

BS5837 Tree Survey Report, Arboricultural Impact Assessment & Arboricultural Method Statement

Site: 39 Second Cross Road, Twickenham, TW2 5QY

Prepared for: Tony Bianchi

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ENVIRONMENTAL
ARBORICULTURE

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Summary

This tree survey report relates to the proposed construction of a two-bedroom dwelling, with associated landscaping scheme, to the rear (east) of 39 Second Cross Road, in an area which is currently garden/parking for the existing property.

This report provides information and advice on the likely impact of the development proposals on the affected trees, and, in accordance with British Standard 5837 (trees in relation to design, development, and construction) recommends appropriate measures to be taken in order to minimise the effect of development works on the trees.

The table below summarises the trees surveyed, their retention categories, and the numbers to be retained and removed:

	Total	Retained	Removed
Category C trees	4	2	2
Category C tree groups	1	1	0
Category U trees	4	3	1

Tree Preservation Order status could not be ascertained online, as the Local Planning Authority do not currently publish maps. However, a planning search has ascertained that the site is within the Twickenham Green Conservation Area.

While this information is correct at the time of writing, it presumes the reliability of the interactive mapping service and is subject to change without notice. It is therefore the responsibility of any contractor working on trees within /adjacent to the property to undertake their own statutory checks.

1. Introduction

1.1 **Instruction:** Tree Craft have been instructed by Tony Bianchi, the owner of 39 Second Cross Road, to carry out a tree survey and provide reports with regard to the development proposals outlined above.

1.2 **Scope of the report:** this report relates to trees which could be affected by the proposal; all of these are to the east of No. 39, with the mature trees mostly being in the neighbouring garden to the south. The brief for this survey/report is to:

- Record relevant information about the surveyed trees, in order to inform the design process.
- Provide an arboricultural impact assessment evaluating direct and indirect effects of the construction proposals on the trees and any impact which the retained trees will have on the construction, as well as recommending appropriate mitigation and protection measures.
- Produce an arboricultural method statement detailing how any operations which could significantly impact the retained trees will be undertaken, in order to adequately protect and ensure the long-term retention of the nearby trees.

1.3 **Documents provided:** the plans attached are derived from tree survey data overlaid onto an existing and proposed site layouts provided by the project architect in April 2024.

2. Site assessment and observations

2.1 Site visit: A site visit and tree survey were undertaken on Friday 26th April 2024. The weather was clear, with sunshine. Some deciduous trees were partially in leaf at the time of the inspection, others had yet to flush.

2.2 Site description: The site currently consists of a detached property on the northeastern side of Second Cross Road, with associated garden and parking further to the east/north-east. The parking area is accessed at its northwestern side via gates leading on Chestnut Road.

3 – Tree survey

3.1 Tree survey and constraints: The results of the tree survey are shown in the tree survey plan and schedule (**Appendix B**) and the tree protection plan (**Appendix C**). The number of trees in each retention category can be seen in the summary table at the beginning of this report.

3.1.1. The below ground constraints are generally summarised as the root protection areas (RPA). The RPA is an area equivalent to a circle with a radius 12 times the diameter of the trees measured at 1.5 metres for single stemmed trees. For trees with more than one stem, one of the two calculation methods below should be used where there are either 2 - 5 stems or 5 or more stems. In all cases, the stem diameter(s) should be measured in accordance with Annex C, and the RPA should be guided by Annex D of BS5837:2012.

3.1.2. The RPA is an area in which no ground works should be undertaken without due care in relation to the retained tree(s), in order to avoid soil compaction, changes in soil levels, or soil contamination, any of which could alter the tree(s) condition and/or stability. The shape of the RPA and its exact location will depend upon arboricultural considerations and ground conditions.

3.2 Retention categories: As stipulated in BS 5837, each tree has been allocated to one of four categories (A, B, C or U), which reflects its suitability as a material constraint on development. Whilst trees in categories 'A', 'B' and 'C' are all a material consideration in the development process, the retention of category 'C' trees, being of low quality or of only limited or short-term potential, will not normally be considered necessary where they impose a significant constraint on development. Furthermore, BS 5837 makes it clear that young trees, even those of good form and vitality, which have the potential to develop into quality specimens when mature "need not necessarily be a significant constraint on the site's potential".

BS5837:2012 sets out the methodology for surveying trees on potential development sites in order to identify them within a prioritised system of retention categories, as summarise below:

A Category	Trees of high quality and amenity value in such a condition at the time of the survey as to be able to make a significant amenity contribution for a minimum of 40 years.
B Category	Trees of moderate quality and amenity value in such a condition at the time of the survey as to make a significant amenity contribution for a minimum of 20 years.
C Category	Trees of low quality and amenity value in adequate condition at the time of the survey to make some amenity contribution for a minimum of 10 years, or young trees with a stem diameter less than 150 mm measured at 1.5 meters above ground level
U Category	Trees in such a condition that any existing value would be lost within 10 years. Such trees do not necessarily need to be removed as part of the project (unless for safety reasons) but do not impose any constraints on the project. For this reason, and in accordance with BS5837 practices, Category U trees, hedges, and groups are not marked with Root Protection Areas on the Tree Protection Plan.

Retention categories A, B and C are sub-divided into sub-categories 1 – 3, as summarised below:

Subcategory 1	Arboricultural value;
Subcategory 2	Landscaping value
Subcategory 3	Cultural and conservation value

The **Root Protection Area (RPA)** of each tree was determined using the calculation methods detailed in BS 5837: 2012 and plotted as a polygon which centres on the base of the stem. For groups, the RPAs have been calculated on the largest stem diameter with the group. For hedges, the RPAs have been extended to 1 metre beyond the crown spreads of the widest cardinal points. Where a tree crown extends beyond the RPA, allowance has been made to increase the extent of the RPA to include the canopy where relevant.

4.0 – Arboricultural Impact Assessment

4.1 Tree survey plan: The tree survey plan (**Appendix B**) is based on tree survey data recorded and plotted onto a plan of the current site layout and shows the existing trees, numbered and categorised in accordance with BS 5837:2012.

4.1.1 The Tree Protection Plan (**Appendix C**) is based on the tree survey data overlaid onto the proposed layout plan and shows the extent of the Root Protection Areas (RPAs) of the surveyed trees. Below ground constraints are represented by the RPAs. The above ground constraints arise from the current and ultimate height and spread of the trees. An assessment of the Tree Protection Plan has determined the likely impact of the development proposals on the trees and vice-versa.

4.2 Trees to be removed: the current proposal requires the removal of 2 no. small, Category C trees (T7 and T8) and 1 no. Category U tree (T4). Both T7 and T8 are small species, often growing in shrub rather than tree form, with the latter having been planted by the present owner. T4 is in a poor structural condition overall, as detailed in the Tree Survey Schedule at **Appendix B**.

