



Arbor Cultural Ltd. *Providing Expertise on Your Trees*

BS5837 Arboricultural Report,

Arboricultural Impact Assessment

and Method Statement

OUR REFERENCE	AC.2020.429
CLIENT	Mr Rakesh Patel
SITE	23 Norbury Road, Thornton Heath, Croydon, CR7 8JP
REPORT BY	I S Thompson (known as Tom) M. Arbor. A., BSc. (Hons) Arb, MSc. eFor
DATE	2nd November 2020
DATE OF SITE VISIT	16th October 2020

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23 Norbury Road, Thornton Heath, Croydon, CR7 8JP

Application Ref No Unknown

Conversion of a public house to residential dwellings

Report produced by

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Date.....2nd November 2020.....

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Executive Summary

The proposal is to develop a public house on land at 23 Norbury Road, Thornton Heath, Croydon, CR7 8JP.

The proposed scheme requires the removal of some very poor-quality trees with limited amenity value.

The impact of the trees on the proposed building and vice a versa have been assessed and found to be consistent with the long-term health of the trees and sustainability of the building provided that build and protection methods in accordance with industry best practice and BS 5837: 2012 (Trees in relation to design, demolition and construction – recommendations), are followed as specified.

Possible conflicts are;

- The driveway where it is being extended to the proposed new garages, will run through the root protection area (ROPA) of T5 a sycamore. This is addressed in Section 9 Hard Surfaces within the RPA.

- The garages will be partially within the RPA of T5. This is addressed in Section 110 of the AMS Foundation Design.

1 Terms of Reference

1.1 I have been instructed in writing by Mr Rakesh Patel of with regards to a planning application to be made by himself in respect of the above development at 23 Norbury Road, Thornton Heath, Croydon, CR7 8JP and report on the following in accordance with BS 5837 Trees in Relation to Design, Demolition and Construction - Recommendations 2012:

- I. Tree survey
- II. Arboricultural Impact Assessment
- III. Arboricultural Method Statement
- IV. Tree Protection Plan

1.2 The site was surveyed by I. S. Thompson (known as Tom) on Friday 10th October 2020 in the morning. The weather was dry and sunny, and visibility was good. The relative quantitative and qualitative tree data was recorded to assess the condition of the trees, their value, and any constraints that they pose to the prospective development and where necessary the tree protection measures, and construction methods required to ensure their safe retention.

1.3 The tree information recorded relates to the tree condition, age, safe useful life expectancy, location, canopy spread, canopy height and tree height and direction of first significant branch as well as any tree work that is required.

1.4 I have based this report on my site observations and investigations, and I have come to conclusions in the light of my qualifications obtained and experience gained whilst working in the field of arboriculture. I have qualifications and practical experience in arboriculture and forestry and list the details in Appendix I.

1.5 Limitations and Use of Copyright:

1.5.1 All rights in this report are reserved. No part of it may be reproduced or transmitted, in any form or by any means without our written permission. Its contents and format are for the exclusive use of Mr Patel and his associates. It may not be sold, lent out or divulged to any third party not directly involved in this situation without the written consent of Arbor Cultural Ltd. This report will remain the intellectual property of Arbor Cultural Ltd. until payment has been received in full.

1.5.2 This report contains all my advice and opinions and any representation and/or statements that have or may have been made which are not specifically and expressly included in this report should not be relied upon and no responsibility is taken for the accuracy of such statements.

1.5.3 The Inspections were carried out based on ground level, Visual Tree Assessment (VTA) examination of external features of each individual tree. Binoculars were used to assess the aerial parts. The report and recommendations relate to the condition of the trees and their relationship to their surroundings at the time of inspection only. All measurements, proportions and assessments of age are approximate.

1.5.4 Visual assessment, in accordance with accepted arboricultural practice, was based on apparent vitality (leaf cover, extension growth), presence of deadwood and die back, fractured and detached limbs, evidence of excessive basal movement and external indications of stem and basal decay likely to affect the structural condition of the tree. No decay detection equipment either invasive or non-invasive was employed.

- 1.5.5** Trees are living organisms whose health and condition can change rapidly. The conclusions and recommendations in this report are only valid for one year. This report will be invalidated if there are any changes to the site as it stands at present, e.g. building of extensions, excavation works, importing of soils, extreme weather events etc.
- 1.5.6** The survey findings are of a preliminary nature regarding assessment of risk of direct damage (by contact) from trees to built structures. No soil samples were taken, or trial pits were dug, therefore no risk assessment was carried out regarding subsidence (indirect damage). No parts of the drainage or service systems were inspected on site as I am not qualified to do so.
- 1.5.7** If you, or your advisers, have at your disposal any information to suggest that the existing property is or has been suffering any tree related structural defect, I would ask that you release the information to us. All relevant data is presented within this report together with any recommendations for further analysis, as appropriate.
- 1.6** A principle aspect of tree inspections in relation to proposed developments is an assessment of the risk posed by trees in proximity to people or property. Generally, tree risk will increase with the age of the trees. The benefits afforded by the trees will also increase with age. The management recommendations will be guided by an analysis of the risk posed by the trees and the benefits afforded by them.

1.7 Documentation

1.7.1 The following documentation was provided when the work was commissioned.

- Letter/Email to confirm commission of the work.
- Plan of the site received on 8th October 2020 showing the existing and proposed layout.

1.8 Disclaimer

1.8.1 I have no connection with any of the parties involved in this situation that could influence the opinions expressed in this report.

1.8.2 Following an initial site visit to assess the likely position of the development, the following arboricultural information is provided in support of the application.

2. Introduction

2.1 Site

2.1.1 The site of the proposed development is within the current boundary of 23 Norbury Road, Thornton Heath, Croydon, CR7 8JP, and will be adjacent to several currently unprotected but significant trees. Following the site meeting the measures identified in this report are designed to minimise any likely impacts of the trees on the new structure and its foundations and any likely impacts of the construction on the trees, see plan AC.2020.429 TPP-01 Rev A attached.

2.2 Trees

2.2.1 The trees are in the rear garden of the public house in an area with mounded up soil, piles of rubbish and several abandoned cars. A schedule of the significant trees, their condition and category of retention is attached as Appendix VII.

2.2.2 An accurate topographical survey of the site was not provided. The tree locations were measured in relation to the site boundaries and other known features and triangulated and are accurate to +/-1.5m. So, the drawing number AC.2020.429 TPP-01 Rev A provides a good representation of the tree location in relation to the site and the proposed development.

2.2.3 The trees have been assessed and categorised in relation to the methodology in Table 1 of BS 5837 (2012) Trees in Relation to Design, Demolition and Construction, as specified in Appendix III. The results are recorded in Appendix VII.

- 2.2.4** There were a total of seven trees surveyed. This comprised of five sycamores, two B1 category and the rest C1 category, and two plum trees both C1s.
- 2.2.5** Any trees not included individually in the survey were either in groups or had other trees whose constraints exceeded theirs in respect to the proposed development and all associated works.
- 2.2.6** All tree works considered necessary for health and safety reasons or to facilitate the development will be agreed with the Local Planning Authority and undertaken in accordance with the planning conditions attached to the planning consent. They will be undertaken in accordance with British Standard 3998 (2010) Recommendations for Tree Works, unless otherwise specified with clear justification for any deviation from the British Standard. This will be undertaken by an arboricultural contractor approved by the Local Authority Tree Officer.
- 2.2.7** If at any time additional pruning works are required permission must be sought from the Local Planning Authority first and then carried out in accordance with BS 3998 Recommendations for Tree Works (2010), unless otherwise specified with clear justification for any deviation from the British Standard. This will be undertaken by an arboricultural contractor approved by the Local Authority Tree Officer.

