-	5	3	4	4	MA/ M	Some crown asymmetry and small diameter deadwood. Smallest tree unbalanced.		B1/ C1	228	8.5

Appendix 2: Tree Schedule and Inventory

Tree ID	Species	Ht. (m)	Single stem dia. at 1.4m (cm)	Est. Dia. @ base	STEM DIAMETERS (MULTIPLE)								Branch spread (m)				Ht. above ground (m)	App. chkr.	Notes	Management proposals	BS cat.	RPA area (m²)	RPA radius (m)
					Multi-stemmed trees with 1 - 5 stems (cm)					Multi-stemmed trees with 1 - 5 stems combined (cm)	Multi-stemmed trees >5 stems												
					1	2	3	4	5		Mean stem dia. (cm)	No. of stems	N	E	S	W							
G4	Leyland cypress	11	25	* Avg	-	-	-	-	-	-	-	-	1	2	1	-	3	Y/MA	Linear grouping of offsite trees, some declining. Unremarkable domestic conifer type planting.		C1/U	28	3.0
G5	Leyland cypress	12	25	* Avg	-	-	-	-	-	-	-	-	2	2	1	2	3	Y/MA	Linear grouping of offsite trees. Unremarkable domestic conifer type planting.		C1	28	3.0
T6	Elder	4	20	* at base	-	-	-	-	-	-	-	-	1	1	1	1	2	MA	Small offsite multi stemmed tree/shrub. No access to survey and restricted clear line of sight.		C1	18	2.4

Appendix 2: Tree Schedule and Inventory

Abbreviations:

Abbreviations	Meaning	Abbreviations	Meaning	Abbreviations	Meaning
T	Individual tree	M	Mature	>	More than
G	Groups of trees	MA	Maturing	<	Less than
H	Hedge	Y	Young	Lgst	Largest tree diameter within group
W	Woodland	RPA	Root Protection Area	Avg	Average tree diameter within group

Tree Schedule Notes:

Tree number	Assigned during the site visit and also referenced on the plan in Appendix 1.
Species	Common name and referenced to scientific name in the above list. Where I have some doubt over the actual tree species, the genus will have been noted followed by sp. Where trees are numerous and present in groups, not every individual species may have been noted.
Height	Measurement of total tree height using a laser hypsometer to nearest metre or where clear line of site is not possible then an estimate based on interpolation of heights of nearby measured trees.
Stem diameters	Measurement of stem diameter either at 1.5m above ground (or in accordance with BS guidance where trees have multiple stems) with a forester's girth measuring tape. Diameters followed by asterisk symbol indicate estimated diameters because of access difficulties, presence of ivy or other obstructions. Where trees are present in a group, the tree with the largest stem diameter within the group will have been measured/estimated.
Est. Dia.	Estimated diameters due to access restrictions are indicated with an asterisk
Branch spread	Where appropriate and where ground conditions allow, an estimate of the crown spread at each of the cardinal compass points. Where only part of the site is affected by trees, measurement may be in one or two directions only
Existing height above ground level	Distance in metres to first significant branch or canopy or a height above which crown lifting operations would not be appropriate
Age class	Simplistic estimate of tree age in one of FOUR categories (young, maturing, mature or over mature).

