



Reeves Arboricultural Services

Arboricultural Survey, Impact Assessment and Method statement

as per BS5837:2012 Trees in relation to design demolition and construction- Recommendations
at

130 Field End Road,
HA5 1RJ



File Ref: ASIAMS202.1

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1. Summary

1.1 Instruction

1.1.1 Reeves Arboricultural Services were instructed to carry out an Arboricultural Survey and subsequently prepare an Arboricultural Impact Assessment (AIA) and Arboricultural Method statement (AMS) by Matei Mitrache of 2XMA, at 130 Field End Road, Ruislip, Pinner HA5 1RJ. This report contains:

1.2 Arboricultural Survey (AS)

1.2.1 A tree survey as per the requirements for BS5837:2012 was carried out. Existing significant trees within 150 Field End Road and neighbouring land that were deemed necessary for consideration were recorded within the Arboricultural survey (AS). The results of the survey are presented within this report.

1.3 Arboricultural impact assessment (AIA)

1.3.1 The Arboricultural Impact Assessment (AIA) examines the relationship between trees and adjacent features (present and proposed). It examines how the trees and features will interact, influence and impact each other.

1.3.2 The purpose of the AIA study is to determine whether the proposed development will adversely affect the established trees and whether these trees will be the cause of nuisance to the proposed development.

1.4 Arboricultural method statement (AMS)- General guidance

1.4.1 A method statement with general guidance has been created to incorporate the proposed development and prevent or minimise impact from the proposed development and the construction process upon the retained trees.

2. Introduction

2.1 Development proposals

2.1.1 It is understood the proposals include the demolition of an existing outbuilding, and the erection of an extension to the existing building.

2.2 Site, location and details

2.2.1 The existing site comprises a terraced commercial building and a small single storey outbuilding.

2.2.2 150 Field End Road is located within a parade of commercial premises within the generally suburban residential area of Eastcote. The site is within the London borough of Hillingdon.

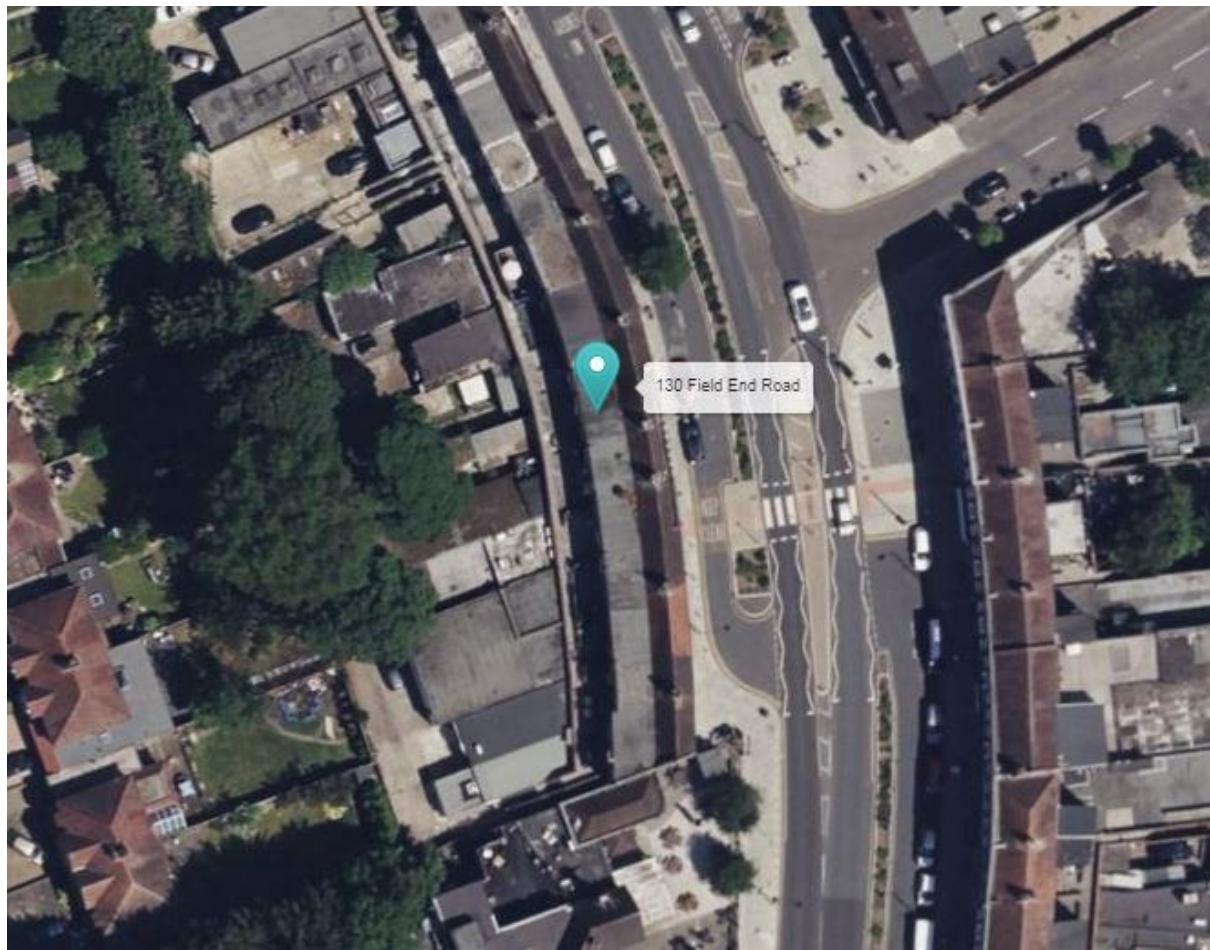


Fig. 1. Satellite view – OpenStreetMap 2024

2.2.3 From the information provided within the London Borough of Hillingdon interactive map, the site is not within a conservation area and there are no TPOs protecting trees within the site, or in neighbouring land.

2.2.4 This site is not a site of specific scientific interest.

2.2.5 The Geology of Britain viewer <https://geologyviewer.bgs.ac.uk/> has been used to check the prevailing soil type in the area. This indicates that the underlying bedrock comprises of clay, silt and sand – London Clay Formation. No superficial deposits are listed.