4.3 Incursions within the Root Protection Areas (RPAs) of retained trees: the proposed construction of the new house will result in incursions requiring excavation within the RPAs of 2 no. retained trees, as detailed below.

Works	Trees and area/percentage of each RPA affected
Construction of south-western and south-eastern elevations of house	T1 (sycamore) – northern edge; approx. 1% T3 (ash) – northwestern edge; approx. 0.5%

By percentage of the total Root Protection Areas, both of these incursions are extremely minor, particularly as they are at the outer edges of the respective Root Protection Areas. It is therefore expected that, even without mitigation, their effect on the health/condition of the respective trees would be minimal.

Measures have, however, been taken to further investigate and – if needed – mitigate the likely impact on trees T1 and T3. A trial pit was carefully dug, by hand, in the incursion area of T3’s RPA, in order to check for the presence of major roots (those over 25mm diameter at) and/or large clusters of minor roots. No such roots were encountered or observed within this pit, or at its edge; compacted soil layers were encountered during this process, consistent with the historic industrial usage of the site. Such compaction often corresponds with a lack of any significant rooting mass being present. A similar pit is to be dug within the incursion area of tree T1’s RPA. The approximation locations of these pits are marked on the Tree Protection Plan (**Appendix C**), and a photograph of T3’s trial pit is attached below as part of **Appendix E**.

The absence of roots in T3’s trial pit further reinforces the conclusion that no disruption or other detriment will be caused by the current proposal.

As the incursion into T1's RPA is at a similar position relative to the tree, at the outer edge of the RPA, 5.5 metres from the stem and outside the canopy line, it is similarly likely that very few, if any, roots are present within the incursion area although – as above – this will be confirmed by a trial pit before construction works commence.

Although no roots were encountered in T3's trial pit, and a similar result is expected for T1, works within the Root Protection Areas will nonetheless be conducted using hand tools only, in order to avoid damage to any roots which are present and can be preserved. Furthermore, should major roots (over 25mm in diameter) be encountered within either incursion area, a beam foundation will be used in order to preserve the root(s) in question. A sketch diagram demonstrating this proposal is included as part of **Appendix E**. Should no major roots be encountered within any of the incursion areas, standard trench foundations will be used throughout.

The proposed landscaping scheme involves working extensively within the Root Protection Areas (RPAs) of trees T1-3, as well as those of G1 and T5-6. As trees T2, T6, and T6, are to be retained and could be influenced by the proposal, their RPAs are shown on the Tree Protection Plan despite being of Retention Category U – trees of this category are not usually depicted with RPAs, but as these trees are to be retained it is important that their future health and stability is considered, and depicting the areas which require protection is therefore helpful.

Although these incursions are extensive in area, they will not involve excavation or – due to the proposed use of porous paving – large areas of new impermeable surfacing. The new driveway and parking spaces are to occupy a similar area to the existing gravel driveway/parking area, meaning that there will not be any significant change to the soil conditions beneath.

Probing of the soil in various parts of the site, including the RPAs, was carried out during the tree survey in April and indicated consistent, substantial compaction typical of urban soil and consistent with the site's former industrial usage. It is therefore likely that minimal additional compaction will be required before paving and raised beds are installed, and as such that there will be little change to the soil conditions in which the retained trees are currently growing – and which they appear to be tolerating well.

The elements of the landscaping which are within Root Protection Areas are also to be installed using hand tools only, to minimise disturbance of the soil surface, and the potential for any further soil compaction to occur. Should landscaping works be carried out at a time when the soil is wet, walking boards or similar must be used for pedestrian access within the Root Protection Areas, to ensure that the soil surface is not damaged. Heavier machinery is not to be used or permitted to access the RPA incursion areas.

Provided that the building construction and associated landscaping scheme are carried out with care, and in full compliance with the measures and methodologies detailed within this report, it is considered that the project can be delivered as proposed without adverse effect on any retained tree.

It is understood that a condition regarding removal of potentially-contaminated soil to a depth of 600mm has been imposed as part of the planning decision. Full details were not available at the time of writing, and as specialist work a suitable methodology for this will need to be prepared by the relevant contractor. However, it should be noted that removing soil within the Root Protection Area of any tree, particularly to the proposed depth, is not likely to be compatible with its retention, as it is probable that – unless very minor in scope – such work will affect the structural stability and/or physiological health of the tree(s) in question.

4.4 Underground apparatus: underground services will connect to those beneath Chestnut Road, and enter the plot via the approximate route shown on the Tree Protection Plan (**Appendix C**). This will not affect any retained trees, or infringe their Root Protection Areas.

Should there be any plans for the installation of other new underground service routes through the site, these must be analysed at the planning stage by the project arboriculturist if they may infringe the RPA of any retained tree.

4.5 Site access arrangements and compound/storage area: access to the construction area will be via Chestnut Road, and the existing entrance/driveway (part of which will be remodelled into the new driveway) at the northern boundary of the site. This access will infringe the Root Protection Area of T1 (although, due to the specified location of the protective fencing, not beneath the crown); however, as this infringement will be limited to the existing, established driveway/parking, which is used by vehicles daily, no adverse effect on tree T1 is anticipated. The proposed access not infringe the Root Protection Areas of any other retained trees.

An indicative storage area has been shown on the Tree Protection Plan; any similar area, outside all Root Protection Areas, and with appropriate management of stored substances (detailed at Section 5.4.3, below) would also be suitable.

4.6 Tree works: the removal of 3 no. small trees – T4, T7, and T8 – is required to deliver the project. Additionally, it is recommended that a crown reduction is carried out on tree T5, due to squirrel-damaged limbs in the crown, and substantial basal decay. However, as this tree is located within the neighbouring garden it is not within the client's ability to instruct such work. All tree works are summarised in the Tree Works Schedule at **Appendix F**.

4.7 Protective fencing: Protective fencing shall be erected in the locations shown on the Tree Protection Plan (**Appendix C**) to provide construction exclusion zones within the RPAs of the retained trees on site. The fencing must be 'fit for purpose' and preferably as prescribed in section 6.2 (Figure 2) of British Standard 5837: 2012 (e.g. metal welded mesh panels secured with scaffold poles), as illustrated on the copy extract (**Appendix D**).

Fencing must remain in place for the entirety of the construction phase, until the house is complete. Completion of the landscaping scheme will require access into the Root Protection Areas, as detailed in Section 4.3, and fencing will therefore need to be moved. However, such access must be pedestrian-only, and kept to a minimum.

4.8 General protection measures for retained trees: It is important that measures for protection are in place throughout the construction phase and, where possible, during the landscaping phase, for as long as a risk of damage remains.

4.8.1 During construction, no materials shall be stored or dumped and no access should be permitted within the RPAs of the retained trees (see Section 5.4.3, below).