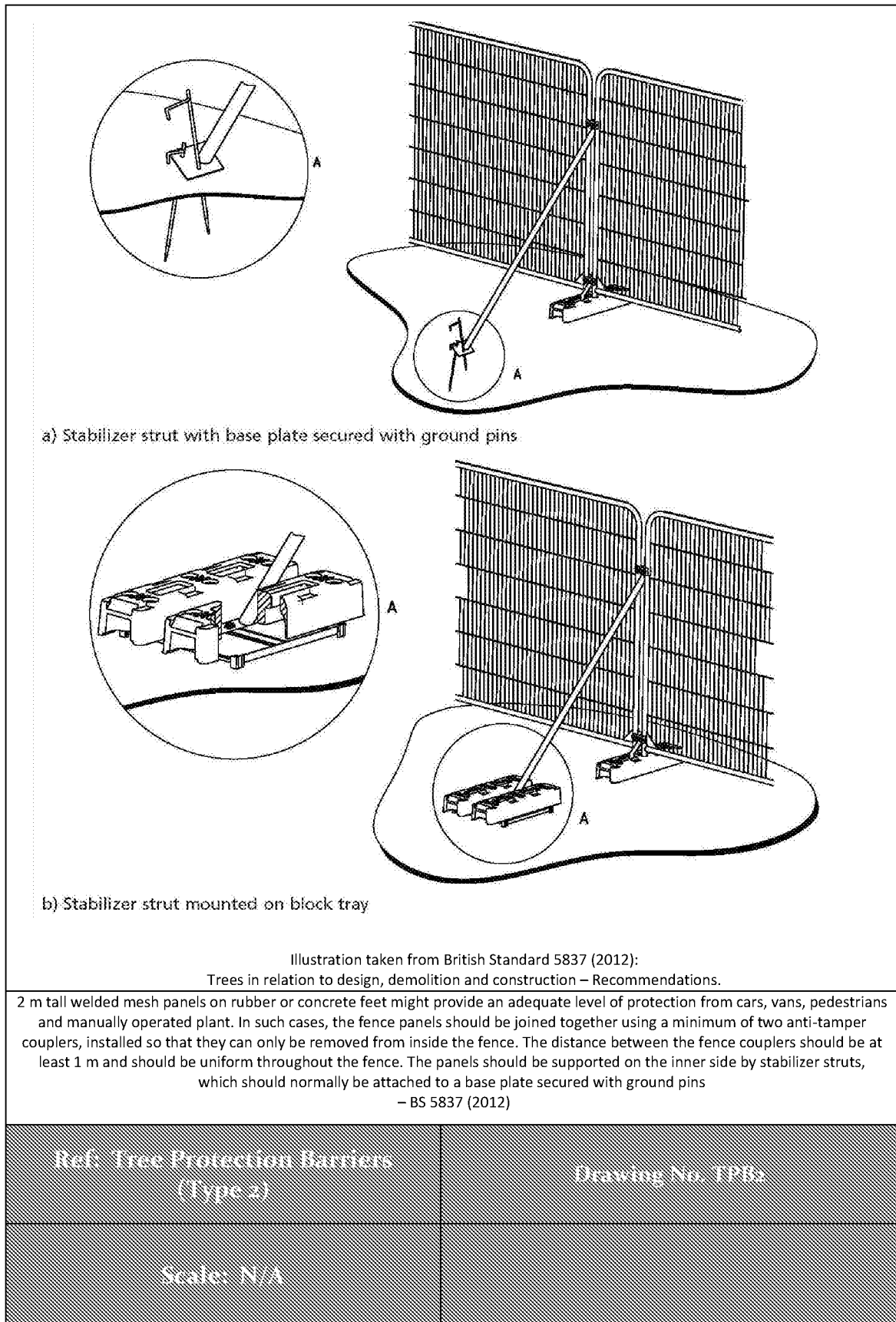
Appendix 2: Tree Schedule and Inventory

Notes	Although this document is not intended to be a full and detailed report on tree health and safety, any significant structural defects or physiological conditions have been identified where these were visible. Where no entries are recorded, this indicates no observable issues were identified. Where there is restricted access to the base of a tree, its attributes are assessed from the nearest point of access. Climbing inspections are not carried out during a walkover tree survey and, if heavy ivy is present, tree condition is assessed from what can be seen from the ground.
Management proposals	The inspection of all trees was of a preliminary nature and only defects visible from the ground have been identified. Each individual tree may not have been inspected closely because of access difficulties and only defects visible from the inspection point have been identified. Monitoring may be indicated where tree risk can be adequately managed by increased frequency of site inspections. Further investigation may be indicated where additional data may be required beyond a purely visual assessment. However, a full post development tree inspection is recommended to establish that the trees retained during construction pose acceptable levels of risk once the development has been completed.
BS 5837 (2012) Category	Either U, A, B or C based on the BS 5837 (2012) guidance.
RPA and RPA radius	RPA and RPA radius calculations have been undertaken in accordance with the guidance set out in BS 5837 (2012).