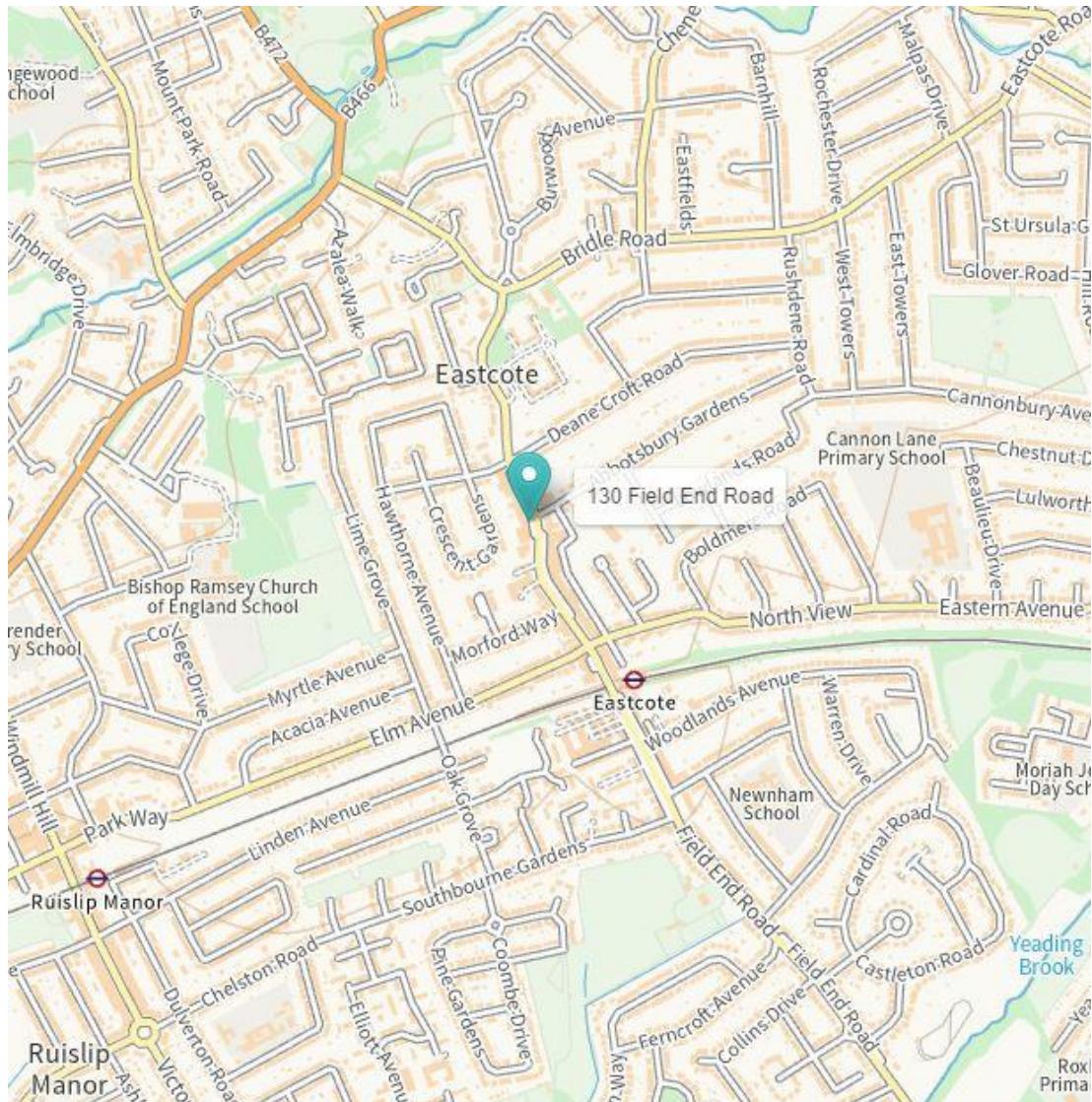


Fig. 2. Map of area – Ordnance Survey 2024

2.3 Planning status

2.3.1 It is understood that this report is in support of a planning application to erect a new single-story extension to the site.

2.4 Scope of this study and limitations

2.4.1 The purpose of this report is to assess the trees in and around the site and to consider the proposals in relation to those trees. This report aims to enable appropriate planning to ensure a well-considered approach to the design and implementation processes is achieved regarding the trees.

2.4.2 This report is not concerned with the health and safety risks these trees could pose, other than determining the categorisation and establishing acceptable levels of risk for the proposed land use, nor is it to decide whether planning permission should or should not be granted.

2.4.3 The surveying was carried out from ground level. No aerial inspections, decay detection or further arboricultural testing has taken place at the time of writing this report.



2.4.4 No ecological or soil surveys have taken place.

2.4.5 The trees within neighbouring land have not been fully inspected. The trunk of T006 has been measured, however the trunk measurements and therefore RPAs of all other neighbouring trees have been estimated and observations of visible parts of the trees have been made from accessible land. Categorisations have been made on this information only.

2.4.6 No topographical survey data has been provided. During the arboricultural survey the trees were plotted with GPS and measurements were taken to ensure the positioning of the trees were as accurate as possible within the limitations of the method of surveying.

2.5 Abbreviations used in this report.

2.5.1 Abbreviations - General abbreviations used in this report:

- RPA (root protection area).
- DBH (diameter at breast height- which is classified as 1.5m above ground level).
- agl (above ground level).
- TPO (tree preservation order).
- AC (Arboricultural consultant- an appointed consultant who oversees the tree related matters)
- N, E, S, W (compass point direction and combination of points i.e. NE= North east).
- T001- identifier of individual tree.
- G001- identifier of a group of trees.

3. Arboricultural survey

3.1 Methodology

3.1.1 The trees were inspected from ground level by consultant arboriculturalist Ross Fountain on 6th of September 2024.

3.1.2 Categorisation was made, and measurements were taken in accordance with the recommendations set out in *BS5837:2012*. Canopy spreads were measured and plotted to the four compass points. Where direct access was not possible measurements have been estimated.

3.1.3 The surveyed trees are colour coded on the accompanying tree survey plans according to their relevant BS category.

3.1.4 The tree data collected was used to show the current canopy spread and shading of the surveyed trees and to calculate the Root Protection Areas (RPAs). These are plotted on the accompanying plans (ASIAMS202- M01, M02 and M03).

3.1.5 The standard RPA used is defined by the formula in paragraph 4.6 from the *BS 5837:2012* and may be refined by considering current on-site constraints to rooting activity such as buildings, underground structures, earthworks, and hard paving.

3.2 Survey results- summary

3.2.1 The detailed results of the tree survey are provided in **1. Tree Survey Data** in the Appendix.



3.2.2 There were 6 individual trees and 1 group listed within, or near to the site. One individual tree was within the land of 130 Field Road and five individual trees, and a group were in neighbouring land.

3.2.3 The trees were considered of moderate quality, with all trees classified in the moderate quality-category B. However, the categorisation of all trees in neighbouring land, except for T006 was based upon limited information.

3.2.4 The group of trees- G001 and a street tree- T006 (*Betula pendula*) have been considered although being a significant distance away from the proposed development. This is because the likely access point to the development is the driveway the runs parallel to Field End Road, to the West.

3.3 The Survey Key

3.3.1 Ref – The identification number given to the tree. The previous numbers assigned by the topographic data has also been provided.

3.3.2 Species – Common/English and botanical name of the tree.

3.3.3 Feature – type of feature, including: tree, group, hedge and number of stems where applicable.

3.3.4 Measurements:

- Height – Height of each tree in metres
- Stem diameter – Diameter of the stem at 1.5 metres above ground level
- Spread – Crown spread in four compass points
- Crown clearance – height in metres above ground level of the lowest part of the canopy
- Lowest branch – height and direction of the lowest branch.
- Life stage – maturity
- Remaining Contribution – considered life expectancy in years

3.3.5 General observations – observations recorded during the survey

3.3.6 RPA – Radius in metres and full Root Protection Area in square metres

3.3.7 Physiological condition – the condition in relation to the functions of the tree as an organism

3.3.8 Structural condition – the condition in relation to the structure of the tree and structural integrity

3.3.9 Preconstruction recommendations – Recommendations based upon findings and proposals.

3.3.10 Category – categorisation of the tree as per BS5837:2012, with colours presented on the tree survey map in the appendix (ASIA156-M01):

- A – Tree of high quality with an estimated life expectancy of at least 40 years
- B – Tree of moderate quality with an estimated life expectancy of at least 20 years
- C – Tree of low quality with an estimated life expectancy of at least 10 years
- U – Tree of low quality that is in such a condition that it cannot be retained as a living tree for longer than 10 years and therefore may be unsuitable for retention.

In addition to the categorisation letter, a number is attributed to category A, B and C trees. These numbers relate to the following qualities and values:

- 1- Mainly arboricultural qualities
- 2- Mainly landscape qualities
- 3- Mainly cultural values, including conservation



4. Arboricultural impact assessment (AIA)

4.1 Objectives:

4.1.1 To assess the proposals in relation to the trees in and around site, particularly where works are proposed to be carried out in close proximity to the retained trees.