2.3 Proposed Development

2.3.1 The proposed works consisted of the conversion of a public house to residential dwellings.

2.4 Issues of Light and Shading

2.4.1 The proposed position of the developed building will not be affected by the retained tree T5 a sycamore in the adjacent property. This tree is close to the proposed garages but shading of the garages will not be significant issue.

2.4.2 It is not anticipated that there will be any increased pressure for tree pruning of the retained tree as a result of the proposed development.

2.5 Description (including levels)

2.5.1 This is currently a public house with some parking and a garden area to the rear. The garden has been used as a storage area with increased soil levels across the rear half of the site and mounds of dumped materials along the edge of this. This is in the western side of the site, backing onto residential gardens. The pub, driveway and site entrance are to the east along the road frontage. The site was essentially level prior to the importing of material which has resulted in a one- or two-meter ground level increase to the west.

2.6 Soils

2.6.1 There is no information provided about the soils and there was no on-site investigation undertaken but the British Geological Society (BGS) viewer indicates that the sub soil is London Clay mainly comprises bioturbated or poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay (BGS Viewer, 2020).

2.6.2 The BGS viewer had no information about the likely drift layer, (BGS Viewer, 2020).

2.6.3 A soil compaction test was NOT undertaken using a Dickey John due to the amount of made up ground and rubbish piled up, over a meter in height in most places.

2.6.4 Nearby borehole logs viewed on BGS viewer and located at Bullet Road around 200 m from the site indicate the following soil conditions. Grey and brown sandy silty clay to 1.6m, sand with gravel to 2.6m, London Clay with areas of light brown medium sand to 5.6m with clay of various kinds to 27.6m with fine sand with shell fragments below that, (BGS Viewer, 2020).

3 Arboricultural Impact Assessment

3.1 Presence of Tree Preservation Orders (TPO) or Conservation Area Designation

3.1.1 The Local Planning Authority has not yet been contacted to establish whether any Tree Preservation Order (TPO) covers any of the trees, or to determine if the site is situated within a Conservation Area (CA). It would be necessary to determine whether either of these planning controls are in operation before commencement of any tree works.

3.1.2 Exemptions

There are two exemptions when this notification or permission are not required. They are detailed below:

- Removal of an imminent threat to people or property
- Removal of deadwood or dead trees

3.2 Effects on the amenity value of the trees by the development and facilitation pruning

3.2.1 There are six trees and seven saplings that are proposed for removal as part of this application. The trees are T1-4, and T6 and T7. These are mostly small trees with the two plums T3 and T4 being more mature but both in poor condition. Consequently, there will be a minimal effect to their amenity value of the area.

3.3 Potential incompatibilities between the layout and the trees proposed for retention

3.3.1 There is proposed construction of foundations within the RPA of a retained tree, along the southern boundary. This is T5 a sycamore in the adjacent property. This will be addressed in Section 11 of the Arboricultural Method Statement, Foundation Design.

3.3.2 There will not be any services installed within any Root Protection Area (RPA). The services will be taken of the existing supply to the pub.

3.3.3 The crowns of T5 will require to be raised where it extends over the proposed garage. The resulting pruning wounds will be of moderate size up to 150mm diameter and should not have significant detrimental effects on the long-term health of the tree. It has a poor form due to the bad pruning on the other side of the tree, and sycamore trees and generally adapt well to pruning. All tree surgery works will be undertaken prior to construction activity and in accordance with the Arboricultural Method Statement Section 12 Remedial Tree Works.

3.3.4 Site access will be from the eastern end of the site, which is the existing entrance and gravel driveway.

3.4 Infrastructure requirements – Highway Visibility, Lighting, CCTV, Services

3.4.1 There is no requirement for any tree removal or pruning to create adequate highway visibility. There will be no requirement for street lighting or CCTV visibility, or services close to any of the trees.

3.4.2 No services or other infrastructure requirements will have any impact on the retained trees.

3.5 Mitigating tree loss and new planting

3.5.1 There is limited space for new tree planting, but the garden area is being re-landscaped to improve the general appearance of the site. There will be some replacement planting to mitigate the loss of the trees being removed.

3.5.2 The landscaping is being addressed in a separate plan and methodology.

3.6 Proximity of trees to structures

3.6.1 The impact of trees on buildings and vice versa and allowance for future growth have all been considered in the siting of the new buildings and structures. Tree size, future growth, light/shading, leaf, and fruit nuisance etc. have received due attention and are not considered to be an issue. This is due to the considerable distance of the retained trees from the development and the protection measures proposed within this report.

3.6.2 Overall the processes of construction are highly unlikely to have a detrimental effect upon the health of the retained trees assuming recommendations made in this report are adhered to at all times by the contractors e.g. the positioning of a stout fence is placed between the retained trees and all construction activities prior to commencement of any works and for it to remain intact and in position throughout the duration of the construction activities.

3.7 Issues to be addressed by the arboricultural method statement

- **Protective fencing to be established around the retained trees**
- **Ground protection measures around the RPA of retained trees where work access is required.**
- **Site access**
- **Contractors parking, welfare facilities and storage areas**
- **Hard surfaces within the RPA of retained trees**
- **Remedial tree work**
- **Construction within the RPA of retained trees**
- **No-dig construction techniques**

Arboricultural Method Statement

Tree Protection throughout the Duration of Demolition and Construction Works

All the details specified in this method statement will need to be supervised by an Arboricultural Consultant with suitable qualifications and experience.

Arboricultural Method Statement includes a Tree Protection Plan to identify:

- Trees to be retained – identified with a dashed line with RPA written within it and green, blue, or grey location marker circles and the corresponding A, B or C category label.
- Protective fence positions identifying the Construction Exclusion Zones (CEZ).
- Measurements to identify fence positioning in relation to centre of tree or other known features
- Contractor huts and storage areas

1 Construction Exclusion Zone

1.1 No works will be undertaken within any Construction Exclusion Zone (CEZ). The CEZs are to be afforded protection at all times and will be protected by fencing. A protective fence shall be erected prior to the commencement of any site works e.g. before any materials or machinery are brought on site, development or the stripping of soil commences. The fence shall have signs attached to it stating that this is a Construction Exclusion Zone and that **NO WORKS are Permitted within the fence**, see Image 4 in Appendix II. The tree protection fencing may only be removed following completion of all construction works.

- 1.2** The fence is required to be sited in accordance with the Tree Protection Plan ref AC.2020.429 TPP-01 Rev A enclosed with this method statement. They must ideally be constructed as per Figure 2 in BS 5837 2012 and be fit for excluding any construction activity, (See Appendix II). Any other fence or barrier used must be fit for the purpose.
- 1.3** All tree protection fencing shall be regarded as sacrosanct and will not be removed or altered without prior written consent of the Local Authority Tree Officer.

2 Ground Protection Measures

- 2.1** The ground protection measures will be for pedestrian work access only. This will consist of a single thickness of scaffold boards placed either on top of a driven scaffold frame to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100mm minimum depth of woodchip), laid onto a geotextile membrane. Alternatively, Ground Guards or a similarly tested product, as detailed in Appendix VI could be used. This is accordance with BS 5837 (2012) and is to prevent compaction to the underlying soil.

3 Access Details

- 3.1** All access for construction vehicles will be from the eastern end of the site, which is the existing site entrance and driveway, as shown on the plan AC.2020.429 TPP-01 Rev A.