4.8.2 Any washing points for equipment, or storage of soil contaminants, must be located outside all Root Protection Areas. No discharge of potential contaminants shall occur within the RPA or where there is risk of run off into the RPA.

4.9 Impact on local amenity: the trees to be removed as part of the project are small in size, of low remaining life expectancy and (in the case of tree T4) in poor condition. As demonstrated within this report, there is substantial mitigation for the necessary, minor construction incursions into the RPAs of retained trees.

Provided that all measures detailed within this report are observed and implemented in full, the project may therefore be delivered without impact on any retained tree, or detrimental effect on the amenity value of the site, or its broader setting with a Conservation Area.

5.0 Arboricultural Method Statement

5.1 Phasing of Events

5.1.1 **Sequence of Events:** Detailed below is a logical sequence of events to provide adequate protection for all surveyed trees within the site.

Stage 1 – Undertake pre-development commencement consultations and/or site meetings (if required - see sub-section 5.2); dig trial pit within T1 incursion area to identify if beam foundation section is required – check for presence of roots above 25mm in diameter

Stage 2 – Install protective fencing (see sub-section 5.3 & 5.5)

Stage 3 – Provide appropriate site access, storage area and contractor parking (see sub-section 5.4)

Stage 4 – Undertake construction works (See sub-section 5.5)

Stage 5 – Deliver landscaping scheme, moving protective fencing only where necessary (see sub-sections 5.3 and 5.5)

Stage 6 – Remove protective fencing

5.1.2 The general tree protection measures recommended within this report are non-specialist, and the excavation works within Root Protection Areas are very minor and – as detailed elsewhere in this report – investigations to determine root presence have already been carried out. As such arboricultural supervision is not considered necessary unless specified by the local planning authority's tree officer. Should such supervision be required by the tree officer, the project arboriculturist should attend at Stages 1, 4, and 6 above, and gather relevant evidence of compliance with the measures stipulated within this report, and with any requirements specified by the tree officer.

5.2 Consultation, Supervision and Reporting

5.2.1 **Consultation:** This arboricultural method statement shall be made available to the Site Manager and contractors working on site, so that they fully understand the importance of the measures set out for tree protection.

5.2.2 If the implementation of any part of this report is unclear to the contractor(s), a pre-commencement site meeting should be held by the Site Manager with the Project Arboriculturist and relevant contractors to discuss and agree the works and programming.

5.2.3 **Supervision and Reporting:** The Site Manager shall manage the construction and ensure compliance with the general tree protection measures detailed in this

arboricultural method statement and tree protection plan, and in the arboricultural impact assessment above.

- 5.2.4 Aside from those detailed within this report, no encroachment or ground works, and no excavations of any kind, shall occur within the RPAs of the retained trees without further consultation with the project arboriculturist and the borough tree officer.
- 5.2.5 Any damage to the retained trees or other relevant infringements shall be reported immediately to the borough tree officer and the project arboriculturist.

5.3 Protective Barriers

- 5.3.1 **Protective Fencing:** Protective fencing (to the specification detailed in sub-section 4.8 of this report and at **Appendix D**) shall be erected in the locations shown on the Tree Protection Plan (**Appendix C**) to provide construction exclusion zones within the RPAs of the retained trees. This is to be installed prior to contractors accessing the site. In the existing/proposed driveway area, the fencing location has been set back further into T1's RPA to allow space on the existing driveway for contractors' parking.
- 5.3.2 On completion of all construction works and after the removal of all plant and machinery relevant to the building construction, the protective fencing may then be moved in order to allow access for the landscaping scheme to be installed. It is essential that such access is minimised, and strictly limited to pedestrian access only, in order to avoid damage to the soil (if ground conditions are wet, walking boards must be used to protect the soil surface.) The fencing should therefore be retained during the landscaping scheme, and moved only where/when necessary. Once all works are completed, it may then be dismantled and removed. If arboricultural supervision has been stipulated, the Project Arboriculturist shall visit site either during or immediately after the removal of the protective fencing to carry out a final inspection of the trees and sign-off the arboricultural supervision.

5.4 Access Arrangements, Storage Area & Parking

- 5.4.1 **Access Arrangements:** vehicular access to the site shall be via Chestnut Road and the existing vehicle gates, leading onto the current driveway/parking area. Vehicular access into the RPA incursion area must only occur while the existing driveway surface is retained, and once the new driveway area is completed.
- 5.4.2 **Facilities:** the proposed location of facilities is not known at the time of writing, but these may be installed in the northwestern corner of the site, if required, outside the Root Protection Area of tree T1.
- 5.4.3 **Storage of materials:** the intended location for storage is not known at the time of writing. However, a suggested area has been marked on the Tree Protection Plan at **Appendix C**. Due to the constraints of the site, this is close to (although not within)

the Root Protection Area (RPA) of tree T1. It is therefore essential that potential soil contaminants (such as – but not limited to – fuel, oils, and cement) are correctly stored, on a bunded, waterproof surface, and covered with a waterproof tarpaulin or similar in order to prevent run-off during wet weather.

No discharge of potential contaminants shall occur within any Root Protection Area (RPA), or where there is a risk of run off into an RPA. Such run-off is especially significant if it contains fuel, oil, or cement, as these common substances cause severe damage to both soil and roots.

5.4.4 Contractor's Parking: parking will need to be managed carefully, as there is very little space outside the site. However, the existing driveway (as marked on the Tree Survey Plan at **Appendix B**) offers sufficient space for 2-3 large vans or similar and, as an established driveway/parking area, its usage will not have a detrimental effect on tree T1. Once replaced or resurfaced, the new driveway/parking areas may also be used as necessary. However, during any construction/landscaping phases where the driveway surface has been removed and has yet to be replaced, no parking is to take place within the Root Protection Area of T1, as this could cause damage to the soil surface.

5.4.5. Mixing of cement/concrete: as detailed at 5.4.3, cement is a significant soil contaminant and, as a strongly alkaline substance, can have a major impact on soil structure and quality, as well as on the health of trees and other vegetation. Due to the constraints of the site, cement should ideally be mixed off-site. If this is not possible, small amounts may be mixed at the northern edge of the storage area, or in the northwestern corner of the site – as far from T1's RPA as possible. Mixing must take place on a waterproof surface, and be protected from rainfall to avoid run-off into the soil.

5.5 Construction and Landscaping Works Within the RPAs of Retained Trees.

Works which will infringe on the Root Protection Areas (RPAs) of retained trees are detailed in Section 4.3 of this report, along with protection measures which must be observed. As described in Section 4.3, a trial pit in the area where the southeastern elevation of the proposed new house intersects the RPA of tree T3 was carefully dug, by hand, to check for the presence of major roots (above 25mm diameter) and/or significant quantities of minor roots – neither were observed in the edges of the trial pit, nor encountered during digging. Conventional foundations are therefore to be used in this area. A similar pit is to be dug in the incursion area of T1's RPA, where the southern corner of the proposed building is to be located. Due to the small size of this incursion, its location relative to the tree, and the existing soil conditions it is anticipated that few, if any, roots will be encountered in this area. If the trial pit confirms this, conventional foundations will therefore be used for this section of the

building, in keeping with the rest of the design. Should major roots above 25mm diameter and/or large quantities of minor roots be encountered in this area, a beam foundation will be used for this section, as shown in the sketch diagram at **Appendix E**; this will allow roots to be preserved.