4.1.2 To determine whether the proposed works can be carried out successfully without adversely affecting the trees, both in the short and long term.

4.1.3 To determine whether the trees will have adverse impacts on the proposed development, both in the short and long term.

4.1.4 To assess if any alterations to the design or mitigation is necessary due to conflicts between retained trees and the proposed development.

4.2 Items for consideration

4.2.1 Direct impacts from tree losses, in terms of direct visual impact, environmental impact and impact on the landscape character of the area.

4.2.2 Root disturbance caused by demolition, excavation & construction.

4.2.3 Installation of services in close proximity to the retained trees and associated damage.

4.2.4 Grade/ground level and surface alterations that may have implications for tree root systems.

4.2.5 New planting- design of the scheme and associated landscape operations

4.2.6 Sunlight shading of buildings or exterior amenity areas (such as gardens, patios etc.), which may lead to pressure to prune or fell.

4.2.7 Physical encroachment by roots, tree stems and branches. Allowance for future tree growth.

4.2.8 Likelihood of indirect damage to the proposed development caused by retained trees.

4.2.9 Health, safety and nuisance items e.g. leaves, fruit and residues, which may lead to pressure to prune or fell.

4.2.10 Location of welfare/office buildings & materials storage.

4.2.11 Likelihood of damage to retained trees caused by the likely development activities and prevention through tree protection measures.

4.2.12 Whether access pruning is required prior to enable access and prevent damage to retained trees.

4.2.13 Other tree works required to reduce risk to suitable levels given the proposed land use.

4.3 Results of Analysis- Summary

4.3.1 There are no trees that will require removal to enable the proposed development.



4.3.2 Although there is some risk of root disturbance caused by demolition, excavation and construction, the risks will be controlled to a suitable level by protection measures and through specific construction methods within RPAs.

4.3.3 General guidance to minimise or prevent potential impacts on retained RPAs or above ground tree structures, are set out in the Arboricultural method statement (AMS)- General guidance. A tree protection plan, ref: ASIAMS202- M03 is provided in the appendix.

4.4 Results of Analysis- general

4.4.1.1 There are no trees that will require removal to enable the proposed development.

4.4.2.1 There is some risk of root disturbance to retained trees caused by demolition, excavation and construction. These risks will be controlled through several measures including: demolition methodology, ground protection measures, tree protection fencing and specific foundation support.

4.4.2.2 Part of the construction of the proposed extension is within the RPA of a T001 (Sycamore) therefore, traditional strip foundations are not suitable in this area. It is proposed that the section of the extension that is within the RPA of T001 is constructed with a reinforced concrete slab cast above existing ground level and this section of the supported by strip foundations outside of the RPA and a cantilevered steel frame. The soil will be protected from concrete leaching. Further detail and protection measures are provided in the arboricultural method statement.

4.4.2.3 A small enclosure, housing a water booster and heater is proposed within the RPA of T001. This will be supported by existing hardstanding if suitable, or with an anti-compaction cellular confinement system, such as Cellweb ®TRP and therefore no impact is expected.

4.4.2.4 The current rooting conditions are not considered to be favourable due to the hardstanding through much of the rooting area of T001, the assumed compacted ground and likely damage caused by previous construction. Therefore, the addition of the extension- given the proposed construction methods and protection measures is not expected to have a negative impact upon retained trees.

4.4.3 No service plans have been provided at this stage. However, if any new service installation is required these shall be carried out in accordance with the NJUG guidelines- *Volume 4, NJUG Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees*. Therefore, the impact of service installation is expected to be low.

4.4.4 No landscaping changes have been proposed therefore no impact is expected.

4.4.5 No new planting scheme has been supplied as no tree removals are necessary.

4.4.6 Shading by the existing trees to the proposed development is considered to have no significant impact upon the proposed development given the design and use of the proposed extension. Therefore, the pressure to prune or fell trees as a result of shading is considered to be low.

4.4.7 The impact of physical encroachment by parts of the retained trees upon the proposed development is considered to be low. The pruning of the low canopy of T001 will ensure that the branches will not encroach on the new studio. The clearance of the canopy of T001 will be straight forward to maintain. The risk of encroachment and potential impact from root expansion is considered to be low given the distance of the extension from the trunk. This risk will be further minimised if a void can be created underneath the section of the extension above the RPA of T001. Incremental growth of the trunk of T001 is not considered to be of concern in terms of physical encroachment as the extension is a sufficient distance from the tree.



4.4.8 Given the recorded soil type- London Clay, comprising of clay, silt and sand (underlying bedrock) and the trees within the area of the development, there is a risk of indirect impact. It is therefore expected the project engineer will provide suitable foundation specifications given this potential. Therefore, the risk of impact from shrinkable soil is not considered significant.

4.4.9 There are no significant impacts anticipated on the proposed development by health and safety nuisances such as leaves, fruit and residue. Falling leaves and debris from several trees may cause minor impact through a build-up of material on the roof of the proposed extension and within the water collection system. However, this impact can be minimised through periodic cleaning and maintenance and leaf/ gutter guards. Therefore, no pressure to prune or fell from nuisances is anticipated.

4.4.10 There is some, but limited, space for skips, storage of materials and welfare/ site office facilities within the site. This space is within the areas outside of RPAs, within RPAs on top of retained hardstanding, or potentially on the roadside in Meadow way. These should be located as per the prohibitions and precautions within RPAs.

4.4.11 The likelihood of damage cause by the development to the retained trees is considered to be low and protection measures are provided in this document.

4.4.12 Minor pruning has been recommended to tree T001 to enable access and prevent damage to this tree. It is also likely that G001 and T006 will require access pruning. The extent of this pruning will depend on the vehicle and machinery requirements. The guidance in this document in **5.8 Pruning** provides further information and procedures regarding pruning.

4.4.13.1 No significant tree works have been deemed necessary to reduce risk to suitable levels given the proposed land use. It has been recommended to remove the deadwood that is over 25mm in diameter from T001 (sycamore). This work has been deemed necessary to reduce the risk of damage caused by falling deadwood, given the proximity of the proposed extension in relation to the canopy of T001.

4.4.13.2 It should also be noted that the majority of the trees listed have not been fully surveyed. The trees that are within influencing distance of the land should be appropriately managed by the respective landowners, including being surveyed by an appropriately experienced and qualified person.

4.5 Conclusions of AIA

4.5.1 There is no significant impact expected upon the retained trees through the proposed development. There are no tree losses required to enable the proposals.

4.5.2 If the guidance in this report is followed the likelihood of indirect or direct damage to the retained trees is considered to be low. Therefore, it is considered the proposed works can be carried out successfully without adversely affecting the trees, both in the short and long term.

4.5.3 It is considered the retained trees will not have adverse effects on the proposed development, both in the short and long term.

4.5.4 No alterations have been provided to the proposals as it has been considered a low impact scheme.

5. Arboricultural Method Statement (AMS)- General guidance

5.1 Overview



5.1.1 The key protection issues associated with this project in relation to the existing trees, in the short, medium, and long term, are the requirement for:

- The protection of tree habitat
- The protection of the retained trees from damage to the above and below ground structures
- The protection of the soil structure and prevention of damage to tree root systems by chemicals and other noxious substances/materials.
- The protection of the proposed built structures from impacts caused by the retained trees

5.2 Introduction

5.2.1 This AMS sets out some general management and protection details in support of the planning proposal, and they must be implemented to ensure successful tree retention.

5.2.2 The AMS provides guidance on the typical range of processes that are involved during development and attempts to ensure that suitable methods of implementation are carried out.

5.2.3 The AMS also aims to provide an overview of the development process and attempts to address any potential issues and conflicts that may arise and provide acceptable solutions, resolving them in line with current industry best practices.

