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BS5837:2012 Arboricultural Survey Impact Assessment & Arboricultural Method Statement

**Site Address:
Freeman Close
Walberton
Arundel
BN18 0AE**

Robert Toll
HND Urban Forestry - ND Forestry - MArborA
Ref: RMT1189
Site inspection date: 31st October 2025
Date report published: 6th February 2026
Prepared for Freeman Close Homes Ltd



PRO2239

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1 Instructions

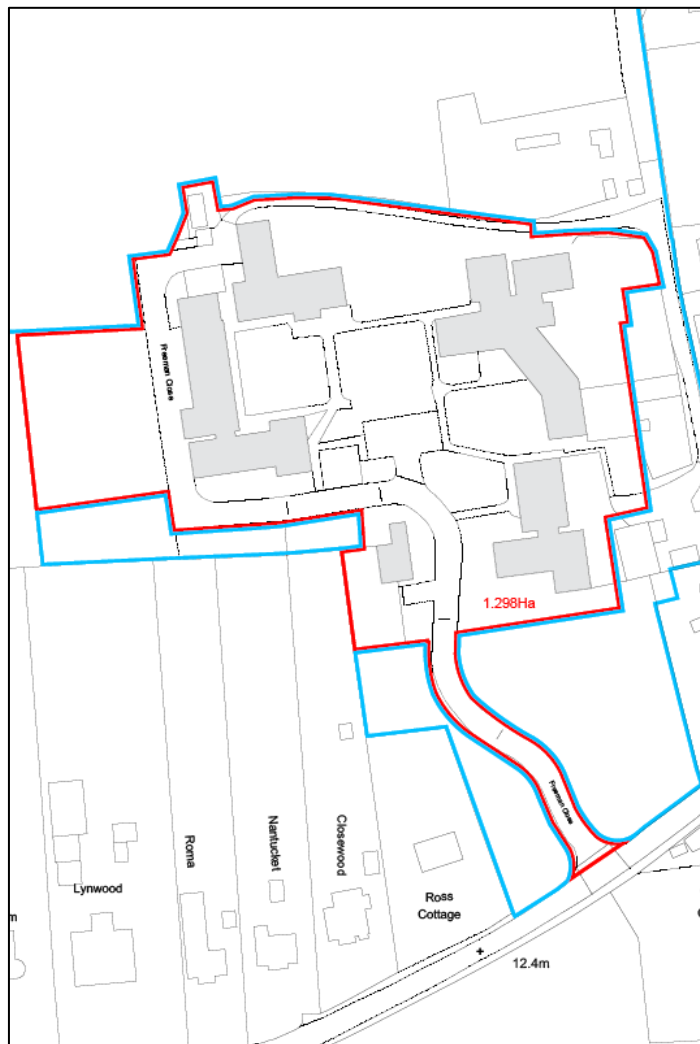
- 1.1 On the 17th October 2025 I was instructed by a representative of Freemans Close Ltd, Tim Howarth, to undertake a survey of trees that are on or adjacent to Freeman Close, Walberton, Arundel, BN18 0AE in accordance with *British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations*.
- 1.2 I am a qualified arboriculturalist as it is detailed at **Appendix 10** and this report has been produced in support of a planning application to the Arun District of West Sussex.

2 Introduction

Site Description

- 2.1 The site consists of five brick buildings which is accessed via asphalt road routed in north-south direction from Eastergate Lane. To the east and west of the access is grassed open space. The built area is circa 70m north of the public highway. Around the buildings are asphalt access roads, open spaces and footpaths. Along the north and eastern perimeter of the is a gravel track.

Image 1 – The proposal site at Freeman Close, Walberton, Arundel, BN18 0AE is outlined by an indicative red line



Limitations

- 2.2 I carried out the survey from ground level with the aid of a Bosch GLM 120 C Professional Laser Measure to measure distances, a Nikon Forestry Pro height measurer and diameter tape.
- 2.3 Prior to my visit, I was provided with a topographical survey indicating the locations of the trees to be assessed.
- 2.4 Trees and groups T5, T11, T18 and T59 have been plotted on the plans as accurately as possible based on the arboriculturalist's observations.
- 2.5 Measurements required for calculating root protection areas and canopy spreads were obtained wherever practicable. In locations where access was not feasible, dimensions have been estimated.
- 2.6 Diameter measurements were taken at 1.5 m above ground level using a diameter tape wherever practicable. Where measurement at this height was not possible—owing to dense ivy cover, off-site tree locations, or other access constraints—an estimated value was recorded.
- 2.7 All estimated measurements are clearly identified with “estimated” or “est” in the tree survey schedule at **Appendix 2**. In some instances the diameter measurement has been taken at a height other than 1.5m due to such things as low fork unions. Where this has occurred, I have detailed this in the tree survey schedule shown at **Appendix 2**.
- 2.8 This report does not constitute a tree safety assessment. If there are concerns about the risk posed by any trees to persons or property, a separate tree condition inspection should be commissioned.
- 2.9 This report does not constitute a safety survey of the trees included within it. It is advised that if there are concerns regarding the risk posed by trees to persons and property then a tree condition inspection should be commissioned.

Legal Restrictions

- 2.10 I have not contacted the local planning authority (LPA) directly to ascertain whether the trees on or adjacent to the site are protected by Tree Preservation Orders (TPO) or if they are within a Conservation Order.
- 2.11 On the 30th January 2026 I carried out a check on the Arun District Council online protected tree maps and they indicate that there is no statutory protection on any of the surveyed trees.
- 2.12 It is an offence under the Wildlife and Countryside Act 1981 and the Rights of Way Act 2000 to disturb nesting birds or roosting/breeding bats. When carrying out tree work care should be taken to avoid disturbance. If necessary, advice should be taken to avoid disturbance. If necessary, advice may need to be sought from a qualified Ecologist.

Tree survey

- 2.13** I visited the site on 31st October 2025 and surveyed a total of sixty-six trees and nine groups of trees. The surveyed trees and groups of trees have been categorised in accordance with British Standard 5837:2012 as shown at **Appendix 1** and the tree survey schedule can be seen at **Appendix 2**.
- 2.14** At the time of my survey fourteen trees are considered to be category B and moderate value. The remaining trees and groups are considered to be category C or U and low value, except for tree T13 which is dead.

Table 1 – Tree categorisations as BS5837:2012

Category A	Category B	Category C	Category U
-	T1, T5, T10, T16, T28, T29, T31, T35, T59, T60, T64, T68, T69, T70	T2, T3, G4, T6, G7, T8, G9, T11, T12, T15, T17, T18, T19, G20, G21, T22, T23, T24, T25, T26, T27, T30, G32, T33, T34, T36, G37, T38, T39, T40, T41, T42, T43, T44, T46, T47, T48, T49, T50, G51, T52, T53, T54, T56, T57, T58, T61, T62, T63, T65, T66, T67, T71, T72, G73, T74,	T14, T45, T55, T75

- 2.15** It was noted that there are other trees that are located on or adjacent to Freeman Close, Walberton, Arundel, BN18 0AE but they have not been included within this report. This is because it is deemed that they are:
- far enough from the area proposed for development that they will not be affected;
 - they will be adequately protected by the tree protection measures afforded to the surveyed trees;
 - they are specimens of limited significance;

Canopy spreads

- 2.16** The canopy spreads have annotated on the tree constraints plan and tree protection plan at **Appendices 3, 4, 5 and 6**.

Root protection area (RPA) definition

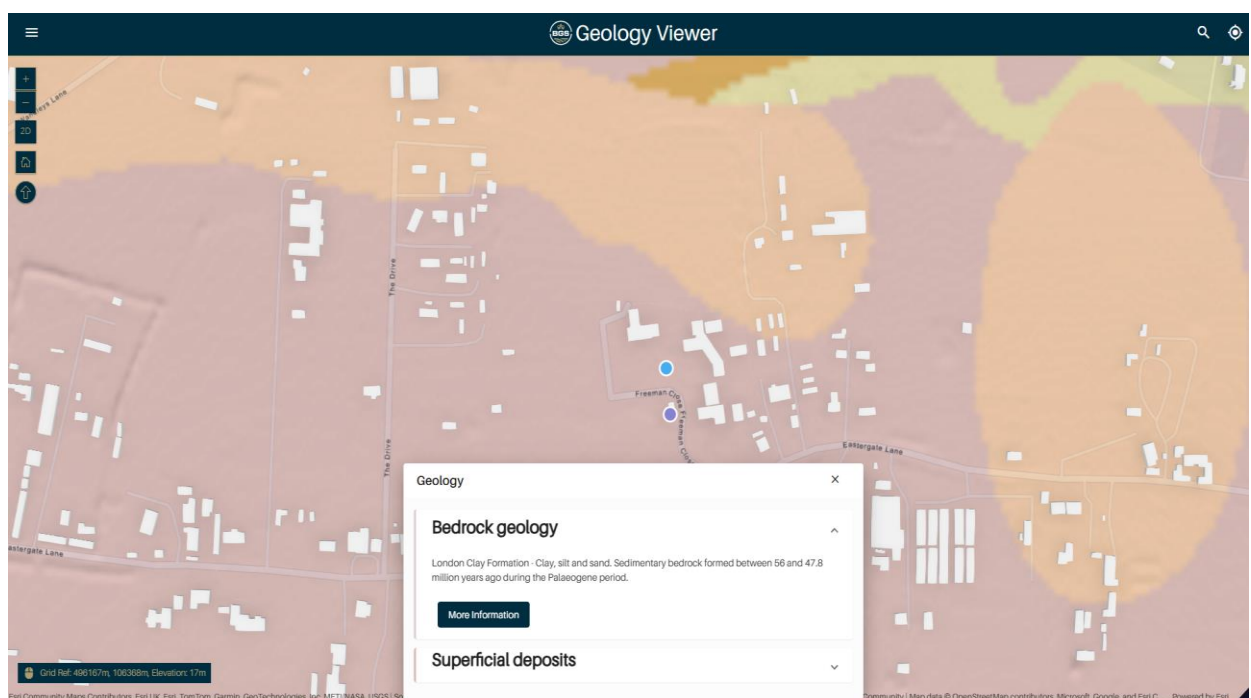
- 2.17** The RPA is a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability and where the protection of the roots and soil structure are treated as a priority.