4 Contractors car parking

4.1 This will be off-site.

5 Site Huts and Toilets

5.1 This will be in the rear garden as shown on the tree protection plan AC.2020.429 TPP-01 Rev A.

6 Storage Space

6.1 This will be in the rear garden as shown on the tree protection plan AC.2020.429 TPP-01 Rev A.

7 Additional Precautions

7.1 No storage of materials or lighting of fires will take place within any construction Exclusion Zone. No mixing or storage of materials will take place up a slope where they may leak into a Construction Exclusion Zone.

7.2 There shall generally be a presumption against burning on site. Where it does occur, no fires will be lit within 20 metres of any tree stem and will consider fire size and wind direction so that, no flames come within 5m of any foliage. Situations where fires are not permitted at all are:

- Where the ground is waterlogged as the heat will transfer through the water and damage tree roots significant distances away.
- During periods of drought, where there are peaty or highly organic soils, as there is a risk of underground fires occurring.

7.3 No notice boards, cables or other services will be attached to any tree.

7.4 Materials which may contaminate the soil will not be discharged within 10m of any tree stem. When undertaking the mixing of any material it is essential that, any slope of the ground does not allow contaminants to run towards a tree root area.

7.5 No materials that are likely to have an adverse effect on tree health such as oil, bitumen or cement will be stored or discharged within 10 meters of the trunk of any retained trees. In the event of any accident of spillage in or adjacent to the protected trees the contractor/staff is to immediately stop work in the vicinity and inform the project arboriculturist.

7.6 In the event of spillage, the area is to be secured with sandbags on the line of the tree protection area and measures taken to drain/soak any spillage away from the protected area.

8 Demolition

8.1 There will be no demolition within any of the RPAs of retained trees, so there will not need to be any special measures or precautions undertaken other than the tree protection measures as detailed in the report and in AC.2020.429 TPP-01 Rev A, which shall be installed prior to any site works commencing.

9 Hard Surfaces within the RPA

9.1 The new driveway shall be constructed without soil compaction or soil stripping and laid in accordance with this Method Statement. A product such as Wrekin's Protector Web or Geosynthetics Cellweb, or alternative with evidence of its effectiveness at protection roots, shall be used. It shall be installed in full accordance with the manufacturer's specification.

9.2 The construction of the driveway will only take place following completion of building construction.

9.3 The no-dig construction shall be undertaken in accordance with the manufacturer's specification and method statements.

9.4 Ground Preparation:

- All ground vegetation will be killed using a suitable herbicide to the required level, under the supervision of the project arboriculturalist.
- All dead organic material will be removed.
- All major protrusions will be removed. Stumps ground out.
- Remove all the rubbish and take the soil level back to the original level prior to the dumping of waste material and soil.
- Fill major hollows with no fines 4/20mm clean angular stone.
- Place Geotextile over the area to be protected ensuring overlaps with a minimum of 300mm.
- Mark out areas to be protected with edging detail e.g. timber boards.

9.5 Installation Process:

- Lay Protector Web (or equivalent i.e. Cellweb) over entire area of proposed driveway where it extends through the RPA of T5, to extend 100mm beyond path width (see manufacturers specification), and pin with 4 metal pins along the width of the panel.
- Expand the panel over the geotextile extending to the required length, then pin across the opposite panel side.
- Pin along the length of the panel on all sides.
- If full panels are not being used, then ensure the cells have been expanded to their full dimensions.
- Staple or cable tie any adjacent panels together.
- The geocell panels can be cut to shape if required with a heavy-duty Stanley knife.

9.6 Filling the Geocell

- Use 4/20mm or 40/20mm angular stone depending on the cell depth being used.
- Fill the cells with clean angular stone.
- Allow 25mm overfill for any settlement of the stone in the cells.
- If the area is to be trafficked immediately, slightly increase the amount of surcharge overfill to a maximum 50mm
- This will be tipped from one end so that machinery moves on already spread sub-base and not upon the geogrid or ground close to the geogrid.
- Compact the sub-base using handheld vibrating tamper

9.7 Apply Surface Dressing

There are various surface dressings that can be applied, and the manufactures guidance on how to apply each should be followed from the specification.

Surface dressing include

- Block paving
- Porous and standard asphalt
- Resin Bonded Gravels
- Loose gravel
- Concrete

10 Construction within the RPA (No-dig)

10.1 The proposed garages extend into the RPA of T5 so some form of alternative foundation system will be required. This will need to be constructed using a no-dig construction solution.

11 Foundation Designs

11.1 As there is construction in close proximity to T5 a retained sycamore on the adjacent property some form of tree friendly foundation will be required to minimise the root disturbance. This could involve the use of a slab or mini piles or screw piles.

- 11.2** The raft or beams will be located on the pile caps and will be at or above the highest point of the existing ground level to prevent any further damage to tree roots.
- 11.3** An impermeable layer will be placed underneath any raft or beams that are poured on site. This is to prevent leaching from the cement whilst it sets. If pre-cast rafts or beams are used, then this is not required.
- 11.4** Alternatively a can be laid straight on top of the ground level, with no original soil removed, only the imported soil and waste material to take the site back to the original ground level.
- 11.5** Specialist input on foundation design and the depth of foundations, pile numbers and locations will be required from a structural engineer, and they will have to be consulted if any pile locations are moved to avoid significant tree roots.

12 Remedial Tree Works

- 12.1** Tree works (see schedule at Appendix VII) will be undertaken in one phase, and this will be undertaken prior to any construction or demolition works and prior to the installation of any tree protection measures. All tree works are to be carried out in accordance with BS 3998 (British Standard Recommendations for Tree Work 2010) unless otherwise specified with clear justification for any deviation from the British Standard.
- 12.2** There are six trees and seven saplings that are proposed for removal as part of this application. The trees are T1-4, and T6 and T7.

- 12.3** If at any time additional pruning works are required permission must be sought from the Local Planning Authority first and then carried out in accordance with BS 3998 Recommendations for Tree Works 2010, unless otherwise specified with clear justification for any deviation from the British Standard.
- 12.4** Ideally tree surgery work and shrub and hedge removal should take place outside of the bird nesting season which is officially from February to August. As this is small-scale works with a relatively low cost this should be undertaken as soon as any planning permission is obtained so that it is completed before February and does not hold up any site works.
- 12.5** Tree work can be done in the bird nesting season but would require a watching brief of 20 minutes to check for bird activity and cannot proceed if bird nests are found to be present.

13 Use of Herbicides

- 13.1** It is not planned to use any herbicide in the proposed development unless they are used in the preparation of any no-dig construction. However, if any is required it shall be systemic, spot applied, and mixed according to manufacturer's recommendations.

14 Contingency Plan

- 14.1** Water is readily available on site and will be used to flush spilt materials through the soil and avoid contamination to tree roots. At the time of any spillage the main contractor will contact an arboriculturist for advice.

15 Responsibilities

- 15.1** It will be the responsibility of the main contractor to ensure that the planning conditions attached to planning consent are adhered to always and that a monitoring regime regarding tree protection is adopted on site.
- 15.2** The main contractor will be responsible for contacting the Local Planning Authority at any time issues are raised related to the trees on site.
- 15.3** The main contractor will ensure the build sequence is appropriate to ensure that no damage occurs to the trees during the construction processes. Protective fences will remain in position until completion of **ALL** construction works on the site.
- 15.4** The fencing, signage and ground protection measures must be maintained in position at all times and shall be checked on a regular basis by an on-site person designated that responsibility.
- 15.5** The main contractor will be responsible for ensuring sub-contractors do not carry out any process or operation that is likely to adversely impact upon any tree on site or those immediately adjacent to it.