5.2.4 An arboricultural sequencing of events schedule is provided in the appendix of this report and is to be used in conjunction with the finalised tree protection plan to avoid potential breaches of planning and delays to the development. The arboricultural sequencing of events and site monitoring should be integrated into the planning of the development.

5.3 Development methodology and mitigation- key considerations only

5.3.1 As there are no tree removals required no mitigation has been provided.

5.3.2.1 The risk of damage caused by demolition excavation and construction will be controlled by several measures listed in **5.3.2.2- 5.3.2.9**.

5.3.2.2 Ground protection measures will include retaining the existing hard surfacing within RPAs during the demolition phase. The upper structure of the outbuilding can be removed with machinery, as long as this machinery is only used on top of existing hardstanding or temporary ground protection. The same restriction applies to the parts of the demolished building. This must only be collapsed onto or stored on top of existing hardstanding or temporary ground protection. The lower section of the building must be demolished carefully to avoid damaging the soil structure through demolition. When it is necessary to remove hardstanding within RPAs and the footings of the outbuilding this must be carried out with hand tools, including hand operated pneumatic breakers, rather than with excavators that would otherwise risk damaging roots and the soil structure around them.

5.3.2.3 If rooting activity is discovered and exposed in the removal of the concrete slab the AC should be contacted. In this case soil and mulch may be required to be applied to the area to avoid root damage occurring. Any exposed roots should temporarily be covered with hessian and kept damp to avoid desiccation or any sudden changes in temperature, see **5.4 Prohibitions and precautions within RPAs**.

5.3.2.4 The risk of damage in construction of the proposed extension will be controlled by the foundation design and building method. It is proposed that the section of the extension that is within the RPA of T001 is constructed with a reinforced concrete slab, cast above existing ground level and this section is supported by strip foundations outside of the RPA and a cantilevered steel frame.



5.3.2.5 The soil must be protected from concrete leaching when the concrete slab and the footings on the edge of the RPA of T001 is poured. A clean undamaged, non-permeable membrane must be used to protect the soil on the west side of the footings and any other soil where leaching and soil contamination is possible within, or on the edge of RPAs.

5.3.2.6 If it is possible, a void should be incorporated within RPAs underneath the slab. This must not take place through excavation of soil, but by replacing the hardstanding and non-growing medium with a void using a void former or another suitable method. Incorporating a void will allow air movement, continued gaseous exchange and some natural migration of organic matter. The void height should be maximised as possible and mulch also applied if possible. Where applying mulch, this should be clean, well composted and added in a layer between 2 and 3 inches deep. Mulching is likely to have multiple benefits including localised better long-term soil structure and root health.

5.3.2.7 If a void is incorporated under the extension, then connecting a length of porous pipe laid under the proposed studio, ideally with a system to control the flow, to the water collection system would be beneficial. This system would provide additional water availability to roots and a way of controlling the water volume also. However, this has not been specified as necessary, as the existing concrete slab would have reduced the water availability to the roots of trees anyway and the difference in water availability is not thought to be very significant.

5.3.2.8 The small enclosure, housing a water booster and heater within the RPA of T001 will be supported by existing hardstanding if suitable, or with an anti-compaction cellular confinement system, such as Cellweb ®TRP. The expected weight of the cylinder and booster is 950kg. Therefore, it is expected that 100mm deep Cellweb ®TRP units are needed if the existing hardstanding does not have the expected load capacity to avoid compaction of the soil. The make-up of the Cellweb ®TRP cellular confinement system includes a Geotextile layer, 100mm deep Cellweb ®TRP, filled and overfilled with type 4/20 clean angular stone. If this support for the enclosure is over 500mm wider than the enclosure itself then a permeable top surface should be used to allow continued permeation of water and gaseous exchange between the tree rooting environment and atmosphere. An example of a suitable configuration is shown in *Figure 5* in the Appendix.

5.3.2.9 The arboricultural impact assessment and method statement is based upon engineers sketches, ref- 24078SK01-SK04 and the provided weight estimates of the water cylinder and booster. The finalised plans must be supplied to the project Arboricultural consultant for approval as well as the LPA.

5.3.3.1 If additional service installations are required, these should be carried out wherever possible outside of RPAs. If this is unavoidable and installations are required within RPAs, the method and final positions of any proposed services should be verified and approved by the AC before implementation. In planning such installations, the preference order for techniques used are: a) trenchless, b) Broken trench (hand-dug) and c) Continuous trench (hand-dug) as per the NJUG guidelines- *Volume 4, NJUG Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees*. If trenchless methods are to be used, the starting and finishing pits at both ends of the service run needs to be outside RPAs. Where a hand dug option is agreed, any roots discovered during the excavations will be dealt with as described in *5.4 Prohibitions and precautions within RPAs*. Backfilling within RPAs should be carefully carried out to avoid direct damage to roots and excessive compaction of the soil around them.

5.3.4 There are no significant landscape or surface changes proposed that require methodology or mitigation. Where removing existing hard standing if additional soil is required, the depth of this should be minimised and below 100mm. The replacement soil should be a similar type to that already present, and compaction of the soil avoided.

5.3.5 No new planting has been recommended therefore no methodology or mitigation has been provided.



5.3.6 Shading by the existing trees to the proposed development is considered to create insignificant impact given the nature of the proposals and the proposed land use therefore no methodology or mitigation has been provided.

5.3.7 Pruning of the low canopy of tree T001 will ensure access for construction activity and will ensure that the branches will not encroach on the extension. It is likely that G001 and T006 will also need pruning for access requirements. This pruning is addressed in **5.8 Access pruning**.

5.3.8 Given the recorded soil type London Clay- comprising of clay, silt and sand (underlying bedrock) and the trees around the development it is expected the project engineer will provide suitable foundation specifications accordingly.

5.3.9 The potential nuisance of leaf drop causing issues with the rainwater collection system will be mitigated using equipment such as leaf guards/ gutter guards or similar.

5.3.10 There is some space for skips, storage of materials and welfare facilities outside the RPAs of the retained trees and on top of existing hardstanding. These should be located as per the prohibitions and precautions within RPAs.

5.4 Prohibitions and precautions within RPAs

5.4.1 No linear mechanical excavation without prior written agreement from the Arboricultural Consultant (AC).

5.4.2 No excavation, including soil displacement or hand digging without a written method statement from the main contractor having first been approved in writing by the AC.

5.4.3 No excavation without arboricultural site monitoring unless agreed by the AC.

5.4.4 No lowering of or raising of soil levels unless agreed in writing with the AC.

5.4.5 No construction of a sealed hard surface.

5.4.6 No storage of plant or materials, unless on ground protection or the driveway hardstanding. This excludes storage of potentially harmful substances which cannot be stored on ground protection or hardstanding unless with prior planning and written agreement from the AC.

5.4.7 No storage or handling of any chemicals including cement washings, unless the AC approves site-specific protection and mitigation.

5.4.8 No vehicular access or machinery outside areas of ground protection without prior written agreement from the AC.

5.4.9 No fire lighting.

5.4.10 If any other excavation is required within, or near to RPAs of retained trees that is not considered in this report, this should be planned and agreed with the AC. Trial excavations can be carried out through careful hand digging or soil displacement. Exposed roots should be immediately wrapped with hessian to prevent desiccation or rapid temperature changes. Roots under 25mm may be pruned using sharp hand tools following consultation with the AC. Roots over 25mm or equivalent sized clumps of roots require consultation with the AC who will advise on whether the roots can be cut.