(British Standard 5837:2012 – Trees in relation to design, demolition and construction – Recommendations – The British Standard Institute 2012).

3 Soil Assessment

- 3.1** The soil assessment is necessary to establish whether the soil on the proposal site is shrinkable. Tree roots and those of other vegetation have the potential to extract moisture from shrinkable soils such as clay, making the soil expand and contract as the soil desiccates and re-hydrates. Where new structures are proposed on shrinkable soils and close to trees, foundations will need to be sufficiently deepened or able to withstand to minimise the risk of indirect damage to foundations.
- 3.2** No soil assessments have been provided however a check the British Geological Survey gives the soil type as London Clay Formation - Clay, silt and sand. This means that the underlying soil is shrinkable and as such foundations will need to be deepened. If further assessments are undertaken that show that there is shrinkable clay, then foundations must be designed in accordance with the guidance within the National House Building Council's Standards Chapter 4.2 Building near trees.

Figure 1 – The British Geological Survey indicates that the soil make up at Freeman Close, Walberton, Arundel, BN18 0AE is shrinkable London Clay Formation - Clay, silt and sand.



4 Arboricultural Impact Assessment

Arboricultural Impact Assessment overview

- 4.1** The arboricultural impact assessment assesses the direct and indirect effects of the proposed design on trees that are growing or adjacent to the site. Where appropriate mitigation will be recommended to prevent or minimise harm and details mitigation as appropriate. Consideration will be given to the practicality of the design and the viability of tree retention.

Tree removals

- 4.2** To facilitate the proposed development, it will be necessary to remove two Category B trees (T28 and T59), seven category C trees and two groups (T26, T27, T44, T46, G51, T54, T72, G73 and T74), along with two category U trees. These removals are required to create sufficient space for the construction of the proposed driveway.
- 4.3** Category U trees are considered to have a very limited remaining useful life expectancy and, in accordance with British Standard 5837:2012, are not treated as a material consideration in the planning process.
- 4.4** The category C trees and groups identified for removal are considered to be unremarkable specimens of limited arboricultural and wider landscape value. On balance, their removal is considered acceptable, particularly as it can be readily mitigated through replacement planting within the site.
- 4.5** Category B tree T28 will require removal to facilitate the construction of the new access road, while Category B tree T59 will be removed to enable the construction of a proposed parking bay.
- 4.6** Notwithstanding that T28 is a good-quality category B specimen, its amenity value is largely confined to within the site. Its removal can be effectively offset through replacement planting along the site frontage, which would provide an immediate and enhanced contribution to public amenity due to visibility from the adjacent public road.
- 4.7** Tree T59 is also a good specimen; however, it is situated within an area containing numerous trees of greater prominence. There is ample opportunity along the site frontage to mitigate its removal through replacement planting, which has the potential to deliver a greater net gain in visual amenity.
- 4.8** A section of category C tree group G32, measuring approximately 24 m in length, will require removal to facilitate access to the outdoor play area. This group comprises densely growing, young, previously coppiced alder and is considered to be unremarkable, with amenity value largely confined to within the site. On this basis, the partial removal of G32 is considered acceptable.

Access facilitation pruning

- 4.9** Access facilitation pruning specifications are set out in **Appendix 2**.
- 4.10** Category C tree T3 will require reduction works to provide adequate clearance from the existing dwelling referenced as the plot. T3 is an unremarkable tree of small stature

with limited public amenity value, and the proposed works are therefore considered acceptable.

- 4.11 Category B trees T1 and T31, together with Category C trees T23 and T24, will require crown lifting to provide adequate clearances for construction activities. These works will involve the removal of small-diameter branches only and are not expected to have a detrimental impact on the health, structural integrity or amenity value of the trees.
- 4.12 Category C trees T48 and T49 will require coppicing to provide adequate construction space. Tree T48 has previously been coppiced, and the proposed works represent a continuation of this management regime. Tree T49 is a willow species, which is well known for its tolerance of coppicing. Accordingly, these works are considered acceptable.

Tree protection fencing

- 4.13 Tree protection fencing will be required throughout the construction process to restrict construction access within the RPAs of trees and groups T1 – T25, T29, T31 – T42, T47 – T50, T52, T53, T56 – T58 and T60 - T71. The areas to be protected by the tree protection fencing can be seen as blue lines on the accompanying Tree Protection Plan at **Appendices 5 and 6**.
- 4.14 Tree protection fencing will consist of 1.8m high wire mesh panels placed in rubber blocks. The panels will be securely bolted together to prevent movement and a backstay must be attached to each panel to prevent movement and resist impacts. Un-braced weld mesh panels on unsecured rubber or concrete feet will not be used as these are not resistant to impact and are too easily removed by site operatives.
- 4.15 A notice will be attached to the fencing which says 'Tree Protection Area. Keep Out!'.

Ground protection

- 4.16 As stated above, the RPA is a sacrosanct area of ground where encroachment by construction activities should be avoided wherever possible. In the case of trees T29, T31, T42, T49 and T50 there will be a requirement for construction access within their RPAs throughout development. Where it is considered that the construction working space or temporary access is justified within their RPAs, this will be facilitated by a set-back in the alignment of the tree protection barrier and suitable ground protection will be installed. Areas to be protected with ground protection have been shown as orange hatching at **Appendices 5 and 6**.
- 4.17 In all cases, the objective is to avoid soil compaction, which can result from the single passage of a heavy vehicle or repeated pedestrian movement, particularly in wet conditions. Soil compaction can significantly impair root development and function and may lead to a decline in the tree's physiological and structural condition.

Constructing hard surfacing close to trees

- 4.18 Where the construction of a surface cannot be avoided within the fenced RPA of retained trees, the soil substrate will form part of the construction profile (sub grade), a 'NO-DIG' approach is to be adopted.

4.19 A proposed access roads and parking bays will overlap with the respective RPAs of trees T29, T31, T42, T49 and T50. To minimise the impact on the RPAs the surface (including any associated edge support) should be engineer designed to take account of site-specific data including soil type, current level if soil type and anticipated axle loads of vehicle using the new surface.

4.20 The surface must:

- Provide adequate resistance to applied loads and avoiding localised ground compaction by evenly distributing the carried weight over the track width and wheelbase of any vehicles that will use the access.
- Provide resistance to or tolerance of deformation by tree roots.
- Provide oxygen diffusion according to seasonal demand (gas porous).
- Provide water throughout to meet seasonal demand (permeable).
- Preserve the soil structure during installation to prevent lack of water, exclusion of oxygen, excessive resistance to penetration (density or soil strength) and or chemical toxicity.

4.21 Construction may (where appropriate) incorporate:

- The use of a three-dimensional Cellular Confinement System (CCS), such as Cellweb, as an integral component of the subbase, to act as a suspension layer by creating cells into which recommended material is contained. Here it is necessary to install a geotextile layer between the ground and the cells to prevent mixing and the cellular materials being pressed into the ground.
- Alternatively, where the use of a CCS is not appropriate due to the underlying soil (and/or other site factors) reinforced concrete slabs, supported and suspended on mini-piles and incorporating a designed system that allows for the passage of water and oxygen to the underlying soil maybe used.
- Other engineered-designed surfaces that address the requirements of the above performance specification may also be used.

4.22 Examples of acceptable hard surface include washed gravel (not binding gravel or hoggins as these are almost impermeable when consolidated); dry jointed paving slabs, pavers or bricks on a sharp sand foundation, permeable paving blocks or pre-made concrete slabs with 50mm diameter holes at regular spacing of 300-600mm (to be agreed) with a no-fines aggregate back filling of the openings.

4.23 Section 5.3.1 of British Standard 5837:2012 states that:

“The default position should be that structures (see 3.10) are located outside the RPAs of trees to be retained. However, where there is an overriding justification for construction within the RPA, technical solutions might be available that prevent damage to the tree(s) (see Clause 7). If operations within the RPA are proposed, the project arboriculturist should:

- a) demonstrate that the tree(s) can remain viable and that the area lost to encroachment can be compensated for elsewhere, contiguous with its RPA;
- b) propose a series of mitigation measures to improve the soil environment that is used by the tree for growth.”