16 Arboricultural Supervision

16.1 Since BS5837 was amended in 2012 site supervision has been identified as a key element of the process of protecting trees during construction. It requires that there be “an auditable system of arboricultural site monitoring. This should extend to arboricultural supervision whenever construction and development activity is to take place within or adjacent to any RPA.”

16.2 Site Supervision

16.2.1 A site agent must be nominated to be responsible for all arboricultural matters on site. They must be nominated for each phase of work if demolition and construction contracts are to be awarded separately. The agent(s) must:

- **Be present on site for most of the time**
- **Be aware of the arboricultural responsibilities. This will require a site briefing/meeting between the agent and arboricultural consultant prior to the commencement of each phase of works**
- **Have the authority to stop any work that is causing or has the potential to cause harm to any trees**
- **Be responsible for ensuring that all site operatives are aware of their responsibilities towards trees on the site and the consequences of failure to observe these responsibilities**
- **Make immediate contact with the local authority and/or a retained arboriculturist in the event of any tree related problems occurring, whether actual or potential**
- **Contact details for Arbor Cultural Ltd are provided within this report**
- **Contact details for local authority tree officer are;**

Tree officer Robert Snodin
Address Bernard Weatherill House, Floor 6 - zone B, 8 Mint Walk, Croydon, CRO
 1EA
Main Switchboard 020 8726 6800
Email robert.snodin@croydon.gov.uk

16.3 Arboricultural Consultant

16.3.1 A suitably qualified arboricultural consultant shall be appointed to oversee development works and liaise with the council and the developer and contractors during the construction phase to ensure compliance with these guidelines.

16.3.2 Note: Failure to fulfil planning conditions or breaches of statutory legislation can lead to delays due to “stop notices” and can lead to the prosecution of contractors and company directors.

16.3.3 Adequate site supervision can protect the developer from delays, wasted expense and criminal prosecution.

16.3.4 The arboriculturalist will arrive at the site, check in at the site office and be safely escorted around the site by the site agent, checking the maintenance of tree protection measures. Routine visits will generally be unannounced. However, the arboriculturalist will also visit subject to advance notification and agreement to supervise any agreed works within the RPA.

- 16.3.5** Monitoring shall involve a schedule of routine visits. The frequency of these visits will vary depending on the size of the proposed development and the site-specific constraints. For private single residential developments, this will normally involve monthly supervision but for larger sites with multiple structures this could be weekly or fortnightly. This will need to be agreed with the local tree officer.
- 16.3.6** These visits shall include a pre-commencement meeting to ensure that all tree protection measures have been implemented and a sign-off sheet at the end of the development. Each visit will be accompanied by a small report detailing the findings identifying any actions and addressing any issues that have arisen. This is to provide ongoing liaison between the local planning authority (LPA), and all personnel involved in the site development. Any defects requiring rectifying must be notified to the site agent the client and the LPA by email as soon as possible.
- 16.3.7** Emergency situations will be notified by phone calls. Appropriate records will be kept and made available to the LPA if required to show evidence of the site monitoring. An example of this is shown in Appendix V.
- 16.3.8** Supervision will not require the arboriculturist to be present throughout all operations, to ensure that all tasks are carried out as per the approved methodology. They will be required at key times during any planned or unplanned incursions into the tree protection areas. This supervision will require the arboriculturist to attend site, if not for the whole task, then long enough to ensure that all the arboricultural objectives are fully addressed. Where tasks are ongoing, provided that the arboriculturalist is satisfied that the method statement is being followed and after an appropriate briefing the supervision may be reduced to telephone or email contact between the site supervisor and the arboriculturist.

16.4 The critical stages for site supervision are as follows:

- I** Prior to the start of construction, all tree protection measures as described must be checked as appropriate and signed off by an arboriculturalist. There will be a pre-commencement meeting with all party attendance, including LPA tree officer, to ensure that there are no unresolved issues.
- II** At predetermined activity related times as specified in Table 1. The tree protection measures as described must be checked as being retained and signed off by an arboriculturalist. All defects to be reported to the client and LPA.
- III** The potentially damaging activity to the trees must be observed by a suitably qualified arboriculturalist to ensure that the method statements are adhered to and the damage is kept to an absolute minimum. All defects to be reported to the client and LPA.
- IV** At periodic intervals during the construction process, the tree protection measures must be checked as being retained and signed off. All defects to be reported to the client and LPA.
- V** At the end of the construction phase, an arboricultural consultant must check that no damage has occurred to the trees and any remedial measures, e.g. de-compaction of soil must be recommended as required and remedial measures undertaken as soon as practicable. The outcome shall be reported to the client and local authority

16.4.1 The site supervision visits will be documented and circulated to the site agent, developer, architect, and Local Planning Authority as appropriate. The reports will detail the date of the visit, the operations being supervised and any issues that require action to meet the aims and objectives of this method statement.

Table 1 Site Supervision Programme

	Activity	Comments
1	Inspection of all tree protection measures to ensure that it is secure and fit for purpose prior to work commencing. This will need to be signed off by the arboriculturalist.	Report any defects or damage to the client and the LPA and ensure that they are made good.
2	Pre-commencement meeting with all party attendance, including LPA tree officer, to ensure that there are no unresolved issues. This will need to be signed off by the arboriculturalist.	Report any defects or damage to the client and the LPA and ensure that they are made good.
3	Supervision of the no-dig construction of the driveway to ensure that any tree damage or soil compaction is kept to a minimum and work is undertaken in accordance with the method statement. This will need to be signed off by the arboriculturalist.	Report any defects or damage to the client and the LPA and ensure that they are made good.
4	Supervision of the garage foundations within the RPA of T5 to ensure that any tree damage or soil compaction is kept to a minimum and work is undertaken in accordance with the method statement.	Report any defects or damage to the client and the LPA and ensure that they are made good.
5	Monthly monitoring of site and tree protection measures. This will need to be signed off by the arboriculturalist.	Report any defects or damage to the client and the LPA and ensure that they are made good.
Final	Completion of work, removal of all tree protection measures and inspection of trees and root zone for any damage. Any compaction of the soil must be rectified with remedial measures and damaged branches taken back to suitable growth points with a clean cut. This will need to be signed off by the arboriculturalist.	Report any defects or damage to the client and the LPA and ensure that they are made good.

17 Landscaping and Replacement Planting

17.1 There remains a good canopy cover both in the property and the wider area.

17.2 The landscaping is being addressed in a separate plan and methodology.

References and Bibliography

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Appendix I Abridged CV; Qualifications and Experience

I S Tom Thompson BSc (Hons Arb), MSc eFor, MArborA Cert Arb

1 Qualifications

Subjects	Level	Dates	
Bond Solon Expert Witness Training (CUBS)	Pass		2017
International Society of Arboriculture Certified Arborist	Pass	May	2012
Professional Tree Inspection Course (LANTRA)	Pass	April	2011
BSc Hons Arboriculture	(2.1)	2008	2009
FdSc Arboriculture	Distinction	2004	2007
MSc. Environmental Forestry (MSc eFor)	Pass	2001	2002
BSc. Hons Env Science (Conservation Management)	(2.2)	1997	2000
Environmental Studies	Access Course	1996	1997
Forestry & Practical Environmental Skills	NVQ I & II	1996	1997

2 Career Summary

Tom Thompson is a professional member of the Arboricultural Association (AA), an International Society of Arboriculture (ISA) Certified Arborist, Chairman of the Consulting Arborist Society (CAS), and an associate member of the Institute of chartered Foresters (ICF).

He has worked in the private and public sector, before setting up Arbor Cultural in 2014, to promote the value and benefits of trees.