Tree Inventory:

Common Tree Names	Scientific Tree Names		Common Tree Names	Scientific Tree Names
Elder	<i>Sambucus nigra</i>		Monterey cypress	<i>Cupressus macrocarpa</i>
Leyland cypress	<i>x Cupressocyparis leylandii</i>		Oak	<i>Quercus robur</i>

Appendix 3: Illustrative Specification for Tree Protection Barriers



Appendix 4: Illustrative Specification for Ground Protection in RPAs



New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

NOTE The ground protection might comprise one of the following:

a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;

b) for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards, placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;

c) for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

– BS 5837 (2012)

Ref: Ground Protection	Drawing No. GP1
Scale: N/A	

Appendix 5: Illustrative Specification for ‘Low Invasive’ Type Surfacing in RPAs

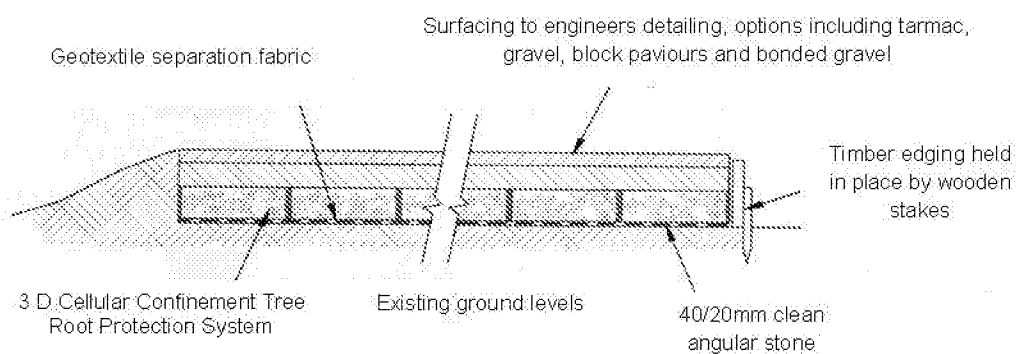
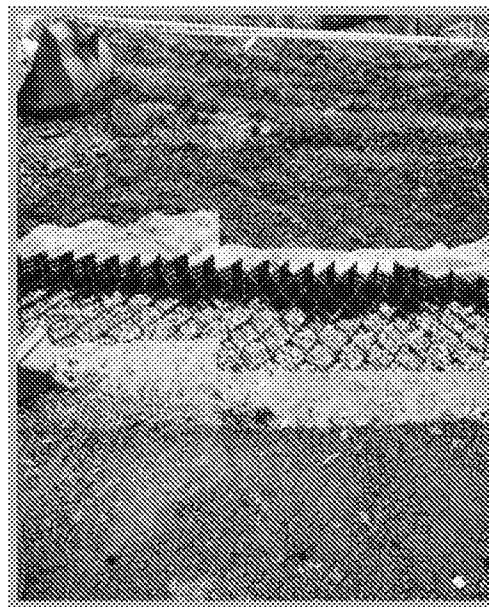
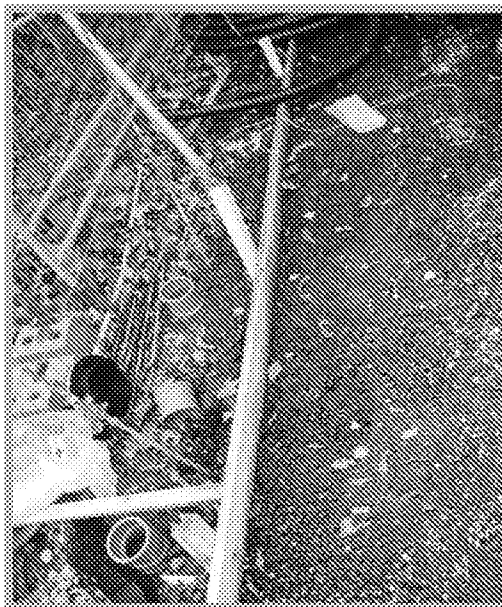
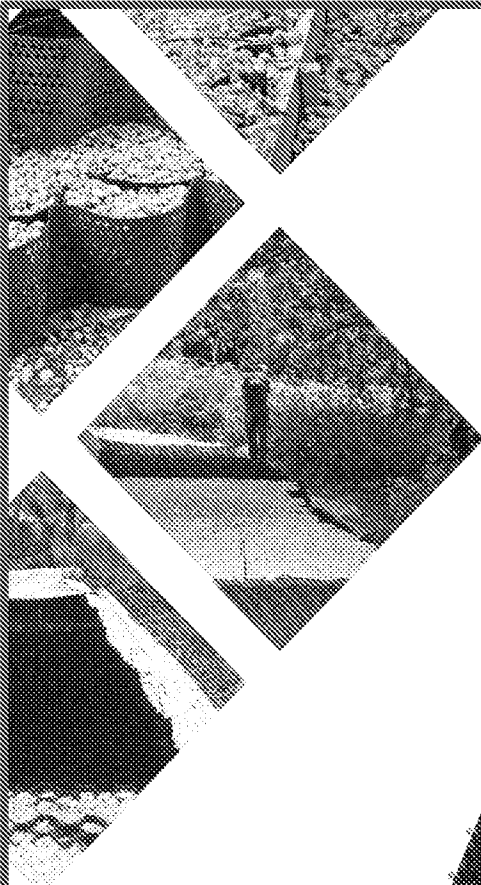


Illustration adapted from original drawings provided by Geosynthetics Ltd.