- 4.24** British Standard 5837:2012 does not define or provide clarification as to what constitutes an “overriding justification” for development within RPAs. In this instance, the overriding justification is the need to construct an access road, car park and footpaths within the respective RPAs of the trees listed in Section 4.11.
- 4.25** Although the standard does not define overriding justification, it does set out the considerations and mitigation measures that would make construction within an RPA acceptable. These are discussed below, and conclusions are reached accordingly.
- 4.26** Section 7.4.2.3 of British Standard 5837:2012 recommends that proposed new permanent hard surfacing should not exceed 20% of the total unsurfaced ground within an RPA. Table 2 provides a breakdown of the proposed encroachments into the RPAs of Category B trees T29 and T31.

Table 2 – Table showing new surfacing overlap into RPAs of trees

Tree no.	RPA area	Existing surfacing within RPA	Unsurfaced areas within RPA	New overlap into unsurfaced RPA	Percentage of new overlap into unsurfaced RPA
T29	58.6m ²	0m ²	58.6m ²	31.74m ²	31.74%
T31	76m ²	0m ²	76m ²	14.91m ²	19.62%

- 4.27** It has been demonstrated that the total overlap into the unsurfaced RPA of tree T31 does not exceed the 20% threshold; however, the overlap into the RPA of tree T29 exceeds this guideline.
- 4.28** With regard to the encroachment into the RPA of T29, consideration has been given to the use of a no-dig, three-dimensional cellular confinement system combined with a permeable surface, which will retain the existing rooting environment. It was also observed that to the south-east of the nominal RPA of T29 there is contiguous rooting area that is likely to be colonised by roots as shown by the solid yellow at **Appendices 5 and 6**. Taking into account the good physiological condition of T29, the retention of a substantial proportion of rooting area within its nominal RPA, and the availability of contiguous rooting area beyond it, the proposed use of a three-dimensional cellular confinement system is considered acceptable and compliant with the requirements of British Standard 5837:2012.
- 4.29** Trees T42, T49 and T50 have been categorised as Category C trees and, as such, are not considered a significant constraint to development. It has therefore not been necessary to quantify the extent of hard surfacing encroachment into their RPAs. Nevertheless, the use of a no-dig, three-dimensional cellular confinement system has been proposed in these areas as a precautionary measure.

Sensitive demolition

- 4.30** It is proposed to remove and renew sections of the existing parking bays and access roads that partially overlap with the respective RPAs of trees T1, T2, T10 and G20–T25. These works are required to facilitate surface renewal, and the existing sub-bases will be retained in situ to minimise below-ground disturbance.
- 4.31** To avoid damage to roots that may be present beneath or adjacent to the existing surfaces, the works shall be undertaken sensitively. The surface layers shall be broken out using hand tools and pneumatic devices only, with no mechanical excavation permitted within the RPAs.
- 4.32** The greenhouse structure that partially overlaps with the RPAs of trees T48 and T50 will be sensitively demolished using hand tools. The superstructure and any associated foundations shall be carefully broken out using hand-held tools or a small bucket excavator operating from outside the RPAs, with all arisings removed away from the RPAs to prevent compaction or contamination.

Sensitive excavations

- 4.33** The localised excavations required for the installation of new posts to support the car port within the outer RPA of T31 will be undertaken using hand tools or compressed air excavation techniques. This approach will minimise the risk of damage to retained roots and avoid unnecessary disturbance to the surrounding soil structure. Given the limited extent of the excavations and their location within the outer portion of the RPA, the works are considered to pose a low risk to the health and stability of T31 and are therefore deemed acceptable.

Areas for site compounds, storage and mixing

- 4.34** Site compounds will be located away from trees wherever possible and ideally 2m from any protective barriers.
- 4.35** On this occasion it is proposed to utilise the area centrally within the site for the site compound, storage and mixing as shown at **Appendices 5 and 6**.

Services

- 4.36** The proposed layout of incoming (water, gas and electricity) and outgoing (foul sewer) services is not yet established but they should be installed outside root protection areas. If it is necessary for a trench to be dug through an RPA a specific method statement will be required which will need to specify that the trench will be hand dug and that care will be taken to preserve all roots encountered which are larger than 25 mm diameter.
- 4.37** There is considered to be adequate room for new services to be constructed without requiring trenches that pass-through RPAs of category B trees. The tree protection fencing has been set back along the edge of existing and proposed driveway to allow new services to be installed.

Conclusions

- 4.38** I visited Freeman Close, Walberton, Arundel, BN18 0AE on the 31st October 2025 and surveyed a total of sixty-six trees and nine groups of trees in accordance with BS5837:2012.
- 4.39** At the time of my survey, fourteen trees were considered to be category B and moderate value. The remaining trees were considered to be category C or U and low value except for T13 which is dead.
- 4.40** All trees were categorised in accordance with British Standard 5837:2012 as shown at **Appendix 1**.
- 4.41** The development will require the removal of two category B trees, nine category C trees or groups and two category U trees. Partial removal of a category C group will also be required.
- 4.42** To facilitate constriction, remedial pruning works will be required to two category B trees and four category trees.
- 4.43** The trees to be retained will be protected during development and methods for ensuring their protection have been described.
- 4.44** The development is sympathetic to the leafy character of the area.

5 Arboricultural Method Statement

Access facilitation works

- 5.1 The agreed pruning works and tree removals will be carried out as preliminary works as detailed at **Appendix 2**. These works will be carried out by suitably qualified arborists to the standards set out in BS3998: 2010 Tree works – recommendations. Heavy machinery must not be used on unprotected ground.

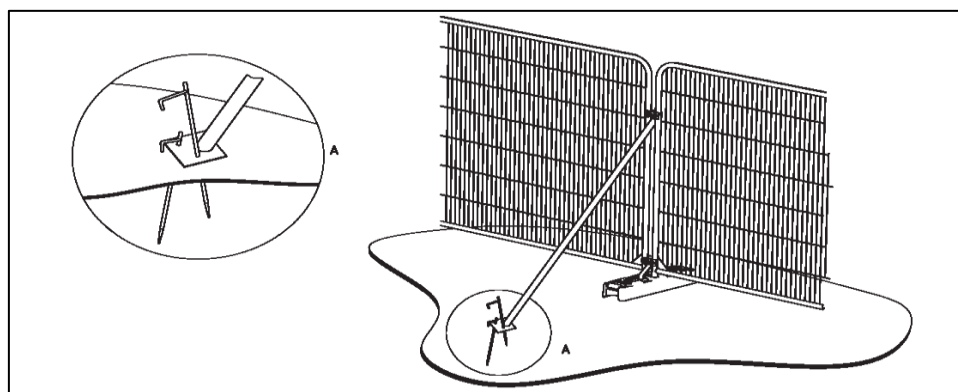
Pre-commencement meeting

- 5.2 Prior to the commencement of development all tree protection will be erected and a site meeting will be held between the appointed building contractors, the appointed arboriculturalist and local authority Tree Officer as it is stipulated at **Appendix 5**. This meeting is necessary to agree that the position of the tree protection is correct.

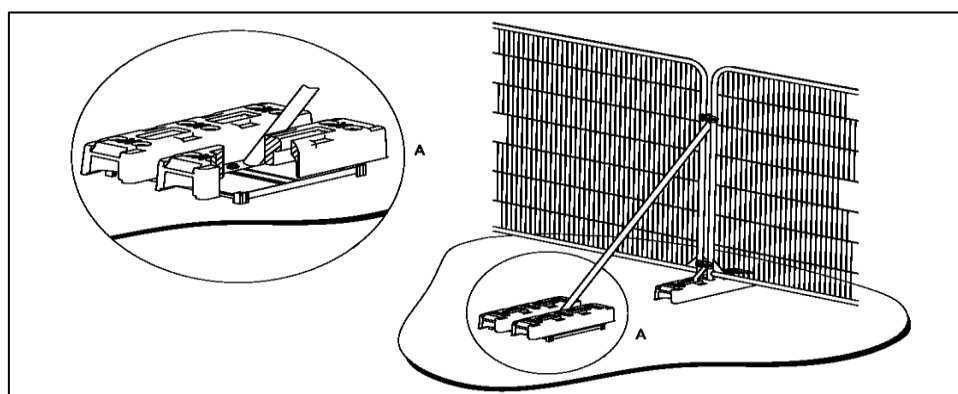
Protective barriers/fencing

- 5.3 All tree protection barriers will be erected in the positions shown in **Appendices 5 and 6** in accordance with the specifications detailed in Figures 2 and 3.

Figures 2 and 3 – Examples of above-ground stabilizing systems



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

Image taken from British Standard 5837:2012 – Trees in relation to design, demolition and construction – Recommendations.

Warning signs

- 5.4 All weather notices will be attached to the tree protection fencing.

Figure 4 – Examples of tree protection warning sign



Temporary ground protection within RPAs

- 5.5 The areas subject to ground protection have been shown as orange and red hatching at **Appendices 5 and 6**.
- 5.6 A permeable geotextile such as Terram will be laid and onto this will be placed treated timber (100 mm x 80 mm) at spacings of no more than 1m. The area between the timber bearers will be filled with a compressible material such as woodchips and will then be covered by 20 mm thick marine ply which will be screwed down onto the timber (Figures 5 and 6). The plywood may need to be coated with a non-slip paint.