He currently heads up the BIM4Arb group promoting Building Information Modelling (BIM) to the arboricultural industry.

He then spent five years working in new woodland creation, firstly for ADAS in the National Forest and then for 18 months with the Forestry Commission in Cobham, Kent. During this time, he began a degree in Arboriculture through Myerscough College.

This course enabled him to make the transition from forestry to arboriculture where he spent 5 years as a tree officer, firstly at St Albans and then more recently at King's Lynn and West Norfolk. He joined Connick Tree Care in May 2012, where he worked as their Principal Arboricultural Consultant.

Having worked as the principal tree consultant at Connick tree care for two years he established Arbor Cultural Ltd. In 2014, with the intent to provide professional advice in all aspects of tree consultancy, to enable clients to obtain planning permission, house purchase completion, and successfully address all tree related health and safety matters. He is passionate about trees and he is keen to promote the economic value and benefits of the urban forest.

3 Areas of Competence

- Tree hazard risk assessments for tree owners
- Decay assessment and mapping
- Mortgage and Insurance reports to assess the influence of trees on buildings
- Pre-development site surveys and arboricultural implication studies
- Tree management reports to prioritise maintenance programs
- Tree related insurance claims
- Diagnosis of tree disorders
- Arboricultural Expert Witness

4 Selected Continual Professional Development

Training	Provider	Date
Digital Integration Workshop	Landscape Institute	Jan 2020
Tree Planting conference	Palmstead Nursery	Jan 2020
Climate Change	Westminster Briefing	Dec 2019
Subsidence Report Writing	Consulting Arborist Society	Nov 2019
London Plane Conference	London Tree Officer Association	July 2019
VALID Tree Inspection Procedures	David Evans	June 2019
Expert Witness Conference	Bond Solon	Nov 2018
AA Registered consultant Workshop	Arboricultural Association	Nov 2018
iTree Seminar	Barcham Nursery	Nov 2018
Tree Safety and Beyond	MTOA & Frank Rinn	Sept 2018
Claus Mattheck Workshops	Sorbus	June 2018
Expert Witness Conference	Bond Solon	Nov 2017
Decay Workshops	MTOA & Frank Rinn	Sept 2017
Mortgage Report Writing	Lantra and CAS	June 2017
Tree Biomechanics (Germany)	Claus Mattheck, Symbiosis	May 2014
Young Tree Establishment	CAS Various	May 2014
Mortgage Report Writing	Treelife Training	April 2014
Tree Biomechanics (Germany)	Claus Mattheck	Oct 2013
Risk Assessment; D Lonsdale & J Barrel	ISA & CSA	June 2013
BS5837 Training	Tree Life Training	May 2013
Pests and Diseases Road Show	Arboricultural Association	April 2013
Subsidence; Giles Biddle Part 2	Arboricultural Association	April 2013
Arboricultural Consultancy Course	Arboricultural Association	April 2013
Subsidence; Giles Biddle Part 1	Arboricultural Association	June 2013
Tree Pruning – Ed Gilman	Barcham Nursery	June 2012
Up by Roots – James Urban	ISA	May 2012
Tree Biomechanics – Claus Mattheck	Symbiosis	May 2012
BS 5837 2012 & Tree Regs Changes	Arboricultural Association	May 2012
BS 3998 Changes to Standard	London Tree Officers Association	May 2012
Bat Course for Arboriculturalists	AA & Bat Conservation Trust	April 2012
Tree Biomechanics (Germany)	Claus Mattheck	Oct 2011
Designing with Trees	T Kirkham & P Thurman	Sept 2011
Urban Forest–Climate Change, Shade & SUDS	Peter MacDonagh	Sept 2011
Arb Consultancy Report Writing	Consulting Arb Society	July 2011
Perfect Roots & Tree Growth	Gary Watson	June 2010
Fungi Recognition and Response	Tree Life Training	May 2010
Trees and the Law - Charles Minors	Barcham Nursery	Oct 2009
CAVAT as a management tool	NATO	Sept 2009
THREATS Tree Assessment	JFL Arboriculture	Aug 2009

5. Professional Affiliations

Arboricultural Association (AA) Professional Member	since 2008
International Society of Arboriculture (ISA) Certified Arborist	since 2012
Consulting Arborists Society (CAS)	since 2014
Institute of Chartered Foresters Associate Members	since 2018
Royal Forestry Society	since 1999

Appendix II Specifications for Tree Protection Measures

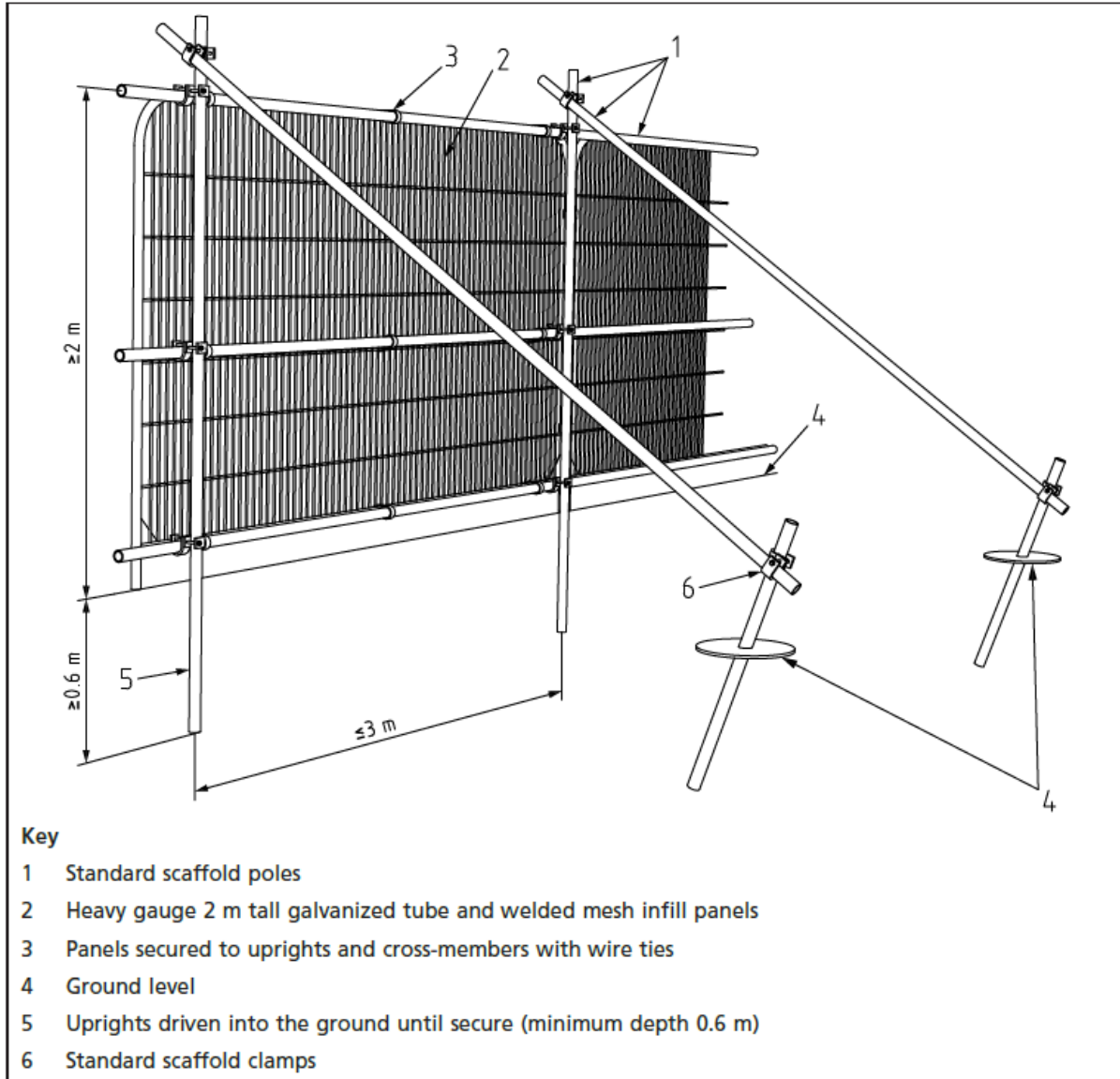


Figure 1 Default Tree Protection Fencing Design BS5837 (2012)