Appropriate sub-base options for new hard surfacing include three-dimensional cellular confinement systems. Alternatively, piles, pads or elevated beams can be used to support surfaces to bridge over the RPA or, following exploratory investigations to determine location, to provide support within the RPA while allowing the retention of roots greater than 25 mm in diameter.

– BS 5837 (2012)

Ref: No dig surfacing	Drawing No. NDS 1
Scale: N/A	



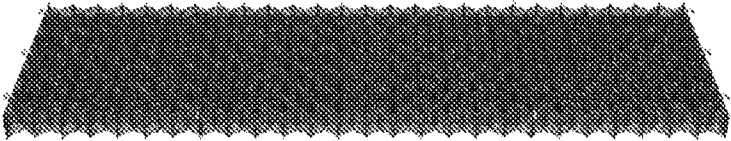
Cellweb®TRP

Why protect trees?

Trees provide a wealth of benefits within the urban environment including cleaning the air, prevention of flooding and moderation of the climate.

As a result, within the UK it is an offence to cut down, lop, uproot, top, wilfully damage or destroy a protected tree without authorisation. Fines, if the defendant is found guilty in a Crown Court, are unlimited.

To minimise the environmental impact and avoid legal proceedings, we offer the independently tested Cellweb®TRP system.



What is Cellweb®TRP?

Cellweb®TRP is a cellular confinement system specifically designed for tree root protection. The system creates a stable, load-bearing surface for traffic or footfall whilst eliminating damage to roots through compaction and desiccation.

The Cellweb®TRP system comprises of three specific elements, Cellweb®TRP, Treetex™ pollution control geotextile and an infill of clean angular stone. The system has been designed to create an unparalleled solution to tree root protection applications.

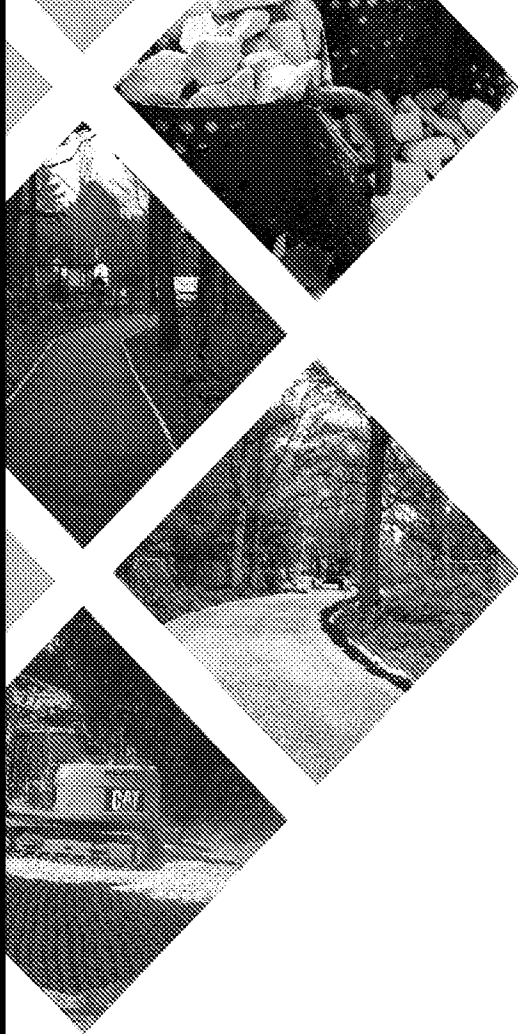
Cellweb®TRP is a no-dig solution that ensures that the load placed upon it is laterally dissipated rather than transferred to the soil and roots below. The use of Treetex™ pollution control geotextile allows for drainage and separation whilst preventing contaminants from reaching the roots.