Figure 5 – Specification for ply board ground protection

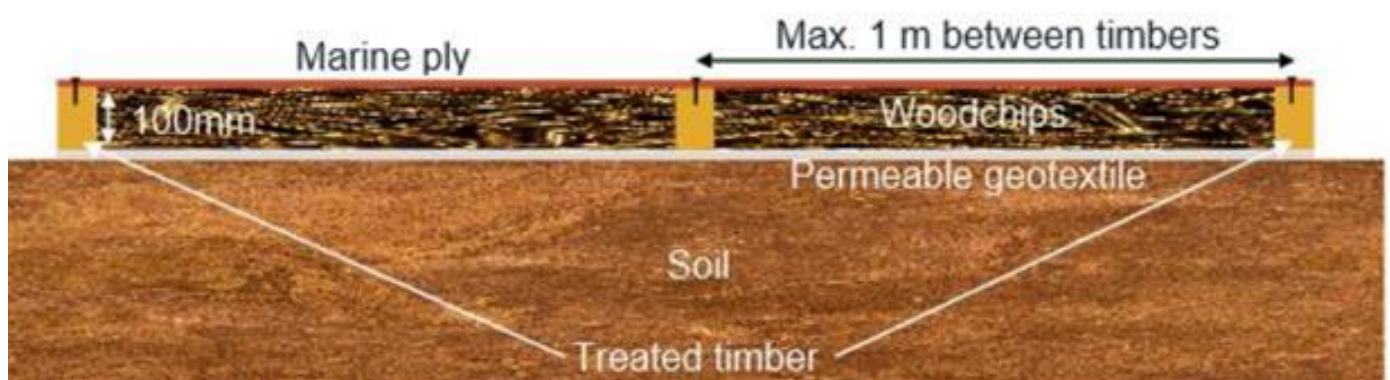


Figure 6 – Plywood sheeting used as ground protection



- 5.7** Single thickness of scaffold boards placed on top of driven scaffold frame to form a suspended walkway (Figure 7)

Figure 7 – Specification for scaffold ground protection



- 5.8** Development can commence in accordance with the planning consent.

Sensitive Excavations within RPAs

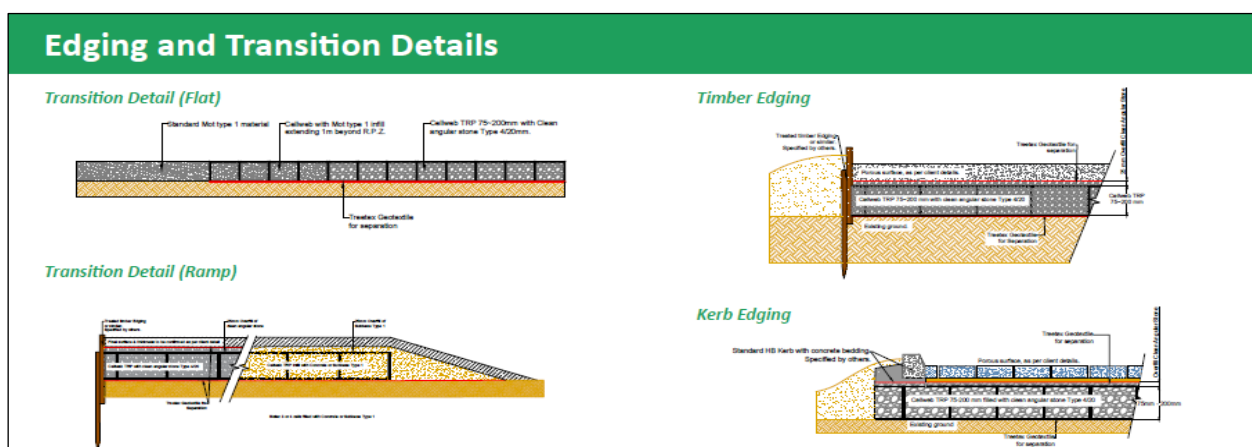
- 5.9** Areas to be sensitively excavated are shown as solid purple at **Appendices 5 and 6**.
- 5.10** All excavations within the RPAs of retained trees will be undertaken using hand tools or a compressed air excavation device (Air Spade) and under the supervision of the appointed arboriculturalist. Prior to the placement of any concrete, the sides of holes or trenches shall be lined with polythene to prevent the leaching of caustic substances into adjacent soils within the RPAs.
- 5.11** In the unlikely event that roots with a diameter of 25 mm or greater are encountered, the advice of the appointed arboriculturalist shall be sought to determine the most appropriate course of action. Where root severance is deemed unavoidable, roots shall be cut back cleanly to the edge of the excavation using a sharp hand saw or secateurs. Roots must not be torn or ripped, and care shall be taken to avoid damage to the surrounding bark and cambium.

Method of constructing no dig surfaces close to trees

- 5.12** Areas of the RPAs proposed to be covered with a no-dig surface are shown hatched red on **Appendices 5 and 6**.
- 5.13** A cellular confinement system with a minimum depth of 100 mm, or the minimum depth specified by a structural engineer to safely support cars, 4x4s and vans, will be utilised for vehicular areas. For footpaths intended to support pedestrian traffic only, a cellular confinement system with a minimum depth of 75 mm will be used.
- 5.14** The appointed arboriculturalist will be invited to site to supervise the installation. Prepare the site by carefully hand raking any excessive organic matter and removing all debris and significant protrusions such as rocks. Use ground protection system if vehicular movements are unavoidable.
- 5.15** Ensure that the prepared surface is reasonably even and fill any significant depressions with 40/20 granular material to achieve an even surface profile. Do not roll or consolidate the area.
- 5.16** Install tanalised timber edging boards to the perimeter of the construction zone as appropriate to the total layer profile thickness. Avoid damage to tree roots when placing posts and pegs.
- 5.17** Install a geotextile layer across the site (a possible suggestion is Treetex T-300 supplied by Geosynthetics). The adjacent roles of geotextile membrane should overlap by 150mm. It may be necessary to lightly pin the geotextile membrane in place until the overlying layers are installed.
- 5.18** Place the Geogrid layer over the Geotextile Membrane layer and fix down using steel pins to hold flat. Overlap adjacent rolls by minimum 150mm. Avoid tree root damage and soil compaction by avoiding vehicular movements over the area.

- 5.19** Open out and lay the specified layer thickness of the Cellular Confinement System and pin in place between the edging boards. Pin the CCS in place using Steel Fixing Pins or similar and fully expanded position whilst the cells are being filled and to stop the structure from being pushed up by migrating aggregate during the filling process. Pin spacing will vary according to the site conditions but will generally be required at 1m - 2m centres on flat surfaces, mainly placed around the perimeter of the area and where adjacent sections of CCS about each, with less in the middle of the area. Drive the pins in so that they are just touching the top of the cells but do not compress the fabric. Avoid any obvious surface tree roots during the pinning process.
- 5.20** Fill the CCS, working toward the trees from the furthest point away and using the filled CCS as a platform. The Cells must be filled with clean, open graded angular aggregate, normally in the particle size range of 5mm - 45mm – not single sized or rounded aggregate. The surface can be rolled to settle the stone into the cells but a compaction plate (whacker) should not be used. Do not contaminate the filled cells with site debris, soil or mud.
- 5.21** Install the final binder course and permeable surface courses as per the manufacturer's instructions.

Figure 8 – Cellweb edging and transition details



Sensitive demolition within the RPAs

- 5.22** The existing surfaces that overlap with the RPAs and require sensitive removal have been shown as light blue hatching at **Appendices 5 and 6**.
- 5.23** The existing surfaces will be retained within RPAs until the end of the build to provide protection to underlying RPAs.
- 5.24** The appointed arboriculturalist will be invited to site to supervise demolition within the RPAs of category B trees. The surfaces will be broken up by hand tools and pneumatic devices and carefully extracted away from the RPAs. The subbases will be retained to form part of the renewed surfaces. If roots are exposed, they will be covered with damp hessian to protect them from rapid temperature changes. Damage to roots must be avoided, including the outer bark layer.
- 5.25** Following completion of all development the tree protection can be dismantled to allow landscaping works to take place.

Appendix 1 – British Standard 5837:2012 tree categorisation chart

TREES UNSUITABLE FOR RETENTION				
CATEGORY AND DEFINITIONS	CRITERIA			IDENTIFICATION ON PLAN
Category 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; see 4.5 of BS5837:2012</i>			RED  RGB 127.000.000
TREES TO BE CONSIDERED FOR RETENTION				
CATEGORY AND DEFINITIONS	CRITERIA - SUBCATEGORIES			IDENTIFICATION ON PLAN
	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation	
Category A 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)	LIGHT GREEN  RGB 000.255.000
Category B 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	MID BLUE  RGB 000.000.255
Category C 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  RGB 091.091.091

Appendix 2 - Tree survey schedule

agl:above ground level – c:circa – gl:ground level

Tree No.	Species	Height (m)	Trunk dia. at 1.5m	Canopy Spread	Crown Height (m)	Age Class	Physiological Condition	Structural Condition	Comments/ Recommendations	Useful Life Expect	BS5837 grade	Root Protection Area	
												Radius	RPA Area
T1	Deodar Cedar (<i>Cedrus deodara</i>)	12m	445mm	N5.5m E5.5m S4.5m W5m	1m	Early mature	Good	Good	Works required for development: Crown lift to 5m clearance above ground level over parking bays.	20+	B	5.3m	89.6m ²
T2	Sitka Spruce (<i>Picea sitchensis</i>)	7m	222mm	N2m E2m SE0.5m S1.5m W2m	2m	Semi mature	Good	Good	Unremarkable tree. Works required for development: Crown lift to 3m clearance above ground level over parking bays.	10+	C	2.7m	22.3m ²
T3	Cherry sp. (<i>Prunus sp.</i>)	6m	218mm	N4m E3.5m S3.5m W3.5m	2m	Early mature	Good	Good	Unremarkable tree. Works required for development: Reduce eastern lateral radial spread by up to 2.5m to leave a final radial spread of 1m.	10+	C	2.6m	21.5m ²
G4	Group of Leyland Cypress (x4)	15m	Max 433mm	N5m E5m S5m W5m	2m	Early mature	Good	Good	Unremarkable group. Closely planted trees forming a tall hedge.	10+	C	5.2m	84.8m ²
T5	Cider Gum (<i>Eucalyptus gunnii</i>)	17m	600mm est	N7m E6m SE5m S3m W3m	3m	Mature	Good	Good	Off-site tree.	20+	B	7.2m	162.9m ²
T6	Common Hazel (<i>Corylus avellana</i>)	3m	110mm 111mm	N6.5m E1m S0m W3m	1.5m	Young	Good	Fair	Suppressed as overtopped by adjacent trees.	10+	C	1.9m	11.0m ²