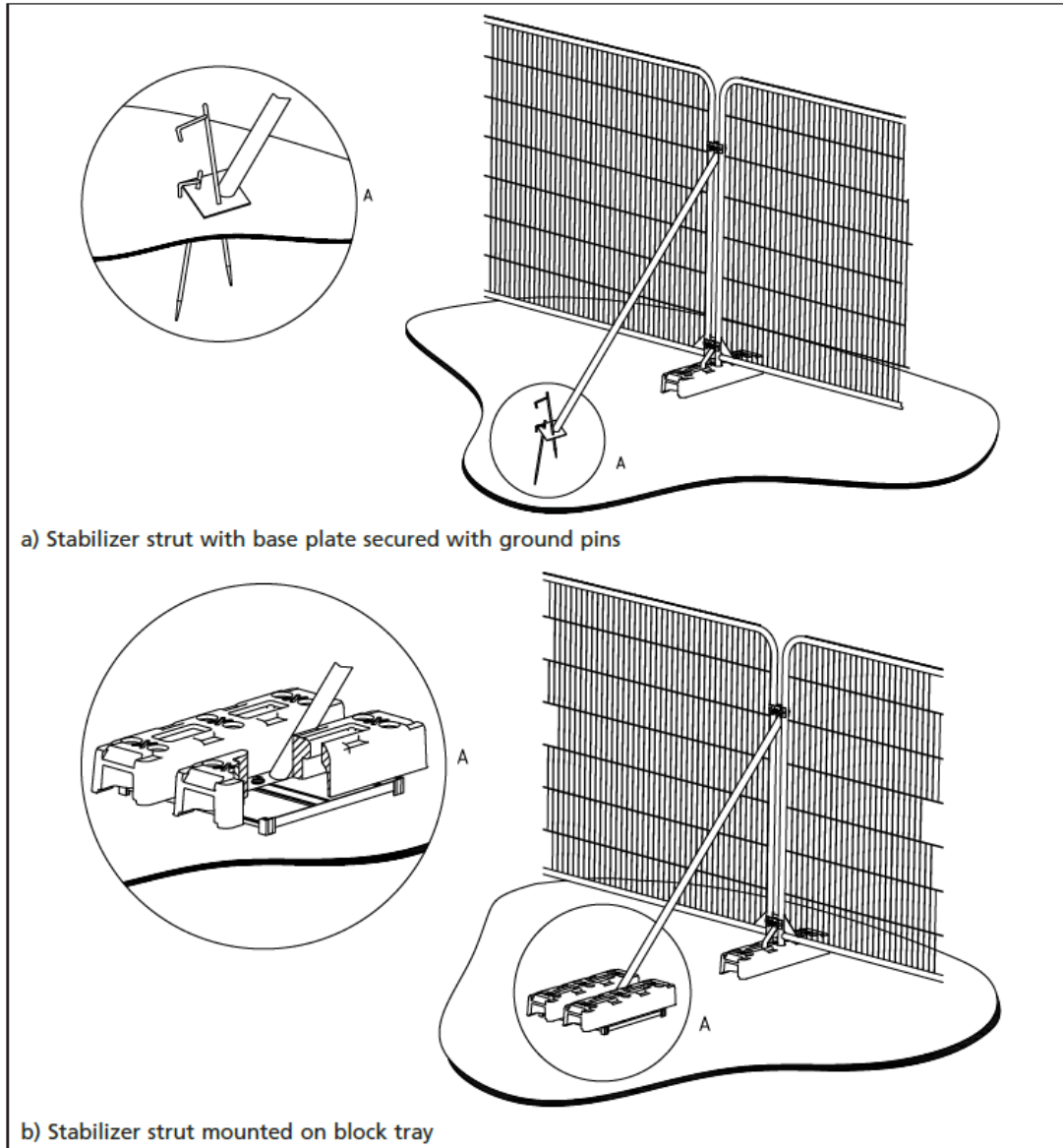


Figure 2 Tree Protection Fencing Design for Hard Surfaced Areas Only (BS5837 2012)

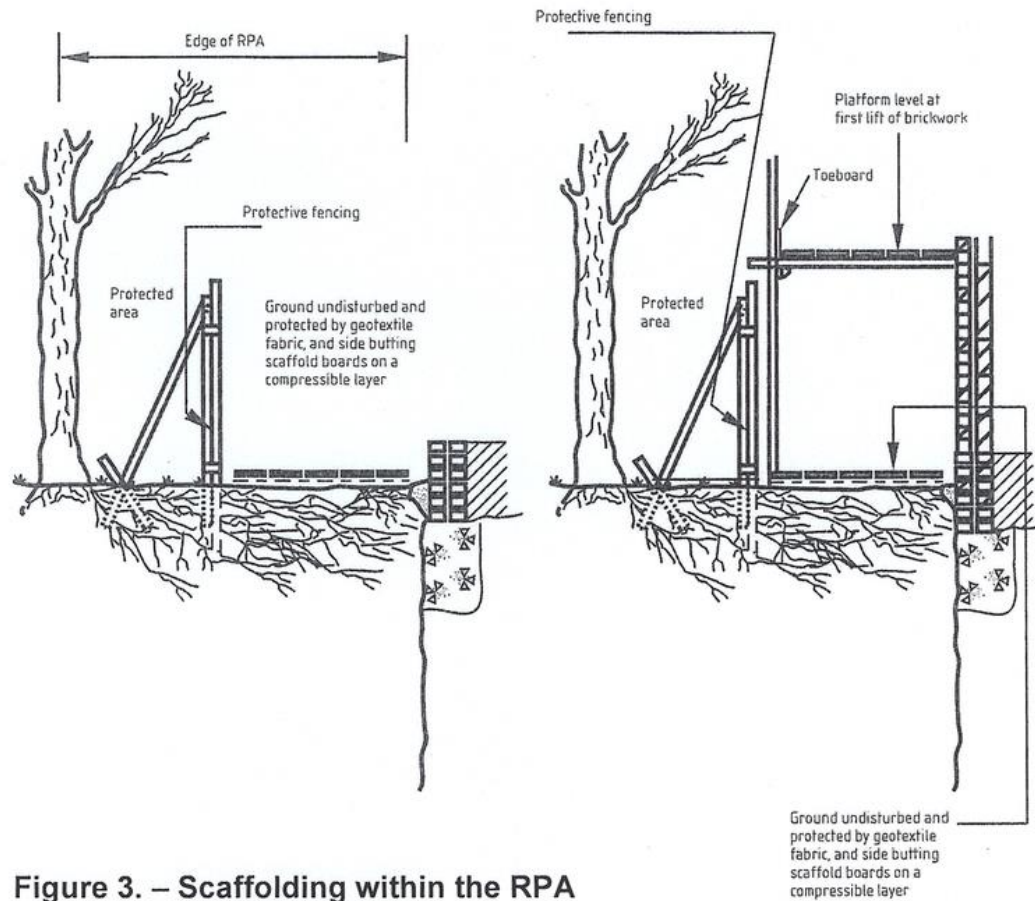


Figure 3. – Scaffolding within the RPA



CONSTRUCTION EXCLUSION ZONE - NO ACCESS

This area has been identified as a tree protection
zone, no access is to be permitted.