Regardless of the foundation type/installation method, all works within the incursion areas are to be carried out using hand tools only, and any minor, isolated roots encountered will be pruned with a sharp pruning saw or bypass secateurs, leaving the smallest possible wounding area. As detailed above, the design will work around major roots or large clusters of minor roots, if encountered; major roots, in particular, are not to be severed.

Landscaping works are, as described at Section 4.3, non-invasive in character; they will consist of laying porous paving and building narrow raised beds on top of the existing soil service. While some surface preparation is likely to be necessary, the flat nature of the site and relatively uniform soil compaction indicated by initial investigations suggest that this will be minimal. The only exception to this is the pond close to the site's northern corner; this will infringe slightly on the Root Protection Area of tree T6 (Category U). The incursion is at the extreme western edge of the area which – as detailed in Section 4.3 – would not normally be included for a Category U tree. This tree has also been heavily-pollarded, with regrowth removed cyclically; the incursion is therefore 3.1 metres from the edge of the crown, while being only 1.5m² in area – 2% of the total Root Protection Area. The pond may, therefore, be excavated in the usual fashion, without further mitigation, as no adverse effect on T6 is anticipated.

Planting works within the Root Protection Areas are to consist of lawn and wildflowers only; this can therefore be achieved without significant soil disturbance. All such planting operations in the RPAs, including surface preparation, must be carried out using hand tools – a rotavator or similar must not be used within any RPA.

6.0 Conclusion

6.1 Careful consideration has been given to minimising any possible impact from this project on the retained trees. The measures detailed within this report offer substantial mitigation for the incursions within the Root Protection Areas, particularly in view of their minor scale, and location at the outer edges of the Root Protection Areas.

If the provisions of this arboricultural method statement are complied with in full, the proposed works will be able to proceed without risk of detrimental effect on any retained trees, and will therefore not impact on the arboricultural amenity value of the site or surroundings.

7.0 References



- British Standards Institution (2012) BS 5837: Trees in relation to design, demolition and construction – Recommendations
- National Joint Utilities Group 'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees' (NJUG 10, Volume 4, 2007)
- British Standard 3998:2010 '*Tree work – Recommendations*'
- The Town and Country Planning Act 1990
- The Town and Country Planning (Tree Preservation) (England) Regulations 2012
- "The Body Language of Trees" by Claus Mattheck & Helge Breloer
- "Principles of Tree Hazard Assessment & Management" by David Lonsdale
- N. Jackson, J. Roberts, M. Smith. 2003. Tree Roots in the Built Environment. London: Stationery Office.
- British Standard 5837: 2012 "Trees in Relation to Construction"
- British Standard BS3998: 2010 Tree Work – Recommendations
- 'Tree Root Systems'; Martin Dobson, Arboricultural Research and Information Note No. 130/95/ARB; Arboricultural Association; July 1995 [retrieved 14.05.2021]

8.0 Caveats and limitations of report

The limitations detailed below apply to this report;

- The survey and this report are concerned with the arboricultural aspects of the site only.
- The survey is restricted to trees that may be affected by the proposed development, regardless of whether or not they are within the site boundaries.
- The survey is based on a ground level tree assessment and examination of external features only – described as the ‘Visual Tree Assessment’ method expounded by Mattheck and Breloer (The Body Language of Trees, DoE booklet Research for Amenity Trees No. 4, 1994).
- Only trees of significant stature that were included in the topographical survey (if provided) were surveyed. In general, trees with a stem diameter at 1.5m above ground level of less than 75mm have been excluded unless they have particular merit that warrants comment. In general, woody shrub species are not included.
- No plant tissue samples were taken and no internal investigation of the trees was carried out. No soil samples were taken or soil analyses were carried out. The risk of tree-related subsidence to structures has not been assessed.
- An ecological assessment of the site is not within the scope of this report.
- While any obvious tree defects which could represent a hazard have been recorded, and recommendations made, a full, formal safety assessment of the trees was not within the scope of the survey/report.
- The arboricultural impact assessment has been based on the detailed site layout and design information provided by the client.
- It is assumed that foundations will be constructed in accordance with National House Building Council Standards 2011, Part 4.2 ‘Building Near Trees’.
- The health and condition of trees, as living organisms, may change rapidly, particularly as a result of unpredictable climatic events or human interference. The condition assessment of the trees is based on factors evident at time of inspection, and the inspector’s interpretation of these factors. Subsequent significant meteorological events or changes to the site (especially with regard to the soil) may affect the stability and conditions of the trees and therefore the validity of this report.

9.0 Review

Completed by		
Name	Signed	Date
Anthony McCarthy <i>Dip Arb L4 (ABC); PTI (LANTRA)</i>		19.08.2024
Reviewed by		
Name	Signed	Date
R. Arnold <i>Dip Arb L4 (SEG), PTI (LANTRA), ND Arb.</i>		19.08.2024

Appendix A: Survey Methodology

- The trees on the site were originally surveyed without reference to proposed site layout.
- The position of each tree was originally plotted using GPS onto the supplied topographical plan. Where the tree location did not match that marked on the topographical plan, precise measurements from reference points on site were used in conjunction with the GPS in order to gain an accurate location.
- Small trees with a stem diameter less than 75mm were not surveyed.
- Each individual tree has been given a tree identification number. Metal tags have not been used for this survey. The tree numbers associated with each tree are cross referenced within the schedule and plans at Appendices B & C.
- The tree species have been recorded with common names.
- All tree heights and canopy spreads have been measured using a laser rangefinder. Tree heights are given in metres.
- All stem diameters were measured at 1.5 metres above ground level using a diameter tape, and are given in millimetres.
- The canopy heights are given in metres and are a measure of the height of the main canopy above ground level.
- With regard to age class the following approximations have been used:

Young	Saplings or newly-planted trees
Early Mature	Established trees up to 1/3 of expected height and crown
Semi-Mature	Early mature: Between 1/3 and 2/3 of expected height and crown
Mature	Between 2/3 and full expected height and crown
Fully Mature	Full expected height and crown
Over Mature	Large diameter for species, crown retrenched and/or physiological health obviously declining

- The structural condition of the trees has been assessed and is summarised as:

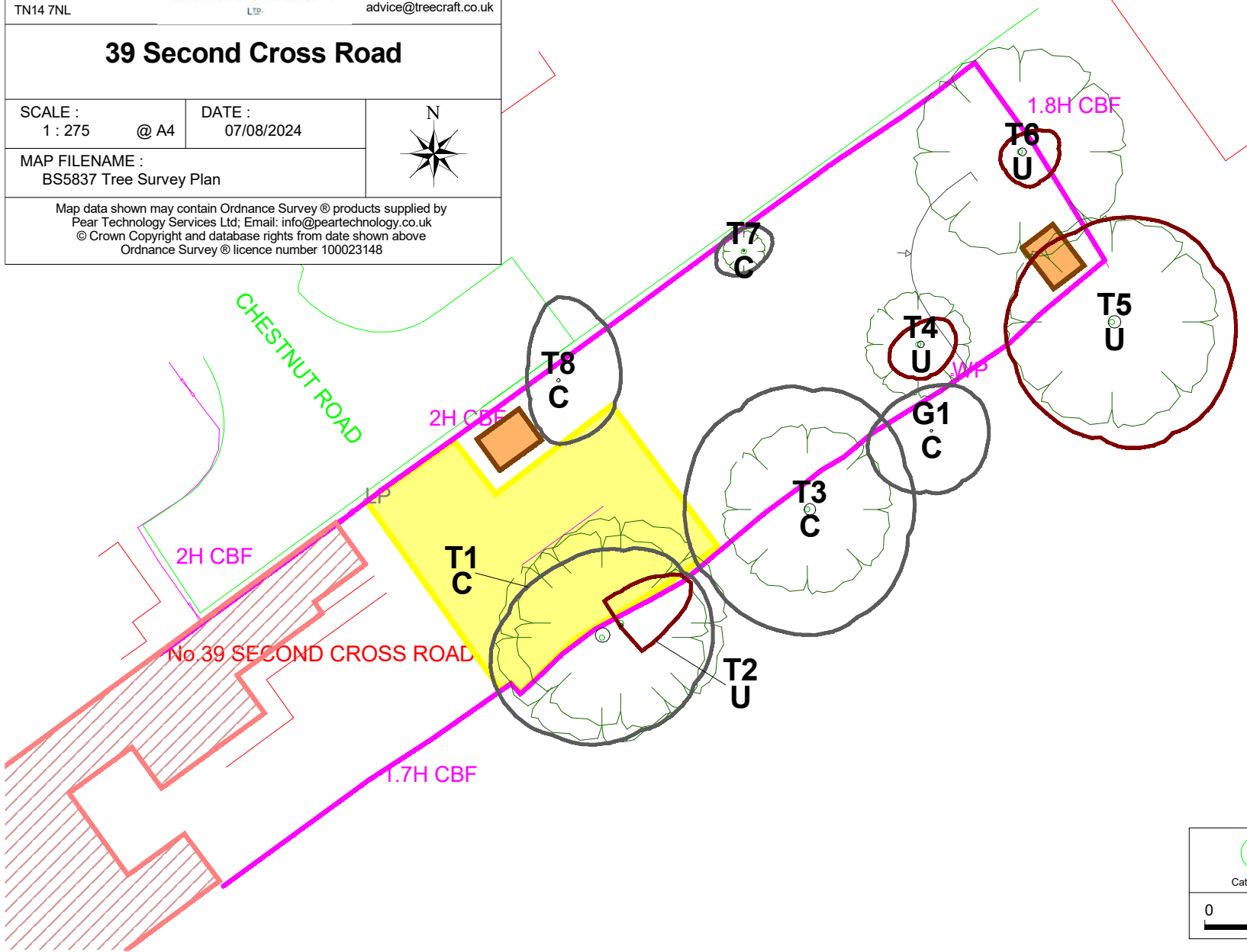
Good	No defects apparent
Fair	Minor defects, unlikely to require remedial work in the short-term
Poor	Major defects, likely requiring significant remedial work in the short-term





- The physiological condition has been recorded to provide an indication of the tree's general health and vitality. The trees have been described thus:





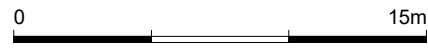
Good	Healthy and with no symptoms of significant disease.
Fair	Disease/stress present or vitality is slightly impaired.
Poor	Disease/stress present and vitality significantly impaired
Dead	

- The crown, main stem(s), and roots (where visible) of each tree or group were individually assessed.
- General comments have been made where appropriate.
- Estimated remaining contribution has been categorised as: less than 10 years, 10-20 years, 20-40 years or over 40 years, based upon an assessment of each tree or group's useful remaining life expectancy

Hillside Farm Rushmore Hill Knockholt TN14 7NL				01732 641492 advice@treecraft.co.uk
<h3>39 Second Cross Road</h3>				
SCALE : 1 : 275 @ A4	DATE : 07/08/2024			
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	Driveway [Gravel]
	Sheds
	Building
	Property Boundary [Fenced]

			
Category 'A'	Category 'B'	Category 'C'	Category 'U'
			

BS5837:2012 Tree Survey

Tree Craft Ltd

Client: Tony Bianchi
 Project: 39 Second Cross Road, Twickenham, TW2 5QY
 Survey Date: 26/04/2024
 Surveyor: Anthony McCarthy



Unit 16, Hillside Farm
 Rushmore Hill
 Knockholt
 Kent
 TN14 7NL
 consultancy@treecraft.co.uk

Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment		
G1												
Mixed species	9	1	130	N	2	2	M	A: 7.6 R: 1.55	Fair	C: Fair S: Fair B:	No action :: No action Group of 1 no. wild cherry (western tree) and 1 no. magnolia (eastern tree). Cherry heavily suppressed to west, magnolia suppressed to north.	C.2 10 to 20 yrs
T1												
Sycamore <i>Acer pseudoplatanus</i>	14	3	701 (Eq)	N	4	5	M	A: 222.1 R: 8.4	Fair	C: Fair S: Fair B: Fair	No action :: No action Previously pollard at 8 metres, with mature regrowth. Bifurcated at base, with further bifurcation in eastern stem at 1 metre.	C.1 10 to 20 yrs
T2												
Common Holly <i>Ilex aquifolium</i>	7	1	150	N	1.5	2	M	A: 10.2 R: 1.8	Fair	C: Poor S: Poor B:	No action :: No action Very heavily suppressed by T1 immediately to west, with heavy lean and weighting to east. Stem ivy-covered.	U n/a
T3												
Common Ash <i>Fraxinus excelsior</i>	15	4	576 (Eq)	N	6	5	M	A: 150.3 R: 6.91	Fair	C: Fair S: Fair B:	No action :: No action Multistemmed, previously pollarded at 7 metres, with mature regrowth. Weak fork union between southeastern stems.	C.1 10 to 20 yrs

Age Classifications:	N	Newly planted	EM	Early Mature	Condition:	C	Crown	Stems:	Ø	Diameter
	Y	Young	M	Mature		S	Stem		(Eq)	Equivalent stem diameter using BS5837:2012 definition
	SM	Semi-mature	OM	Over Mature		B	Basal area	ERC:		Estimated Remaining Contributio

Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC	
		No	Ø (mm)	Spread (m)	Clear (m)							
T4												
Common Pear <i>Pyrus communis</i>	6	1	320	N	1	2	M	A: 46.3 R: 3.83	Fair	C: Fair S: Poor B: Poor	No action :: No action Bifurcation at 1.8 metres. Wound and associated, localised decay in eastern side of stem, at 1 metre. Cavity in historic branch removal wound on northern side of stem, at 0.5 metres.	U n/a
T5												
Sycamore <i>Acer pseudoplatanus</i>	13	4	617 (Eq)	N	5	3	M	A: 172.3 R: 7.4	Fair	C: Poor S: Poor B: Poor	Reduce crown(s) :: By 4 metres Widespread squirrel damage on branches and major limbs, with dead/decayed branches in crown. Decay in western side of base, more severe in western and large southern stems, extending from ground level to 1.5 metres.	U n/a
T6												
Sycamore <i>Acer pseudoplatanus</i>	5	1	395	N	1	2	M	A: 70.6 R: 4.74	Fair	C: Poor S: Fair B: Poor	No action :: No action Historic stem removal/failure at ground level, with associated decay. Union between stub and remaining stem below soil surface. Wound/missing bark on southern side of remaining stem. Heavily-pollarded to 5 metres.	U n/a
T7												
Camellia <i>Camellia sp.</i>	3	5	85 (Eq)	N	1	0.5	M	A: 3.3 R: 1.02	Good	C: Good S: Fair B: Fair	No action :: No action Mature shrub of spring-flowering variety.	C.1 10 to 20 yrs
T8												
Himalayan Tree-Cotoneaster <i>Cotoneaster frigidus</i>	7	1	170	N	4	3	M	A: 13.1 R: 2.04	Fair	C: Fair S: Fair B: Fair	No action :: No action Adjacent to shed, very close to northern boundary fence. Climbing plant throughout crown.	C.1 10 to 20 yrs
Age Classifications:	N	Newly planted	EM	Early Mature	Condition:			C	Crown	Stems:	Ø	Diameter
	Y	Young	M	Mature				S	Stem		(Eq)	Equivalent stem diameter using BS5837:2012 definition
	SM	Semi-mature	OM	Over Mature				B	Basal area	ERC:		Estimated Remaining Contributio

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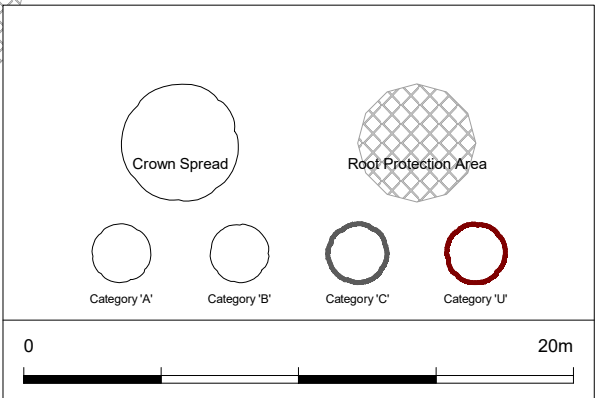
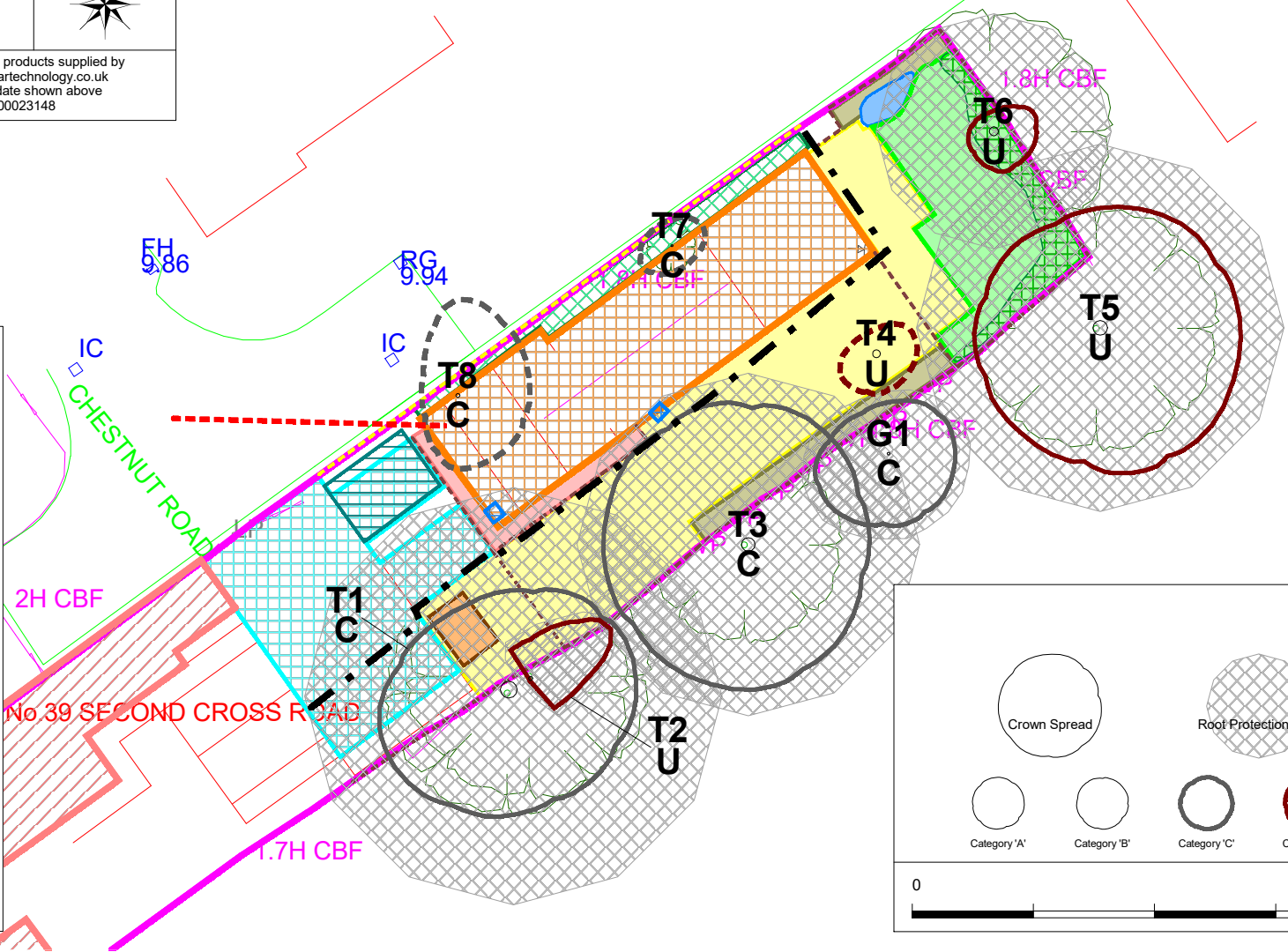