5.5 Further precautions when working near retained trees.

5.5.1 Any mixing or storage of cement and other substances injurious to tree health, must be at least 10 metres from the RPAs unless specific mitigation is agreed prior. This includes storage and mixing on top of existing hardstanding. Mitigation is likely to include storage and mixing within bunded areas to prevent harm, including from runoff.

5.5.2 All site operations must be planned to prevent any contact with any parts of retained trees. This includes planning and ensuring a banks person is watching vehicles whilst manoeuvring around trees including G001, T002 and T005- which have low branches and limited space around them for access.

5.6 Tree Protection fencing

5.6.1 The proposed scheme involves construction activities near retained trees. Tree protection fencing has been specified to create a construction and storage exclusion zone within the RPAs of T001.

5.6.2 As most of the land of 130 Field End Road where the development is taking place contains RPAs it is not practicable to install tree protection fencing to protect the RPAs. Instead, it is deemed suitable to install fencing around the trunk of T001. This will prevent storage and other activity within unprotected ground, protect the trunk from contact damage and act as a visual reminder of the consideration and protection of all trees in and around the site. Tree protection signage must be attached on each side of this fencing. An example of suitable signage is provided in *Fig. 4* in the appendix.

5.6.3 Although it is not practicable to install tree protection fencing around all trees, the same restrictions apply to all trees and RPAs as set out in **5.4 Prohibitions and precautions within RPAs**.

5.6.4 Potentially harmful substances should not be stored or mixed on RPAs, including RPAs covered by the existing hardstanding without planning, protection measures (such as bunded areas) and prior written agreement with the AC.

5.7 Ground protection measures

5.7.1 Some ground protection is expected to be needed during demolition and construction phases. The existing hardstanding may be sufficient protection; however, this can be fully assessed when the weight of the machinery needed is known. The AC should be contacted once the machinery requirements are known and the existing hardstanding can be assessed further with an engineer if necessary. If it is deemed necessary, temporary ground protection can be specified at this point.

5.7.2. If heavy loading is required that the existing hardstanding is not able to support, or if hardstanding is removed and further loading of that ground is required then a cellular confinement system such as Cellweb ® TRP system or ArborRaft tree root protection system may be needed. The ArborRaft system has the advantage that it does not need filling with stone, which means in some scenarios its positioning is more flexible and the units are easier to move or reuse. For loading up to 2 tonnes, joined ground protection mats, laid on top of 150mm of woodchip, laid on a geotextile membrane is adequate ground protection.

5.7.3 If specified, the loading capacities of any ground protection, should be carefully observed and not exceeded throughout the development.

5.7.4 If existing hardstanding, including the entirety of the driveway from the entrance on Meadow way to the area of development, is damaged or deforms at any time during the development, the AC must be contacted to assess whether additional ground protection is required.



5.8 Pruning

5.8.1 The low canopy of T001 will need to be lifted to prevent damage and access requirements of the development. It is considered that lifting the canopy to 4.5m above ground level will be sufficient, however if greater ground clearance is required the AC should be contacted so this can be assessed and alternative pruning planned.

5.8.2 It is expected that the low canopies of the group of trees that border the driveway (G001) will need lifting or pruning back away from the driveway to prevent damage and enable access. Once the requirements for the vehicle and machinery are known the project AC should be contacted so this pruning can be planned and specified.

5.8.3 It is expected that the low canopy of T006 (silver birch) will need lifting above the driveway to prevent damage and enable access. Once the requirements for the vehicle and machinery are known the project AC should be contacted so this pruning can be planned and specified.

5.8.4 Pruning specifications will be made to ensure minimum practicable clearances.

5.8.5 Any changes to the project that require pruning may only be conducted following written consent from the AC. All tree work must be undertaken in accordance with BS3998:2010 and current best practices, by suitably qualified and insured arboricultural contractors. Under no circumstances may construction contractors prune any trees.

6. Enquiries

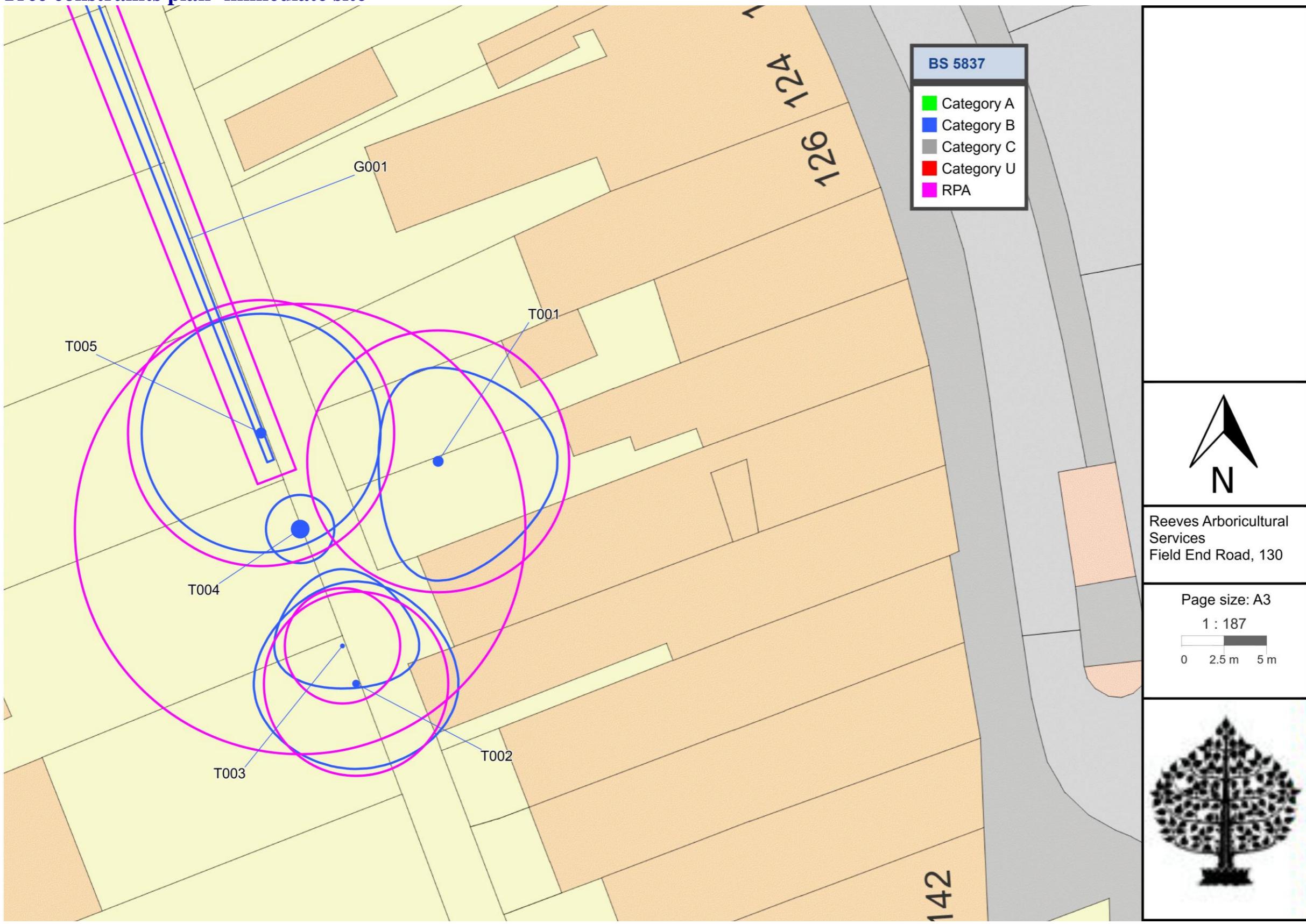
Any enquiries relating to this report should be addressed, in the first instance, to Ross Fountain, Reeves Arboricultural Services Ltd. 68 Maltings Place, London, SW6 2BY.