The walls of the cells are perforated and when combined with the infill of clean angular stone, enables free movement of water and oxygen, ensuring that supplies to the tree roots are maintained.



Geosynthetics
Engineered Solutions

"Creating Innovative Solutions with Outstanding Products"



What makes Cellweb®TRP different?

With over 15 years of captured data and thousands of installations, the Cellweb®TRP system has developed a reputation for excellence.

We are so confident in our system, we offer a guarantee that covers the replacement of the trees and of the system itself. With Cellweb®TRP being quick to install and having a 100% success rate it is clear to see why the Cellweb®TRP is regularly specified by tree officers and arboriculturalists across the country.

From the drawing board to installation, we are here to help.

We have been supplying the Cellweb®TRP system since 1998 and our technical team have vast experience with tree root protection and the associated legislation.

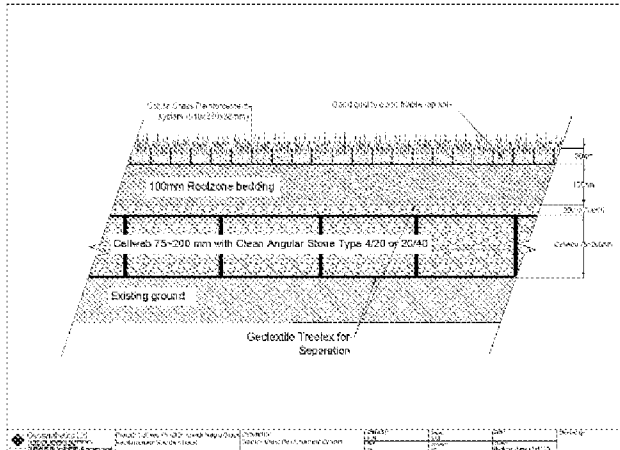
Delivering complete peace of mind to customers is our number one priority. As part of this customer care package we offer free on site consultations, technical recommendations and on site installation guidance on all projects.

Our in-house engineering team provide site specific recommendations to ensure the solution used is cost effective and environmentally sound.

For more information on Cellweb®TRP or Geosynthetics Limited please contact our sales office on 01455 617139 or visit www.geosyn.co.uk.



**INVESTORS
IN PEOPLE** | Bronze



Geosynthetics Limited | Fleming Road | Harrowood Ind Est | Hockley | Leicestershire | LE10 3DU
sales@geosyn.co.uk | Tel: 01455 617 139 | Fax: 01455 617 140 | www.geosyn.co.uk

Appendix 6: BS 5837 (2012) – Assessment Categories

TREES FOR REMOVAL				
Category and definition	Criteria			Identification on plan
<u>Category U</u> Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve.</i>			RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	Criteria — Subcategories			Identification on plan
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
<u>Category A</u> Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	GREEN
<u>Category B</u> Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation)	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	BLUE
<u>Category C</u> Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	GREY

Appendix 7: Qualifications and Experience of Barrie Draper

- 1 Qualifications:** I have a BSc degree (with Honours) in Arboriculture from the University of Central Lancashire. I also hold a BTEC Higher National Diploma (HND) in Forestry (Lowland Management), the Arboricultural Association's Technician's Certificate in Arboriculture (Tech Cert), the Royal Forestry Society's Certificate in Arboriculture (Cert Arb) and the National Examinations Board Certificate in Forestry.

- 2 Career experience:** I began my arboricultural career in 1993 as an arborist with Portsmouth City Council. During my time with the council I worked for both the direct labour organisation and for a private contractor where I obtained valuable hands on experience in all aspects of arboriculture. From 1999 to 2002 I was employed as Senior Arborist by Parchment Housing Group, a housing association based near Portsmouth. I managed the Groups' tree stock on their behalf, carrying out tree inspections and practical management operations. I have also worked in local government, spending time with Thurrock Borough Council in Essex where I was the Tree and Landscape Officer, and with Winchester City Council, where I was Arboricultural Officer for a period of 2 years. During my time working in local government, I was responsible for making Tree Preservation Orders, administering applications to work on protected trees and advising on planning applications when trees were considered material constraints on development. Working within a planning environment allowed me to gain valuable experience in the management of trees in development situations and an understanding of the planning process and how it relates to trees. From January 2005 I worked for Barrell Tree Consultancy Ltd advising clients on a wide range of tree related issues. I left the company in September 2008 and set up **ecourban** ltd.



ecourban Ltd, 13 The Greencroft, Salisbury SP1 1JD