Tree No.	Species	Height (m)	Trunk dia. at 1.5m	Canopy Spread	Crown Height (m)	Age Class	Physiological Condition	Structural Condition	Comments/ Recommendations	Useful Life Expect	BS5837 grade	Root Protection Area	
												Radius	RPA Area
G7	Group of Common Holly (x2)	8m	Max 325mm est	N3m E3m S3m W3m	1m	Young	Good	Good	Unremarkable group.	10+	C	3.9m	47.8m ²
T8	Common Hazel (<i>Corylus avellana</i>)	6m	141mm 150mm	N6m NE5m E0.5m S0m W0.5m NW5m	1.5m	Young	Good	Fair	Suppressed as overtopped by adjacent trees.	10+	C	2.5m	19.2m ²
G9	Group of Common Holly (x2)	8m	Max 250mm est	N4m E2m S2m W2m	2m	Young	Good	Good	Vegetation impedes survey. Unremarkable group.	10+	C	3.0m	28.3m ²
T10	Cider Gum (<i>Eucalyptus gunnii</i>)	24m	900mm est	N8m E8m S8m W8m NW6m	2m	Mature	Good	Good	Off-site tree; northern limb at 8m heavily weight and bulging at 3m from main stem indicates heightened risk of branch failure. Consider safety works to reduce loading by reducing the branch length	20+	B	10.8m	366.4m ²
T11	Common Hawthorn (<i>Crataegus monogyna</i>)	7m	400mm est	N6m E2m S3.5m W2m	1.5m	Mature	Good	Fair	Suppressed as overtopped by adjacent tree. Medium sized deadwood 25mm to 100mm.	10+	C	4.8m	72.4m ²
T12	English Elm (<i>Ulmus procera</i>)	9m	270mm	N3m E0m S2m W4m	1.5m	Semi mature	Good	Fair	Off-site tree. Unremarkable tree. Co-dominant form with adjacent tree.	10+	C	3.2m	33.0m ²

Tree No.	Species	Height (m)	Trunk dia. at 1.5m	Canopy Spread	Crown Height (m)	Age Class	Physiological Condition	Structural Condition	Comments/ Recommendations	Useful Life Expect	BS5837 grade	Root Protection Area	
												Radius	RPA Area
T13	English Elm (<i>Ulmus procera</i>)	6m	150mm	-	-	-	-	-	Dead tree.	Dead	-	1.8m	10.2m ²
T14	Common Hawthorn (<i>Crataegus monogyna</i>)	7m	225mm 300mm est	-	2m	Early mature	Poor	Good	Almost completely dead.	<10	U	4.5m	63.6m ²
T15	Common Hawthorn (<i>Crataegus monogyna</i>)	5m	200mm 200mm est	N3.5m E3.5m S3.5m W3.5m	1m	Semi mature	Good	Good	Off-site tree. Unremarkable tree.	10+	C	3.4m	36.2m ²
T16	Common Oak (<i>Quercus robur</i>)	17m	600mm est	N8.5m E8m S6m W5m	2m	Mature	Good	Good	Off-site tree. Medium sized deadwood 25mm to 100mm.	20+	B	7.2m	162.9m ²
T17	Common Oak (<i>Quercus robur</i>)	4m	153mm @1.25m	N3m E3m S3.5m W2m	1m	Young	Good	Good	Unremarkable tree.	10+	C	1.8m	10.6m ²
T18	Common Alder (<i>Alnus glutinosa</i>)	11m	250mm 225mm 225mm est	N4m E4m S4m W3m	2.5m	Semi mature	Good	Good	Off-site tree. Unremarkable tree. Three-stemmed from 200mm.	10+	C	4.9m	74.1m ²
T19	Common Alder (<i>Alnus glutinosa</i>)	8m	225mm 125mm 150mm 150mm est	N4m E4m S4m W1m	2m	Semi mature	Good	Good	Off-site tree. Unremarkable tree. Four stemmed from 300mm.	10+	C	4.0m	50.3m ²
G20	Group of Common Alder (x5)	10m	Max 335mm est	N3m E3m S5m W3m	2m	Semi mature	Good	Good	Off-site group. Ivy impedes survey. Unremarkable group.	10+	C	4.0m	50.8m ²
G21	Group of Common Alder (x5)	13m	Max 400mm est	N3m E3m S3m W3m	2m	Semi mature	Good	Good	Off-site group. Unremarkable group.	10+	C	4.8m	72.4m ²

Tree No.	Species	Height (m)	Trunk dia. at 1.5m	Canopy Spread	Crown Height (m)	Age Class	Physiological Condition	Structural Condition	Comments/ Recommendations	Useful Life Expect	BS5837 grade	Root Protection Area	
												Radius	RPA Area
T22	Common Alder (<i>Alnus glutinosa</i>)	10m	200mm 225mm est	N3m E3m S3m W3m	3m	Semi mature	Good	Good	Off-site tree. Unremarkable tree.	10+	C	3.6m	41.0m ²
T23	Common Alder (<i>Alnus glutinosa</i>)	10m	393mm	N1.5m E3.5m S4.5m W3m NW4m	2.5m	Semi mature	Good	Fair	Unremarkable tree. Co-dominant form with adjacent tree. Works required for development: Crown lift to 5m clearance above ground level over driveway.	10+	C	4.7m	69.9m ²
T24	Common Alder (<i>Alnus glutinosa</i>)	10m	259mm 182mm	N3m E3.5m S1.5m W2m	2m	Semi mature	Good	Fair	Unremarkable tree; three stemmed from 300mm with tight compression forks and minor included bark. Western stem has been topped at 1.5m with moderate decay. Works required for development: Crown lift to 5m clearance above ground level over driveway.	10+	C	3.8m	45.3m ²
T25	Apple (<i>Malus sp.</i>)	3m	239mm @750mm	N3m E3m S2m W3m	1.5m	Mature	Good	Fair	Unremarkable tree. Orchard tree. Crown has been previously heavily reduced.	10+	C	2.9m	25.8m ²

Tree No.	Species	Height (m)	Trunk dia. at 1.5m	Canopy Spread	Crown Height (m)	Age Class	Physiological Condition	Structural Condition	Comments/ Recommendations	Useful Life Expect	BS5837 grade	Root Protection Area	
												Radius	RPA Area
T26	Common Alder (<i>Alnus glutinosa</i>)	9m	258mm	N3m E2.5m S3.5m W3.5m NW2.5m	2m	Semi mature	Good	Good	Unremarkable tree.	10+	C	3.1m	30.1m ²
T27	Apple (<i>Malus sp.</i>)	5m	200mm est	N2m E2m S2m W4m	2.5m	Semi mature	Good	Good	Vegetation impedes survey. Unremarkable tree.	10+	C	2.4m	18.1m ²
T28	Red Oak (<i>Quercus rubra</i>)	12m	325mm est	N3.5m E4m S5.5m W4.5m	3m	Semi mature	Good	Good	Vegetation impedes survey.	20+	B	3.9m	47.8m ²
T29	Wild Cherry (<i>Prunus avium</i>)	7m	360mm	N5.5m NE3.5m E5m S6m W4m	1m	Early mature	Good	Good		20+	B	4.3m	58.6m ²
T30	Wild Cherry (<i>Prunus avium</i>)	5m	275mm est	N3m E4m S4m W2m NW5m	2m	Semi mature	Good	Good	Vegetation impedes survey. Unremarkable tree.	10+	C	3.3m	34.2m ²
T31	Deodar Cedar (<i>Cedrus deodara</i>)	12m	410mm	N4.5m E5m S4.5m W3m	1m	Early mature	Good	Good	Works required for development: Crown lift to 5m clearance above ground level over car port.	20+	B	4.9m	76.0m ²
G32	Group of Common Alder	13m	Max 150mm est	N3m E3m S3m W3m	2m	Young	Good	Good	Vegetation impedes survey. Unremarkable group.	10+	C	1.8m	10.2m ²
T33	Silver Birch (<i>Betula pendula</i>)	7m	110mm	N1.5m E0.5m S2m W1.5m	1.5m	Young	Good	Good	Unremarkable tree.	10+	C	1.3m	5.5m ²