7. Appendix

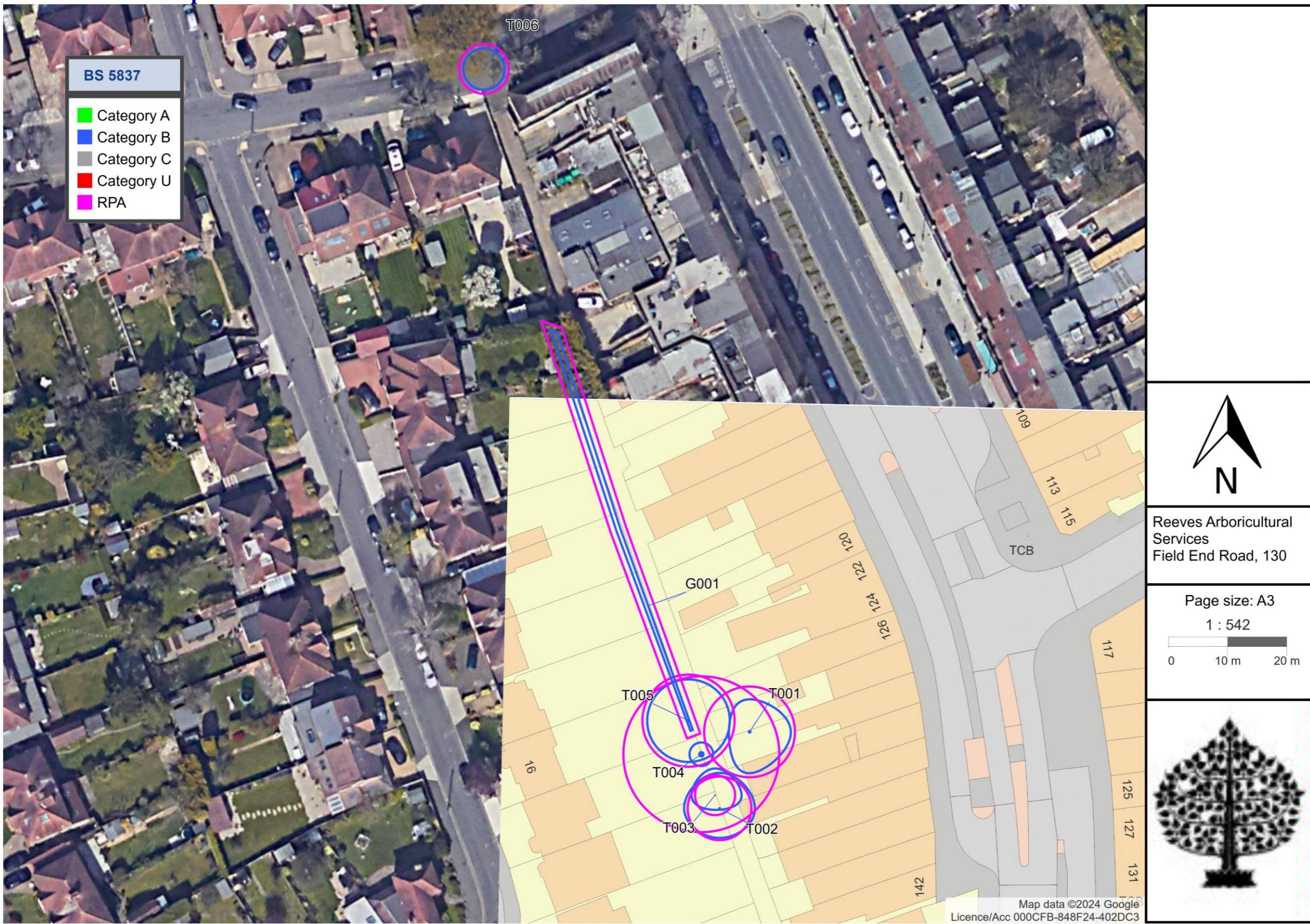
1. Tree Survey data

Ref.	Species	Feature	Measurements	General Observations	RPA	Phys. Cond.	Struct. Cond.	Preconstruction recommendations	Ret. Cat.
G001	Mixed species (Mixed species)	Group-neighbouring land	Stem Diam(mm): 400 Crown Clearance (m): 2 Rem. Contrib.: 30+ Years	Row of mainly mature Leyland cypress in neighbouring gardens with low canopy height over the drive. Clearance height generally between 2m (near the boundary fences) and 3.5m.	Area: 200 sq m.			The group will need the low canopies lifting for access and to prevent damage. The lift height will depend on vehicle and machine requirements.	B2
T001	Sycamore (<i>Acer pseudoplatanus</i>)	Tree	Height (m): 19 Stem Diam(mm): 640 Spread (m): 5.5N, 7E, 7S, 3.5W Crown Clearance (m): 2 Lowest Branch (m): 4(E) Life Stage: Mature Rem. Contrib.: 30+ Years	Hardstanding throughout the majority of the rooting environment on the S side. Build-up of mortar on the E side of the trunk is preventing thorough inspection of the base on that side. Tree divides into 2 main stems and 2 branches at 2m agl, union appears sound. Deadwood, mainly in the lower and mid canopy. Asymmetrical canopy, biased to the E/NE likely due to neighbouring trees. Overall vitality is good.	Radius: 7.7m. Area: 186 sq m.	Good	Good	Remove mortar to fully inspect the base. The low canopy will need to be lifted to 4.5m above ground level. Deadwood over 25mm in diameter should also be removed.	B1,2
T002	Sycamore (<i>Acer pseudoplatanus</i>)	Tree neighbouring land	Height (m): 17 Stem Diam(mm): 450 Spread (m): 6N, 6E, 5S, 6W Rem. Contrib.: 30+ Years	Within neighbouring land, observations of visible parts of the tree made only and measurements estimated. Leaning over the driveway with relatively low limbs and narrow driveway limiting access. Trunk damage, presumably from vehicular contact.	Radius: 5.4m. Area: 92 sq m.				B2
T003	Sycamore (<i>Acer pseudoplatanus</i>)	Tree 2 stems neighbouring land	Height (m): 14 2 stems (mm): 250,130 Spread (m): 4.5N, 4.5E, 2.5S, 4W Rem. Contrib.: 30+ Years	Within neighbouring land, observations of visible parts of the tree made only and measurements estimated. Relatively sparse canopy.	Radius: 3.4m. Area: 36 sq m.				B2
T004	Black hybrid poplar (<i>Populus x canadensis</i>)	Tree neighbouring land	Height (m): 8.5 Stem Diam(mm): 1100 Spread (m): 2N, 2E, 2S, 2W Rem. Contrib.: 20+ Years	Within neighbouring land, observations of visible parts of the tree made only and measurements estimated. Heavily reduced to approx. 7m with proliferation of small epicormic growth.	Radius: 13.2m. Area: 547 sq m.				B1
T005	Sycamore (<i>Acer pseudoplatanus</i>)	Tree neighbouring land	Height (m): 18 Stem Diam(mm): 650 Spread (m): 7N, 7E, 7S, 7W Rem. Contrib.: 30+ Years	Within neighbouring land, observations of visible parts of the tree made only and measurements estimated. Leaning over the driveway with a relatively low limbs and narrow driveway limiting access. Potential damage to the primary limb at 3.5m agl, presumably from vehicular contact.	Radius: 7.8m. Area: 191 sq m.				B2
T006	Silver birch (<i>Betula pendula</i>)	Tree neighbouring land	Height (m): 11 Stem Diam(mm): 350 Spread (m): 3.5N, 3.5E, 3.5S, 3.5W Crown Clearance (m): 2 Lowest Branch (m): 3(SW) Life Stage: Early Mature Rem. Contrib.: 20+ Years	Street tree with relatively large trunk wound. Canopy is sparse and relatively low, including over the drive entrance.	Radius: 4.2m. Area: 55 sq m.			The low canopy will need lifting over the drive entrance for access and to prevent damage. The lift height will depend on vehicle and machine requirements.	B1