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Appendix C

- Paving [Porous] - Proposed
- Raised Planting Beds - Proposed
- Shrub Planting - Proposed
- Pond - Proposed
- New Shed - Proposed
- Parking/Driveway [Gravel] - Proposed
- Access Paving - Proposed
- New Building - Proposed
- Lawn - Proposed
- Wildflower Planting - Proposed
- Building - Existing
- Storage Area - Proposed
- Approx. Trial Pit Locations
- Property Boundary
- Iron Railing - Proposed
- New Fencing - Trellis or Closeboard [Proposed]
- Category C trees to be removed
- Category U trees to be removed
- Approx. Underground Service Route - Proposed
- Protective Fencing [Construction Phase]



APPENDIX D – PROTECTIVE FENCING

Figure 2 Default specification for protective barrier

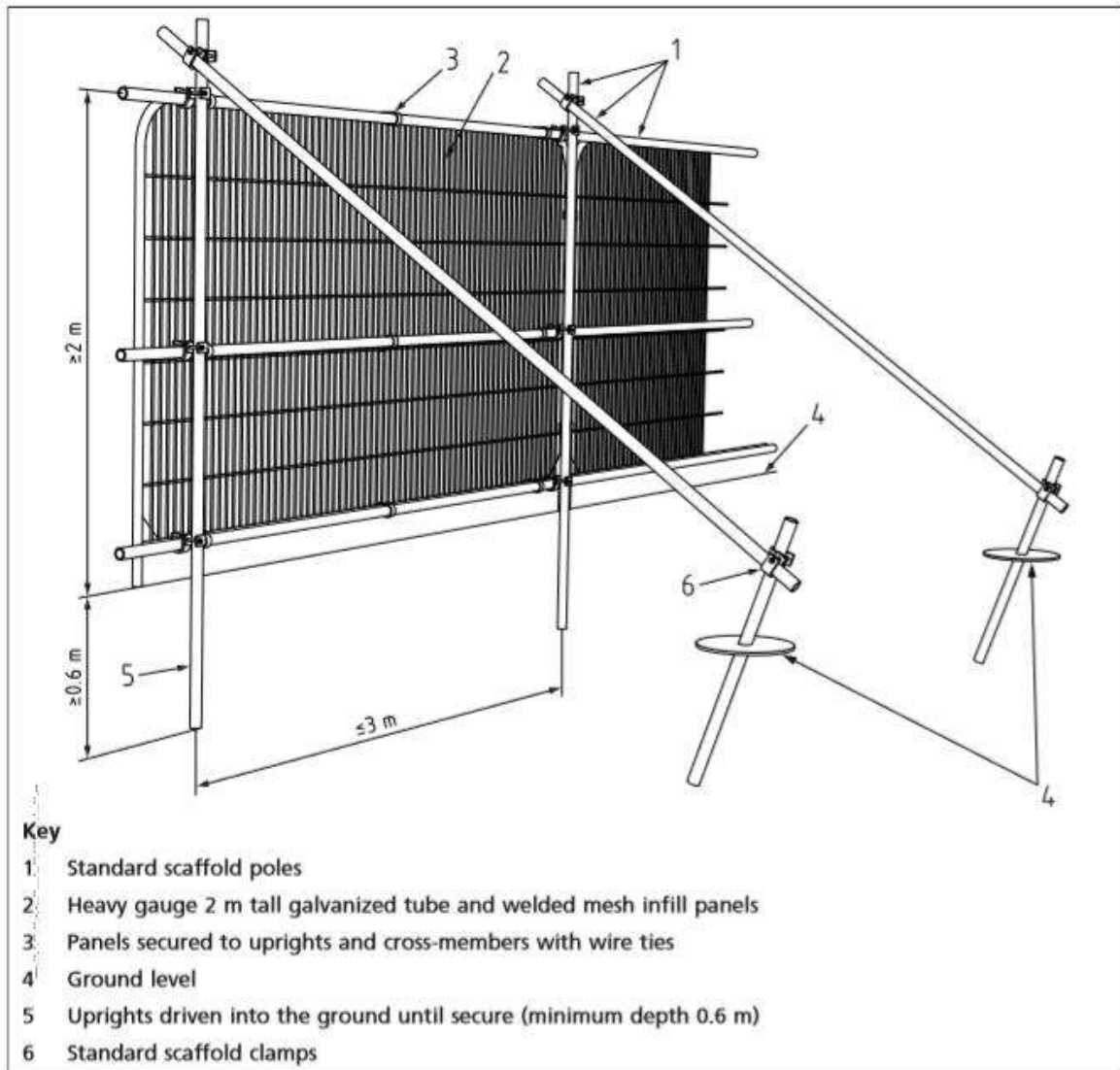
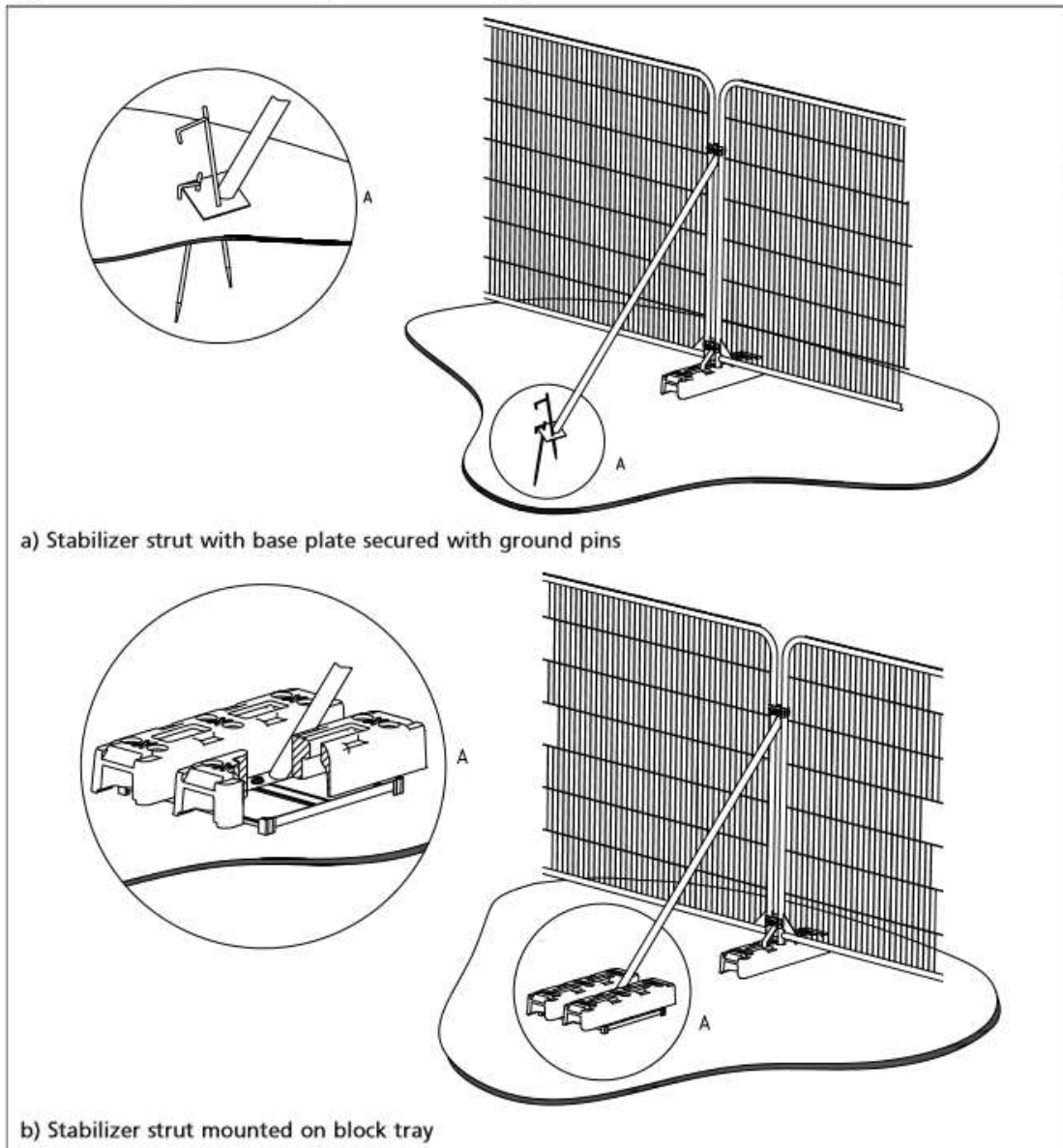