DO NOT ENTER WITHOUT SPECIFIC INSTRUCTION
OR SUPERVISION

Figure 4 Construction Exclusion Zone Signage

Appendix III Key to BS5837 Tree Survey Records

Tree No.

Tree numbers applied as T1 etc. to each tree are as per the Tree Survey Plan and subsequent drawings, where trees occur as a cohesive group these are suffixed with a G, they are assessed as such, with all size data being given as mean figures unless otherwise stated. Any trees on-site and off-site that are appropriate to be included but are omitted from the topographical survey supplied are included in the schedule, though their positions are shown only indicatively.

The measurement conventions are as follows.

- a) Height, crown spread, and crown clearance are recorded to the nearest half metre (crown spread is rounded up) for dimensions up to 10 m and the nearest whole metre for dimensions over 10 m.
- b) Stem diameter is recorded in millimetres, rounded to the nearest 10 mm (0.01 m).
- c) Estimated dimensions (e.g. for off-site or otherwise inaccessible trees where accurate data cannot be recovered) should be clearly identified as such (e.g. suffixed with a "#").

Height (m)

Tree height measured in metres.

Stem Diameter (mm)

Stem diameter in millimetres measured at 1.5m above ground level. Where the stem is divided below 1.5m, measurement is taken as directed by BS 5837 Annex C.

Branch Spread (m)

Radial crown spread in metres, measured for each of the four cardinal points of the compass from the centre of the trunk.

Height of Lowest Branch (m) and direction of growth

Height above ground in metres of the lowest branch and use of the 4 cardinal points of the compass

Life Stage:

Y	Young	A recently planted or establishing tree that could be transplanted without specialist equipment, i.e. up to 12-14cm stem diameter.
SM	Semi-Mature	An establishing tree which is still exhibiting apical dominance and has significant growth potential.
EM	Early Mature	A tree that has reaching its ultimate potential height and has lost its apical dominance, and whose growth rate is slowing down but will still has potential for a significant increase in stem diameter and crown spread and has a significant safe life expectancy remaining
M	Mature	A tree with limited potential for any increase in size but with reasonable safe useful life expectancy.
OM	Over Mature	A senescent or moribund specimen with a limited safe useful life expectancy.
V	Veteran	A tree of great age for species with important biological, aesthetic, conservation, or cultural value. Trees are in a state of decline due to old age.

Condition of Trees

Physiological Condition (P) An assessment of the physiological condition (i.e. health/vitality) of the tree categorised into:

- Good** A tree in a healthy condition with no significant problems
- Fair** A tree generally in good health with some problems that can be remediated
- Poor** A tree in poor health with significant problems that cannot be remediated
- Dead** A tree without enough live material to sustain life

Structural Condition (S) An assessment of the structural/safe condition of the tree categorised into:

- Good** A tree in a safe condition with no significant defects.
- Fair** A tree in a safe condition at present but with defects or with significant defects that can be remediated.
- Poor** A tree with significant defects that cannot be remediated

Notes related to both physiological and structural condition follow the categorization in order support the statement and give greater detail on the true quality and value of the tree.

Preliminary Management Recommendations

These may include further investigations for the presence or extent of decay or climbed inspections, ivy removal or pruning works when access is a non-moveable aspect etc. (NB this is not intended to be a specification for tree work and further advice maybe required prior to implementation). Trees assessed as being in apparently immediately hazardous condition will be notified to the client separately as soon as practicable.

Estimated Remaining Life Contribution

This is an estimate of the remaining life contribution in years that the tree or group of trees is expected to have based on species, condition on the site in its current context.

The following bands are used:

- <10** Tree is dead or dying and unlikely to contribute beyond 10 years
- 10+** Tree is assessed as being able to contribute to the site for 10+ years
- 20+** Tree is assessed as being able to contribute to the site for 20+ years
- 40+** Tree is assessed as being able to contribute to the site for 40+ years

Quality and Value Category Grade

U	Trees that cannot be realistically retained	Dark red
A	Those trees of HIGH value quality to retain	Light green
B	Those trees of MODERATE quality to retain	Mid blue
C	Those trees of LOW quality to retain	Grey

Deadwood Categorisation

Minor Deadwood Less than 50mm in diameter or less than 3m in length

Major Deadwood Greater than 50mm in diameter or greater than 3m in length

Appendix IV Images



Image 1 Blocked off driveway to the pub car park



Image 2 The former public house



Image 3 Rubble pile at the rear of the site with T6 and T7 growing in it



Image 4 T1-4 on the southern side of the site, all to be removed



Image 5 T5 located in the adjacent property



Image 6 Change in level along the southern boundary



Image 7 Branche son the owner's side of T1 have been previously hacked back, see stubs



Image 8 Base of T2 and T3 both poor quality plum trees

Appendix V Arboricultural Supervision Recording Template

Client:		Planning Ref:	
Local Authority:		Date:	
Site Address			
Proposal:			
Visit Checklist	Y/N		Y/N
Tree Protection Fencing in place		Tree protection as approved	
Ground Protection in place		Ground Protection as approved	
Tree or Ground protection breached		Trees damaged	
Site Agent briefed by AC			
AC briefed by Site Agent			
LPA informed			
Remedial action required			
Comments			
Recommendations			
Outcome			
1			
2			
3			
4			
5			

Appendix VI Ground Guard Specification

APPENDIX VII GROUND GUARDS

Ground-Guards Introduction

Driven by passion, consistency and excellence, we strive to provide you with the most innovative and forward-thinking ground protection solutions available today.

Our ground protection mats enable you to construct durable roadways, walkways and pad areas, with the support of our highly experienced team who can assist with bespoke designs to suit your specific requirements, step-by-step installation guidance, and an after-sales care service second-to-none.

The suitability of any trackway solution is largely governed by ground and weather conditions, which can vary dramatically from site to site and month to month, and over which we have no control.

Our clients trust us because we offer practical, step-by-step guidance, site visits (subject to location), and technical support. Our highly trained, experienced and friendly support team are ready to provide you with the expertise you need for the job on hand.

The data below highlights the typical applications for the various products in the Ground-Guards range. Please note that as a further precaution, optimum stability can be achieved by the use of a woven geotextile membrane under the mats.

Remember, cutting corners is a big risk to take. Time is money, and life is irreplaceable. If you are in any doubt whatever as to the requirements for your site, feel free to call one of our team for advice.

Product	Surface	Typically suitable for*
LiteTrack	Multiple surfaces	Pedestrians, cars, light goods vehicles
MultiTrack	Multiple surfaces	Pedestrians, cars, construction plant, heavy goods vehicles
MaxiTrack	Multiple surfaces	Pedestrians, cars, construction plant, heavy goods vehicles
BogMats	Multiple surfaces	Construction plant of all sizes, depending on thickness of mats
FastCover	Grass	Pedestrians, golf buggies
	Crushed Stone	Pedestrians, cars, light goods vehicles
	Concrete	Pedestrians, cars, construction plant, heavy goods vehicles
TrenchGuards	Pavements	Pedestrians, cars

*dependent on ground and weather conditions. If in doubt, please speak to our support team for advice.

Ground-Guards FastCover






Rapid, safe and simple pedestrian ground protection

FastCover is a 1200 x 800mm matting system available in 22mm and 43mm thicknesses. It has interlocking flanged edges, and provides clean, safe and well-protected floors in an incredibly rapid installation time.