Tree No.	Species	Height (m)	Trunk dia. at 1.5m	Canopy Spread	Crown Height (m)	Age Class	Physiological Condition	Structural Condition	Comments/ Recommendations	Useful Life Expect	BS5837 grade	Root Protection Area	
												Radius	RPA Area
T34	Goat Willow (<i>Salix caprea</i>)	10m	300mm @1m est	N3.5m E3.5m S4.5m W2m	1m	Semi mature	Good	Good	Unremarkable tree.	10+	C	3.6m	40.7m ²
T35	Common Oak (<i>Quercus robur</i>)	16m	800mm est	N7m E7m S7m W6m	2m	Mature	Good	Good	Ivy impedes survey. Medium sized deadwood 25mm to 100mm.	20+	B	9.6m	289.5m ²
T36	Silver Birch (<i>Betula pendula</i>)	11m	175mm est	N2m E1.5m S1.5m W2m	2m	Young	Good	Good	Unable to access close to tree. Unremarkable tree.	10+	C	2.1m	13.9m ²
G37	Group of Common Alder (x2)	7m	Max 150mm est	N2m E2m S2m W2m	3m	Young	Good	Fair	Multi-stemmed coppice.	10+	C	1.8m	10.2m ²
T38	Common Hazel (<i>Corylus avellana</i>)	4m	250mm @250mm est	N2.5m E2m S2.5m W2.5m	0m	Semi mature	Good	Fair	Multi-stemmed coppice.	10+	C	3.0m	28.3m ²
T39	Common Hazel (<i>Corylus avellana</i>)	4m	250mm @250mm est	N3m E3m S3m W3m	1.5m	Semi mature	Good	Fair	Multi-stemmed coppice.	10+	C	3.0m	28.3m ²
T40	Goat Willow (<i>Salix caprea</i>)	5m	173mm	N3m E3m S3m W3m	1m	Young	Good	Good	Unremarkable tree.	10+	C	2.1m	13.5m ²
T41	Goat Willow (<i>Salix caprea</i>)	11m	560mm @500mm	N5m E5.5m S4.5m W5m	1.5m	Mature	Good	Good	Unremarkable tree.	10+	C	6.7m	141.9m ²

Tree No.	Species	Height (m)	Trunk dia. at 1.5m	Canopy Spread	Crown Height (m)	Age Class	Physiological Condition	Structural Condition	Comments/ Recommendations	Useful Life Expect	BS5837 grade	Root Protection Area	
												Radius	RPA Area
T42	Common Oak (<i>Quercus robur</i>)	7m	270mm	N4m E3.5m S3.5m	1.5m	Semi mature	Good	Good	Unremarkable tree. Works required for development: Crown lift to 3m clearance above ground level over parking bays.	10+	C	3.2m	33.0m ²
T43	Common Oak (<i>Quercus robur</i>)	14m	500mm est	N4.5m E4m S6.5m W8m NW8m	2m	Mature	Good	Fair	Off-site tree. Eastern crown has been previously heavily reduced.	10+	C	6.0m	113.1m ²
T44	Monterey Cypress (<i>Cupressus macrocarpa</i>)	7m	700mm est	N3m E1m SE6m S7m W6m	0m	Mature	Good	Fair	Crown has been previously topped at 7m. Co-dominant form with adjacent trees.	10+	C	8.4m	221.7m ²
T45	Purple Plum (<i>Prunus cerasifera</i> 'Pissardii')	8m	331mm	N4.5m E4m S4.5m W3.5m	1m	Mature	Good	Fair	Small Ganoderma adspersum fungal fruiting body on northern buttress.	10+	U	4.0m	49.6m ²
T46	Plumleaf Crab Apple (<i>Malus prunifolia</i>)	5m	142mm	N2.5m E3m S3m W3.5m	0m	Mature	Good	Good	Unremarkable tree.	10+	C	1.7m	9.1m ²
T47	Crab Apple (<i>Malus sp.</i>)	3m	124mm	N2.5m E2m S2.5m W3m	1.5m	Early mature	Good	Good	Unremarkable tree.	10+	C	1.5m	7.0m ²
T48	Goat Willow (<i>Salix caprea</i>)	4m	200mm @250mm est	N3m E4m S3.5m W4m	0.5m	Semi mature	Good	Fair	Multi-stemmed coppice. Works required for development: Re-coppice back to stool.	10+	C	2.4m	18.1m ²

Tree No.	Species	Height (m)	Trunk dia. at 1.5m	Canopy Spread	Crown Height (m)	Age Class	Physiological Condition	Structural Condition	Comments/ Recommendations	Useful Life Expect	BS5837 grade	Root Protection Area	
												Radius	RPA Area
T49	Goat Willow (<i>Salix caprea</i>)	6m	350mm @1m est	N4m E3.5m S2m W2m	7m	Semi mature	Good	Good	Unremarkable tree. Works required for development: Coppice to ground level and allow to re-shoot.	10+	C	4.2m	55.4m ²
T50	Purple Plum (<i>Prunus cerasifera</i> 'Pissardii')	6m	125mm 150mm 125mm 150mm est	N4m E1m S3m W3m	3m	Semi mature	Good	Good	Four stemmed from 300mm with tight compression forks and minor included bark.	10+	C	3.3m	34.5m ²
G51	Group of Leyland Cypress (x2)	12m	Max 300mm est	N3m E2m S4m W3m	2m	Semi mature	Good	Good	Unremarkable group.	10+	C	3.6m	40.7m ²
T52	Myrobalan Plum (<i>Prunus cerasifera</i>)	3m	136mm	N2m E2m S3m W2m	2m	Semi mature	Good	Good	Unremarkable tree.	10+	C	1.6m	8.4m ²
T53	Rowan (<i>Sorbus aucuparia</i>)	6m	176mm	N3m E3.5m S3.5m W3.5m	2m	Mature	Good	Good	Unremarkable tree.	10+	C	2.1m	14.0m ²
T54	Wild Cherry (<i>Prunus avium</i>)	8m	304mm	N4m E3.5m S5m W4m	2m	Semi mature	Good	Good	Unremarkable tree.	10+	C	3.6m	41.8m ²
T55	Cider Gum (<i>Eucalyptus gunnii</i>)	5m	300mm est	N3m E1m S1m W2.5m	1.5m	Mature	Good	Poor	Regrowth from heavily decaying stump.	<10	U	3.6m	40.7m ²
T56	Norway Maple (<i>Acer platanoides</i>)	9m	325mm	N4m E3.5m S4m W3.5m	2m	Semi mature	Good	Good	Unremarkable tree.	10+	C	3.9m	47.8m ²

Tree No.	Species	Height (m)	Trunk dia. at 1.5m	Canopy Spread	Crown Height (m)	Age Class	Physiological Condition	Structural Condition	Comments/ Recommendations	Useful Life Expect	BS5837 grade	Root Protection Area	
												Radius	RPA Area
T57	Goat Willow (<i>Salix caprea</i>)	11m	268mm 311mm 148mm 305mm	N6m E7m S6.5m W4m	1.5m	Early mature	Good	Good	Unremarkable tree. Crown has been previously reduced.	10+	C	6.4m	128.2m ²
T58	Common Hawthorn (<i>Crataegus monogyna</i>)	5m	125mm est	N2m E2m S2m W2m	2m	Young	Good	Good	Ivy impedes survey. Unremarkable tree.	10+	C	1.5m	7.1m ²
T59	Crimson King Norway Maple (<i>Acer platanoides</i> 'Crimson King')	13m	477mm	N4m E5m S5.5m W5.5m	1.5m	Early mature	Good	Good		20+	B	5.7m	102.9m ²
T60	Wild Cherry (<i>Prunus avium</i>)	7m	450mm @1m	N5m E6.5m S5.5m SW6m W3m	1m	Mature	Good	Good		20+	B	5.4m	91.6m ²
T61	Common Hawthorn (<i>Crataegus monogyna</i>)	6m	200mm est	N3m E3m S3m W3m	2m	Semi mature	Fair	Good	Vegetation impedes survey. Crown heavily overgrown with brambles.	10+	C	2.4m	18.1m ²
T62	Silver Birch (<i>Betula pendula</i>)	13m	400mm est	N5m E5.5m S6m W3m	2.5m	Mature	Good	Good	Off-site tree. Unremarkable tree.	10+	C	4.8m	72.4m ²
T63	Common Beech (<i>Fagus sylvatica</i>)	10m	343mm	N5.5m NE5.5m E3.5m S6m W5m	1m	Semi mature	Good	Good	Unremarkable tree.	10+	C	4.1m	53.2m ²