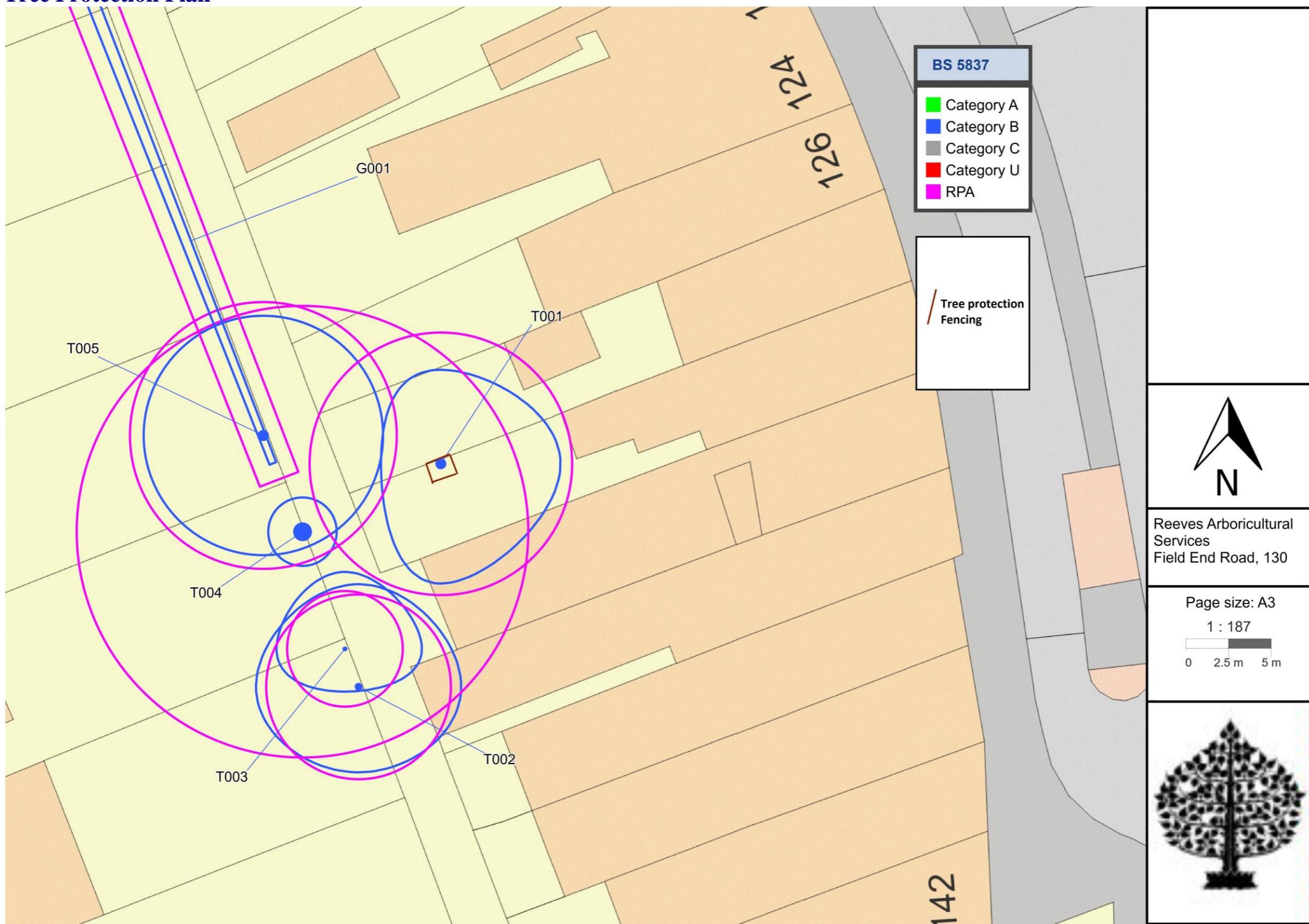
2. Tree constraints plan- immediate site



3. Tree constraints plan- overall site



4. Tree Protection Plan



Tree protection plan- ASIAM202- M03

5. Arboricultural sequencing of events and site monitoring

Stage	Event
Stage 1	Project arboricultural consultant (AC) appointed.
Stage 2	Finalised foundation design supplied to the AC for approval.
Stage 3	Construction vehicle and machinery requirements provided to the AC and the AC to finalise the pruning specifications.
Stage 4	Tree works to be carried out once planning permission granted.
Stage 5	Main contractor supplied with arboricultural reports. Main contractor to supply report to secondary contractors and brief as necessary. Main contractor to prepare contingency plan and provide to AC
Stage 6	Site set-up as per the tree protection plan. A copy of the TPP should be available on site for the reference of all contractors
Stage 7	Once tree protection measures are in place, and prior to works beginning, a site visit by the AC is required. This site visit and any subsequent AC site visit should use an auditable system of site monitoring which should be made available to the landowner on request or supplied to the architect/ project manager if submission to the LPA is required.
Stage 8	Following the initial site visit by the AC, works can commence if tree protection measures are in place. Following this commencement an AC visit is required at key parts of the build, including the slab and footings installation- above and next to the RPA of T001 and the cellular confinement installation. A visit is also required every 2 months until completion of the project. This is in order to ensure continuous tree protection, avoid potential breaches of planning and delays to the development
Stage 9	When works are complete, and machinery and stored materials are removed the tree protection measures can be removed.
Stage 10	Final visit from AC to provide final audit and sign off project.

Note: If at any point during the development any changes to the project involving the trees and woody plants- including but not excluding others: tree protection measures, pruning, excavation within or near to RPAs- consultation must be made with the AC in writing. The AC will advise on the matter and a site visit to oversee operations may be required.