Its unique add-on end ramp design minimises the possibility of trip hazards, making it the product of choice for any situation where safety is a high priority.

It's numerous applications include pedestrian walkways, indoor and outdoor event floors, temporary car parks, factory flooring and welfare compounds.

Not only is it a low-hazard product, but each mat has been formed from entirely recycled raw material to reduce impact on the environment.

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info@ground-guards.co.uk www.ground-guards.co.uk

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Ground-Guards
LiteTrack

Ground-Guards
LiteTrack Accessories



The light yet strong ground protection mat

LiteTrack is crafted from a specially recycled LDPE polymer, allowing it to remain flexible enough to follow the contours, yet strong enough to protect your surface.

This cost-conscious system has been created for light vehicles and pedestrian access, making it a great solution for many construction sites and events.

The 2400 x 1200 LiteTrack mats provide the perfect alternative to using plywood, without incurring the expense of a trackway system which may be over-engineered for the job.

With a full range of accessories, LiteTrack is fast becoming the system of choice for contractors, events and local authorities. It's well positioned costing makes it a super investment that will pay dividends for many years to come.



LiteTrack Accessories:

LiteTrack accessories increase efficiency and safety on site. Joiner clips lock the mats together, ground pins reduce slippage on inclines, and HandiHooks make light work of handling.

Many sites are required to segregate between roads and walkways, for protection of pedestrians. Our high-visibility post-and-chain system achieves this rapidly.

SafeStore stillages secure 30 LiteTrack mats in place when not in use. They can be stacked six high, maximising space-saving on site.

1. Double joiner clip
2. Single joiner clip
3. Low profile double joiner clip
4. Low profile single joiner clip
5. Post and chain system
6. Ground anchor pin
7. HandiHook
8. SafeStore stillage

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**Ground-Guards
MultiTrack**

**Ground-Guards
MultiTrack Accessories**



The original and best ground protection mat

MultiTrack's unique HDPE polymer offers virtual indestructibility. At 2400 x 1200mm, it weighs just 39kg making it very easy to handle.

With a great range of accessories, trackways and pad areas are rapid to lay, reducing the need for stone roadways and the expense of reinstating these areas.

The dual purpose finish provides both pedestrian and vehicular tread patterns for the price of one. MultiTrack users find huge benefit over any other system. With up to 120 tonnes UDL (uniformly distributed load), these mats remain in a league of their own.

Please note that weight loadings quoted are entirely subject to ground and weather conditions, both of which are beyond our control. Whilst it is the user's responsibility to ascertain their suitability in each instance, our friendly support team are on hand to guide you at every step of your project.



MultiTrack Accessories

MultiTrack accessories compliment the system, increasing efficiency and safety on site. Joiner clips lock the mats together, ground pins reduce slippage on inclines, and HandiHooks make light work of handling.

Many sites are required to segregate between roads and walkways, for protection of pedestrians. Our high-visibility post-and-chain system achieves this rapidly.

SafeStore stillages secure 25 MultiTrack mats in place when not in use. They can be stacked six high, maximising space-saving on site.

1. Double joiner clip
2. Single joiner clip
3. Low profile double joiner clip
4. Low profile single joiner clip
5. Post and chain system
6. Ground anchor pin
7. HandiHook
8. SafeStore stillage

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APPENDIX VII - TREE SURVEY RECORDS

Date of Survey - 16th October 2020

Ref	Species	Measurements	Spread	General Observations	Retention Category	RPA	Recommendations	Measurements2	Reinspect
T001	Sycamore (Acer pseudoplatanus)	Height (m): 6 Stem Diam (mm): 60 Spread (m): 2N, 1E, 1S, 1.5W Crown Clearance (m): 2 Lowest Branch (m): 2(N) Life Stage: Semi Mature Rem. Contrib.: 10+ Years	N:2 E:1 S:1 W:1.5	Topped at 1.5m. Very poor form.	C1	Radius: 0.7m. Area: 2 sq m.	Remove to facilitate proposed development	Physiological Cond: Good Structural Cond: Fair Bat Habitat: None	N/A
T002	Sycamore (Acer pseudoplatanus)	Height (m): 10 Stem Diam (mm): 230 Spread (m): 5N, 4E, 3S, 2W Crown Clearance (m): 2 Lowest Branch (m): 4(N) Life Stage: Semi Mature	N:5 E:4 S:3 W:2	Lean to east Crown bias to NE due to suppression.	B1	Radius: 2.8m. Area: 25 sq m.	Remove to facilitate proposed development	Physiological Cond: Good Structural Cond: Fair Bat Habitat: Low	N/A
T003	Plum (Prunus domestica)	Height (m): 8 Stem Diam (mm): 190 Spread (m): 2N, 2E, 3S, 3W Crown Clearance (m): 3 Lowest Branch (m): 1.5(W) Life Stage: Early Mature Rem. Contrib.: <10 years	N:2 E:2 S:3 W:3	Swamped with climbers Crown die back. Very poor form	C1	Radius: 2.3m. Area: 17 sq m.	Remove to facilitate proposed development	Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	N/A
T004	Plum (Prunus domestica)	Height (m): 8 Stem Diam (mm): 240 Spread (m): 4N, 4E, 0S, 2W Crown Clearance (m): 1 Lowest Branch (m): 2(NE) Life Stage: Mature Rem. Contrib.: <10 years	N:4 E:4 S:0 W:2	Lean to NE Crown dieback and deadwood. Climber in the crown	C1	Radius: 2.9m. Area: 26 sq m.	Remove to facilitate proposed development	Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	N/A

APPENDIX VII - TREE SURVEY RECORDS

Date of Survey - 16th October 2020

Ref	Species	Measurements	Spread	General Observations	Retention Category	RPA	Recommendations	Measurements2	Reinspect
T005	Sycamore (Acer pseudoplatanus)	Height (m): 10 Stem Diam (mm): 400 Spread (m): 5N, 5E, 3S, 5W Crown Clearance (m): 2 Lowest Branch (m): 2(N) Life Stage: Semi Mature Rem. Contrib.: 20+ Years	N:5 E:5 S:3 W:5	Next door At edge of retaining wall Hacked back on owners side with stubs	B1	Radius: 4.8m. Area: 72 sq m.	Cut back overhanging lower branches to ensure clear of new garages.	Physiological Cond: Good Structural Cond: Fair Bat Habitat: Low	3 Yrs.
T006	Sycamore (Acer pseudoplatanus)	Height (m): 7 4 stems, diam(mm): 100, 70, 80, 80 Spread (m): 2N, 3E, 3S, 2W Crown Clearance (m): 1 Lowest Branch (m): 1(E) Life Stage: Semi Mature Rem. Contrib.: <10 years	N:2 E:3 S:3 W:2	Self set multi stemmed trees growing on made ground.	C1	Radius: 2.0m. Area: 13 sq m.	Remove to facilitate proposed development	Physiological Cond: Good Structural Cond: Fair Bat Habitat: None	N/A
T007	Sycamore (Acer pseudoplatanus)	Height (m): 6 Stem Diam (mm): 80 Spread (m): 2N, 2E, 1S, 2W Crown Clearance (m): 1 Lowest Branch (m): 1(SE) Life Stage: Semi Mature Rem. Contrib.: <10 years	N:2 E:2 S:1 W:2	Very small depot set tree Growing on made ground	C1	Radius: 1.0m. Area: 3 sq m.	Remove to facilitate proposed development	Physiological Cond: Good Structural Cond: Good Bat Habitat: None	N/A