Tree No.	Species	Height (m)	Trunk dia. at 1.5m	Canopy Spread	Crown Height (m)	Age Class	Physiological Condition	Structural Condition	Comments/ Recommendations	Useful Life Expect	BS5837 grade	Root Protection Area	
												Radius	RPA Area
T64	Variegated Sycamore 'Simon-Louis Frères' (<i>Acer pseudoplatanus</i> f. <i>variegatum</i> 'Simon-Louis Frères')	15m	582mm @750mm	N7m E7m S6m W4m	2m	Mature	Good	Fair	Low crown break with tight compression forks and minor included bark.	20+	B	7.0m	153.2m ²
T65	Silver Birch (<i>Betula pendula</i>)	8m	243mm	N2m E3m S2.5m W2m	2m	Semi mature	Good	Good	Unremarkable tree.	10+	C	2.9m	26.7m ²
T66	Silver Birch (<i>Betula pendula</i>)	9m	295mm	N4m E4m S3.5m W2m	1m	Early mature	Good	Fair	Unremarkable tree. Crown has been previously topped at 8m.	10+	C	3.5m	39.4m ²
T67	Norway Maple (<i>Acer platanoides</i>)	5m	245mm	N3m E3.5m S3.5m W2m	2m	Young	Good	Good	Unremarkable tree.	10+	C	2.9m	27.2m ²
T68	Norway Maple (<i>Acer platanoides</i>)	8m	428mm	N6m E6m S6m W6m	2m	Early mature	Good	Good		20+	B	5.1m	82.9m ²
T69	Silver Birch (<i>Betula pendula</i>)	13m	368mm	NE4.5m SE3.5m SW3.5m NW4.5m	2m	Early mature	Good	Good		20+	B	4.4m	61.3m ²
T70	Common Pear (<i>Pyrus communis</i>)	10m	190mm 277mm 324mm	NE4.5m SE4.5m SW3.5m NW4.5m	1.5m	Early mature	Good	Fair	Unremarkable tree. Three stemmed from 200mm.	20+	B	5.6m	98.5m ²
T71	Myrobalan Plum (<i>Prunus cerasifera</i>)	4m	130mm	N2.5m E2m S2.5m W2.5m	1m	Young	Good	Good	Unremarkable tree.	10+	C	1.6m	7.6m ²

Tree No.	Species	Height (m)	Trunk dia. at 1.5m	Canopy Spread	Crown Height (m)	Age Class	Physiological Condition	Structural Condition	Comments/ Recommendations	Useful Life Expect	BS5837 grade	Root Protection Area	
												Radius	RPA Area
T72	Cherry sp. (<i>Prunus sp.</i>)	2m	404mm @1m	N3.5m E3m S2m W3.5m	0m	Early mature	Good	Good	Unremarkable tree. Low main fork union and plateaued crown at 1.2m.	10+	C	4.8m	73.8m ²
G73	Group of Contorted Willow (x2)	5m	Max 175mm est	N2m E2m S2m W2m	2m	Young	Good	Good	Unremarkable tree.	10+	C	2.1m	13.9m ²
T74	Evergreen Magnolia (<i>Magnolia grandiflora</i>)	5m	130mm	N2m E2m S2m W2m	2m	Young	Good	Good	Unremarkable tree.	10+	C	1.6m	7.6m ²
T75	Kohuhu (<i>Pittosporum tenuifolium</i>)	-	-	-	-	Semi mature	Good	Poor	Three stems at ground level have split and stems have failed.	<10	U	-	-

Appendix 3 – Tree Constraints Plan 1 – RMT1189 – TCP1

Tree constraints plan (TCP) showing retained trees, tree numbers, root protection areas (magenta circles/polygons) and canopy spreads (green lines). The plan has been provided separately as a PDF at a scale of 1: 250 @ A2.



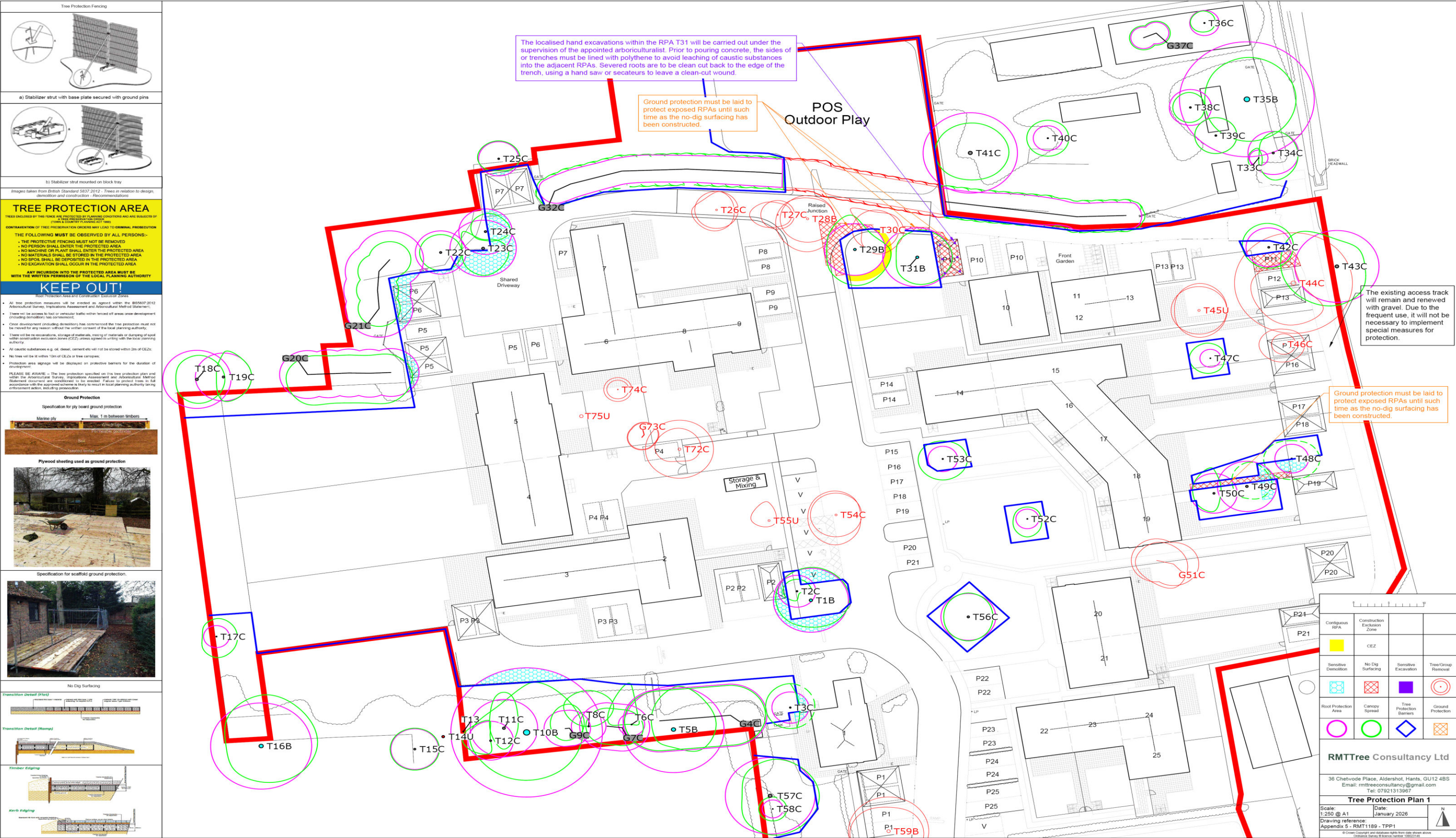
Appendix 4 – Tree Constraints Plan 2 – RMT1189 – TCP2

Tree constraints plan (TCP) showing retained trees, tree numbers, root protection areas (magenta circles/polygons) and canopy spreads (green lines). The plan has been provided separately as a PDF at a scale of 1: 250 @ A2.



Appendix 5 – Tree Protection Plan 1 – RMT1189 – TPP1

Tree protection plan (TPP) showing retained trees, tree numbers, root protection areas (magenta circles/polygons) and canopy spreads (green lines). The location of protective fencing is shown as blue lines, ground protection as orange hatching, no dig surfacing as red hatching, sensitive demolition as light blue hatching, sensitive excavation as solid purple, contiguous RPA as solid yellow and tree removals as red outlines. The plan has been provided separately as a PDF at a scale of 1: 250 @ A2.



Appendix 6 – Tree Protection Plan 2 – RMT1189 – TPP2

Tree protection plan (TPP) showing retained trees, tree numbers, root protection areas (magenta circles/polygons) and canopy spreads (green lines). The location of protective fencing is shown as blue lines, ground protection as orange hatching, no dig surfacing as red hatching, sensitive demolition as light blue hatching, sensitive excavation as solid purple, contiguous RPA as solid yellow and tree removals as red outlines. The plan has been provided separately as a PDF at a scale of 1: 250 @ A2.



Appendix 7 – Arboricultural site supervision schedule

Activity	Supervision Required
Pre-commencement meeting between the local authority arboricultural officer, the appointed arboriculturalist and the appointed building contractor.	✓
During sensitive excavations within the RPA of T31.	✓
At any time that there are conflict issues with the agreed tree protection.	✓

Following every visit the appointed arboriculturalist will fill out the site monitoring form which is shown at **Appendix 8** and this will be forwarded to the LPA.

Appendix 8 – Site monitoring form

RMTTree Consultancy Ltd 			
Site monitoring form			
Date of visit		Site	
Consultant in attendance			
Observations/status of tree protection/comments:			
Recommendations (if necessary):			
Date of next visit		Signature	



Cellweb® TRP Installation Guide



Step 1: Prepare Surface



Step 2: Lay out Treetex™



Step 3: Lay out Cellweb® TRP

- Cellweb® TRP is a NO DIG tree root protection measure and it is recommended that no excavation be performed without prior approval and guidance from the Local Authority Arboricultural Officer.
- Soil compaction from vehicles, machinery and materials is to be strictly prohibited during construction within Root Protection Areas (RPAs).
- Approval must be obtained from the Local Authority that the design and the method of construction is acceptable.
- Further information is available from the following two documents;
 - British Standard BS5837: 'Trees in Relation to Design, Demolition and Construction' (2012).
 - Arboricultural Advisory and Information Service: Practice note 12 – 'Through the Trees to Development' (APN12).