6. Tree protection Fencing and signage

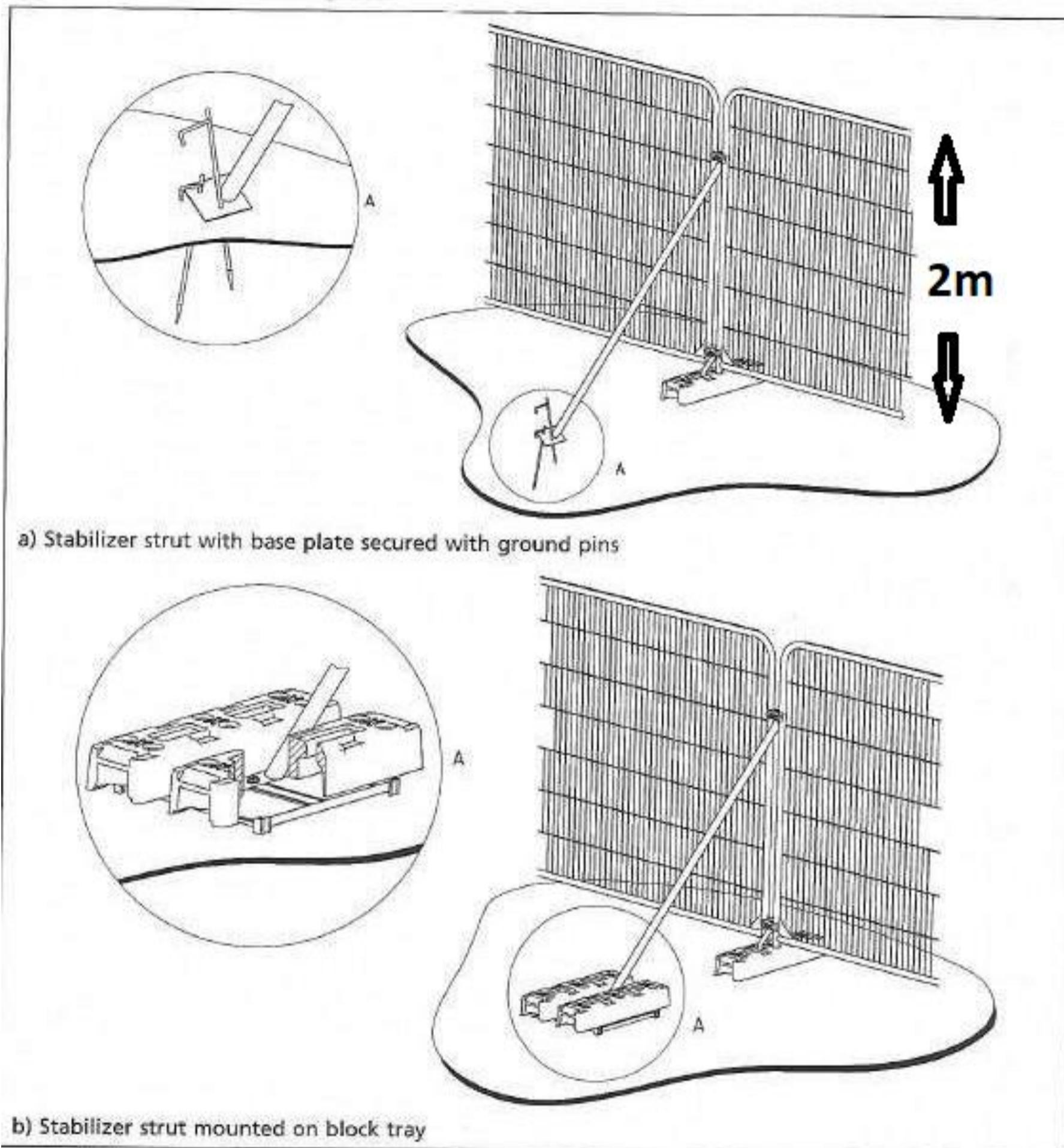


Figure 3- type of tree protection fencing required (from BS5837:2012 – 6.2.3) and shall remain in place until completion of the project.

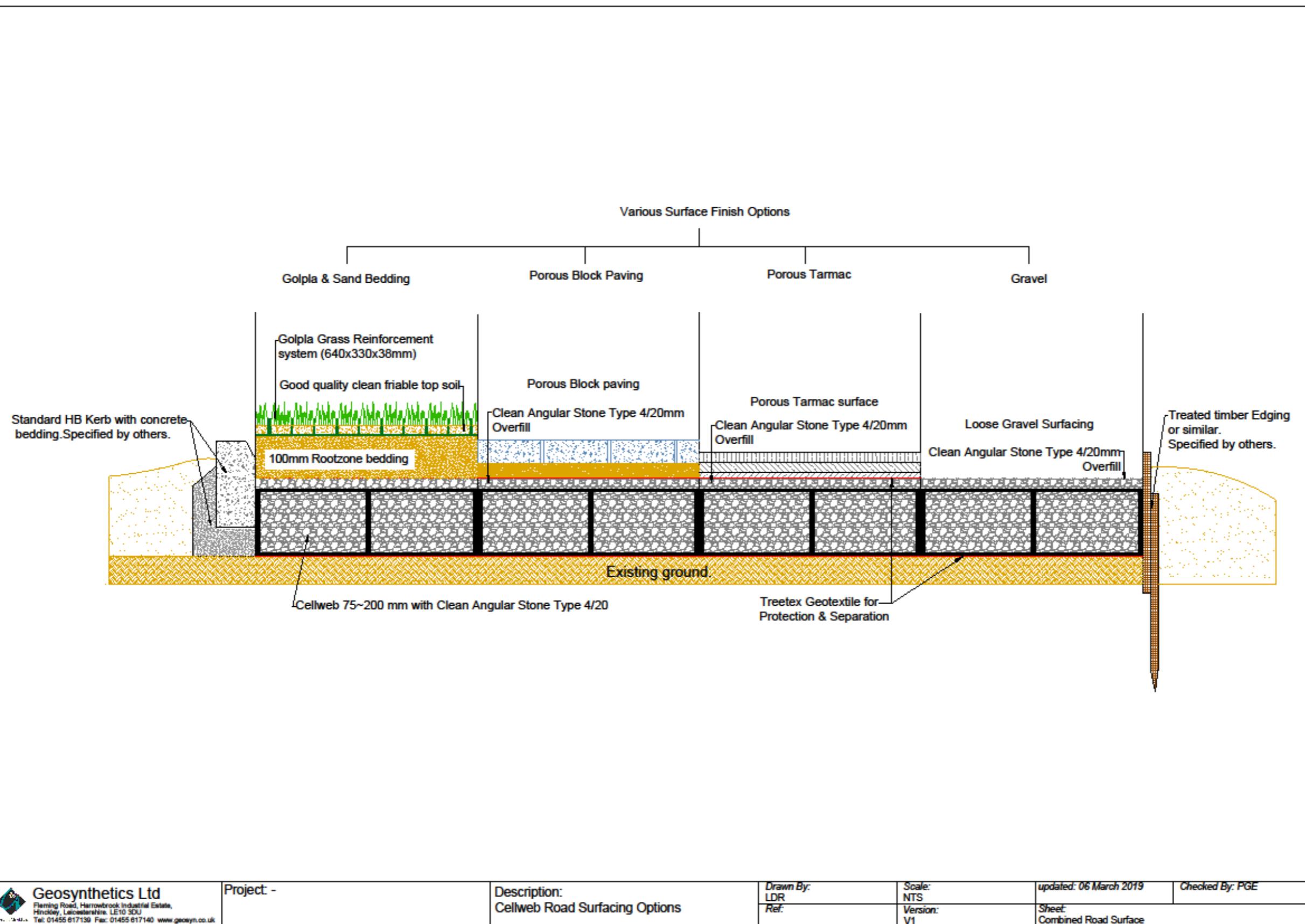


Tree Protection Area Keep Out!

**This fence must be maintained in accordance with
the approved plans and drawings for this
development**

Figure 4- Signage to be affixed to the tree protection fencing at intervals of 4 metres and shall remain in place until completion of the project.

7. Example of anti-compaction build-up within RPAs



Geosynthetics Ltd Fleming Road, Harrowbrook Industrial Estate, Hinckley, Leicestershire. LE10 3DU Tel: 01455 617139 Fax: 01455 617140 www.geosyn.co.uk	Project: -	Description: Cellweb Road Surfacing Options	Drawn By: LDR	Scale: NTS	updated: 06 March 2019	Checked By: PGE
			Ref:	Version: V1	Sheet: Combined Road Surface	

Figure 5- Example of potential support within RPAs with various upper surface finishes

8. Reference material

BS5837:2012 Trees in Relation to Design, Demolition and Construction - Recommendations.

BS3998:2010 Tree work. Recommendations.

Tree Preservation Orders: A Guide to the Law and Good Practice.

NJUG 10 - Guidelines for the planning, installation and maintenance of Utility Services in relation to trees.

BS8206: Part 2: 2008 Code of Practice for Daylighting.

Site Layout Planning for Daylight and Sunlight. A Guide to Good Practice.

CIBSE: Daylighting and window design, lighting guide LG 10: 1999.