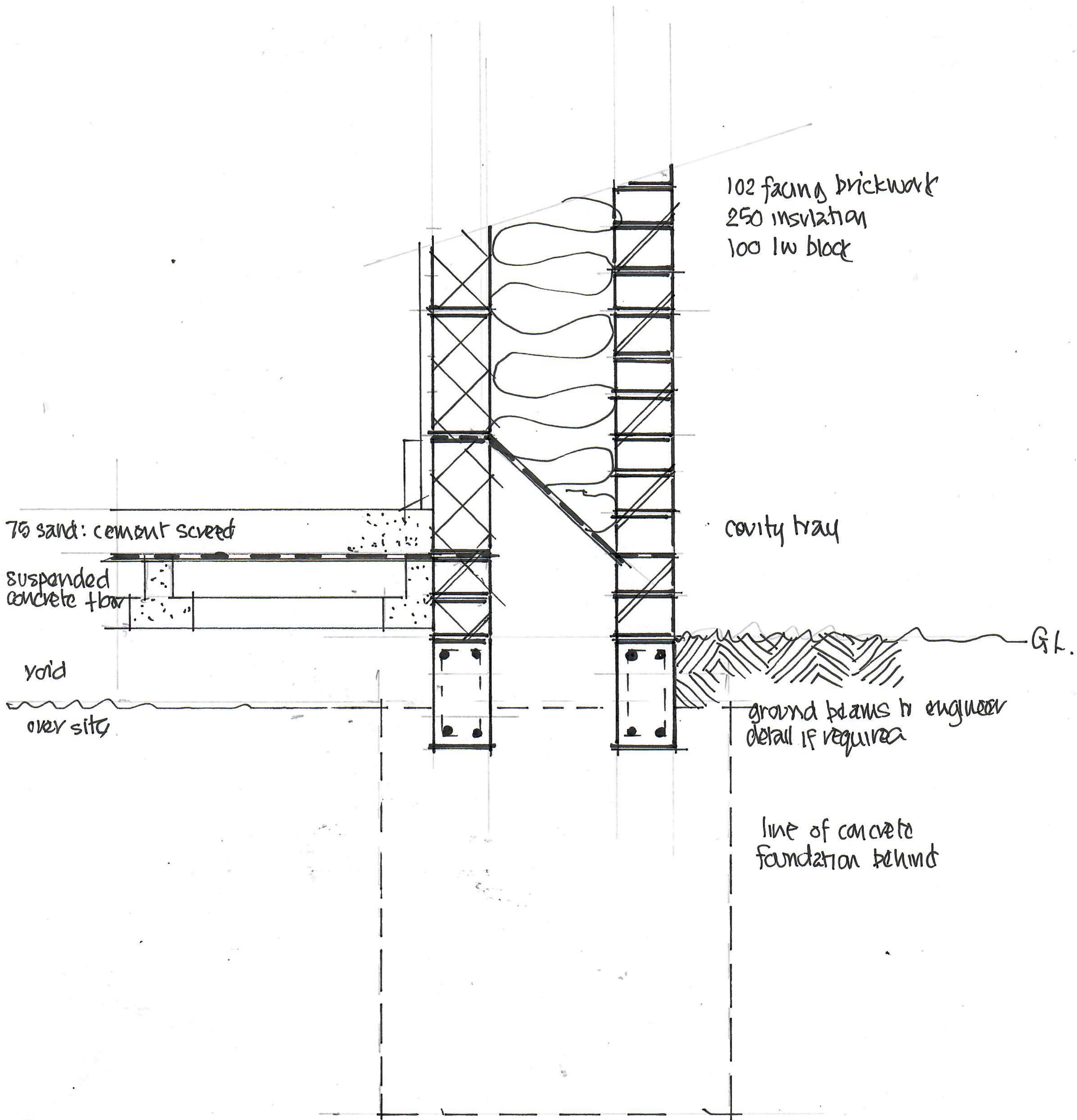


Figure 3 Examples of above-ground stabilizing systems







Showing trial pit dug in approximate location marked on Tree Protection Plan, where proposed elevation of new building intersects edge of tree T3's RPA. No roots encountered when digging pit, or visible in edges/base.

Appendix F – Tree Works Schedule

Tree No	Species	Proposed Works	Reason
T4	Common pear (<i>Pyrus communis</i>)	Fell, and remove stump.	Poor condition; to facilitate landscaping scheme
T7	<i>Camellia</i> sp.	Fell, and remove stump.	To facilitate construction
T8	Himalayan Tree Cotoneaster (<i>Cotoneaster frigidus</i>)	Fell, and remove stump.	To facilitate construction
T5	Sycamore (<i>Acer pseudoplatanus</i>)	Reduce crown by 4 metres, within 1 year of report issue.	Recommended tree safety works, but tree not within client ownership.