Installation Method

1. Prepare the Surface

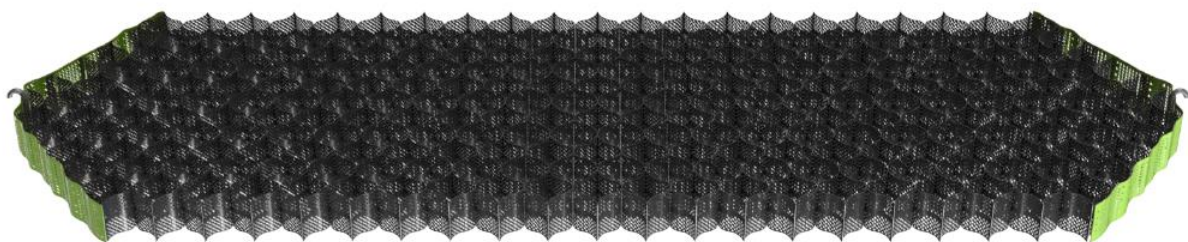
- Remove the surface vegetation using appropriate hand held tools or herbicide (see Note 1).
- Remove any surface rocks, debris and organic material.
- Create a level surface by filling any hollows with clean angular stone or sharp sand.
- Do not level off high spots or compact the soil through rolling.

2. Lay out the Treetex™ Non-Woven Geotextile

- Lay out the Treetex™ over the prepared area, overlaying the edges of the required area by 300mm.
- Overlap any joins by 300mm minimum or more, depending on soil structure (see Note 2).

3. Lay out the Cellweb® TRP Cellular Confinement System

- Lay out the collapsed Cellweb® TRP on-top of the Treetex™.
- Place one of the supplied J pins into the centre cell at the end of the panel and secure into the ground.



Cellweb® TRP - Installation Guide

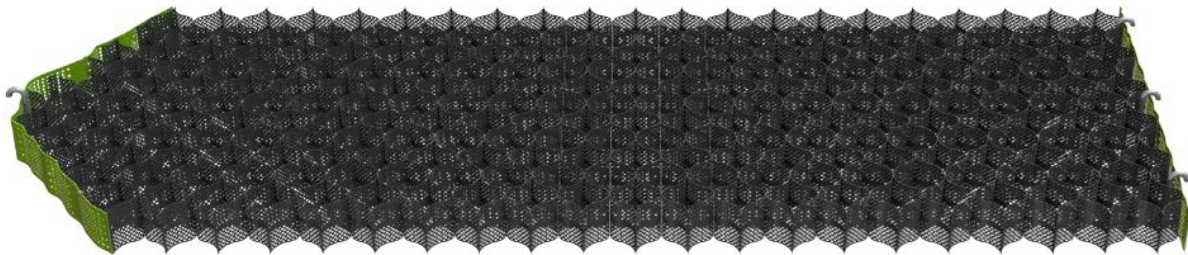


Step 3: Pinning Cellweb® TRP

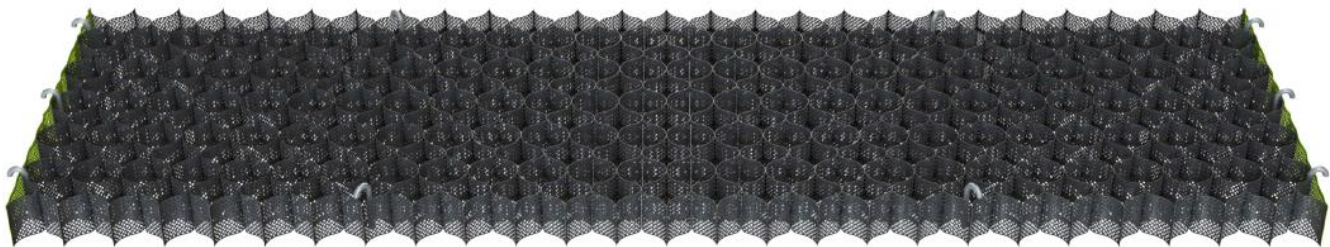


Step 3: Stapling Cellweb® TRP

- Pull out the Cellweb® TRP to its full 8.1m length and secure its length with another J pin.



- Now measure its width to 2.56m and secure in each of the corners with the J pins.
- Use 10 pins per panel to create a panel measuring 8.1m x 2.56m.



- This will produce a cell size of 259mm x 224mm which is the required cell diameter. Each cell must be fully extended and under tension.
- Staple adjacent panels together at each cell (see Note 3).
- If a curved path or shape is required, this should be cut when the Cellweb® TRP panel is pinned out to 8.1 x 2.56m, ensuring complete cells remain. Do not try to curve or bend the Cellweb® TRP panels into place.
- All cells must be fully opened to the required diameter.

Cellweb® TRP - Installation Guide



Step 4: Clean Angular Stone



Step 5: Edge Restraints



Step 6: Surface Options

4. Infill the Clean Angular Stone

- The infill material must be a clean angular stone, Type 4/20mm or Type 20/40mm (see Note 4).
- Do not use M.O.T type 1 or crushed stone with fines for tree root protection.
- Infill the Cellweb® TRP cells with the clean angular stone, working towards the tree and using the infilled panels as a platform.
- Minimum 25mm overfill of clean angular stone when used in conjunction with a hard surface.
- No compaction is required of the infill. Do not use a whacker plate or other means of compaction.
- Encourage settlement of the stone with the use of a light roller or with 2-3 passes of the construction plant used for installation.
- If the clean angular stone is being used as the final surface; regular maintenance will be required to ensure a minimum overfill of 50mm.

5. Edge restraints

- Excavations for kerbs and edgings should be avoided within the RPAs.
- Where edging is required for footpath and light structures, a peg and treated timber board edging is acceptable
- Other options include wooden sleepers, kerb edging constructed on-top of the Cellweb® TRP system, plastic and metal edging etc.

6. Surface options

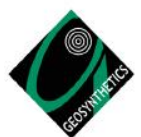
- All surfaces in Root Protection Areas must be porous. Surfaces can include block paving, asphalt, loose gravel, grass and gravel retention systems (e.g Golpla), resin bound gravel, concrete etc.

NOTES

1. **Herbicide:** According to BS5837:2012 "The use of herbicides in the vicinity of existing trees should be appropriate for the type of vegetation to be killed, and all instructions, warnings and other relevant information from the manufacturers should be strictly observed and followed. Care should be taken to avoid any damaging effects upon existing plants and trees to be retained, species to be introduced, and existing sensitive habitats, particularly those associated with aquatic or drainage features."
2. **Geotextile:** We recommend the installation of a Treetex™ under the Cellweb® TRP, or under the sub-base, if installed. The overlapping between adjacent rolls of Geotextile should be: CBR > 3%: 300mm minimum, CBR between 1% and 3%: 500mm minimum. CBR ≤ 1%: 750mm minimum.
3. **Staples:** Number of staples per join: 200mm: 5 staples. 150mm: 4 staples. 100mm: 3 staples. 75mm: 3 staples.
4. **Granular Fill:** Open graded sub-base, clean angular stone Type 4/20 or Type 20/40. Please refer to BS7533-13:2009 and to the Design Manual for Roads and Bridges (DMRB), Volume 4 Geotechnics and Drainage, Section 1 Earthworks, HA44/91, Volume 7 – IAN 73/06 Design Guidance for road pavement foundations and Manual of Contract Documents for Highway Works (MCHW), Volume 1 Specification for Highway Works for the construction and maintenance of the fill material.

This information corresponds to our current knowledge on the subject. It is offered solely to provide possible suggestions for your own experimentation. It is not intended, however, to substitute for any testing you may need to conduct to determine for yourself the suitability of our products for your particular purposes. This information may be subject to revision as new knowledge becomes available. Since we cannot anticipate all variations in actual end use conditions, Geosynthetics Limited makes no warranties and assumes no liabilities in connection with this information. Nothing in this publication is to be considered as a licence to operate under or a recommendation to infringe any patent right.

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Appendix 10 – Qualifications and experience

Robert Toll has been working with trees since 2004 when he completed his studies.

In 2000 he began his studies at Riseholme College, Lincoln where achieved a pass with merit in Forestry at National Diploma level. In 2002 he attended Moulton College in Northampton where he gained a Level Five Higher National Diploma in Urban Forestry with merit.

In 2004 Robert began work as a temporary tree inspector at Northampton Borough Council, undertaking inspections of trees in response to enquiries from the public. After 4 months Robert took up a permanent tree inspector role at Coventry City Council which predominantly involved undertaking safety inspections of trees on school sites.

In 2006 Robert moved to Warwick District Council to take up a temporary post of Tree Protection Officer which involved reviewing old area tree preservation orders and identifying those trees which were considered worthy of protection under new specific orders. He also streamlined the council procedure for making new tree preservation orders, cutting the time from making to serving from up to 2 weeks to within 2 hours.

In 2008 Robert moved to Hart District Council, Hampshire to take up the role of Tree Officer within the planning department. This role included determining works trees applications, commenting on planning proposals, liaising with the public and providing arboricultural advice to other departments within the Council.

Between 2014 and 2016 Robert took up the role of Tree Officer at Elmbridge Borough Council, Surrey, once again carrying out tasks such as determining works trees applications, commenting on planning proposals and liaising with the public. While at Elmbridge Borough Council he passed the Arboricultural Association's Professional Tree Inspection course.

Robert is a professional member of the Arboricultural Association.