

261 Long Lane, Uxbridge UB10 9JR

BS5837 TREE SURVEY, ARBORICULTURAL IMPACT ASSESSMENT AND METHOD STATEMENT.

Extensions to the property

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1. Introduction

1.1 Contacts

Client- Mr Gav Sidhu

Architects- Gillett Macleod Partnership

Arboriculturalist: Elizabeth Greenwood.

Council: Hillingdon Council.

1.2 Testimonials

- 1.2.1 I am a Chartered Landscape Architect with over 30 years of experience both in Local Government and in the private sector. My practice is registered with the Landscape Institute. I am also an arboriculturalist, holding the professional diploma in arboriculture. I am a Fellow of the Arboricultural Association.

1.3 Instruction

- 1.3.1 I have been appointed by Mr Gav Sidhu to assess the arboricultural implications on the proposed extension and refurbishment of this dwelling

1.4 Scope

- 1.4.1 This report is carried out in accordance with BS5837. This document states the following with regard to scope:

'This British Standard gives recommendations and guidance on the relationship between trees and design, demolition and construction processes.

It sets out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and structures.

The standard is applicable whether or not planning permission is required.' (The British Standards Institution, 2012)

- 1.4.2 This report is intended to be a working document to be used by the contractor and local authority to ensure the retention of the trees and provide a means of construction for the implementation of the proposed development with minimal disturbance to trees and notable vegetation.
- 1.4.3. The survey is to take the form of a visual assessment of trees recording their measurement, describing their age, amenity, condition and recommending work. Trees have been plotted on plan and full details of survey work are included in the appendices.
- 1.4.4. Limitations of this tree survey would include the lack of visibility of every tree owing to dense undergrowth and the presence of climbing plants such as ivy. There may be restrictions to the access within the site or from neighbouring land, and, in the case of trees growing on the boundary of the site only one side of the tree may be visible.
- 1.4.5. In the case of building within the vicinity of mature trees the owners must be made aware of their responsibility to maintain these trees in a safe condition. Their insurers should be made aware of the implications of the presence of these trees.

- 1.4.6. The report provides some background information on geology and soils; however, it is not within the remit of this commission to give technical details of the foundations or structural design of the building which would comply with the requirements of building control.

1.5 Background

- 1.5.1. This detached property is set along the western side of Long Lane, and is set back from this busy road, with a drive, parking area and four mature trees within the front garden.
- 1.5.2. A site layout has been provided by the Gillett Macleod Partnership showing the position of the trees within the garden. Ordnance Survey data shows the ground levels in the region of 38 metres above sea level. There are no water features or indication of impeded drainage within this garden.
- 1.5.3. The front garden is partly surfaced with tarmac with a strip of soft landscape on the eastern side with four large mature trees, one of which is a veteran oak tree close to the road. The rear garden is mainly laid to grass, with hedging and shrubs along the southern boundary. The shed marked on the plan on the southern side of the property has recently been removed.
- 1.5.4. The trees are currently protected by a Hillingdon Tree Preservation Order, Number 60, title 261-269 Long Lane Hillingdon dating from 6 April 1970. Of the 12 trees listed only four remain within the front garden which are part of this fifty-year-old Tree Preservation Order (See Appendix A). These are listed as:
- T34 Oak *Quercus robur*
 - T35, Sycamore *Acer pseudoplatanus*- Not present
 - T36 Oak *Quercus robur*- present and surveyed as T1
 - T37 Larch *Larix europaea*- not present
 - T38 Corsican pine *Pinus nigra* – Not present
 - T39 Lawsons cypress *Chamaecyparis lawsonia*- not present
 - T40 Oak *Quercus robur* - present and surveyed as T2
 - T41 Lawsons cypress *Chamaecyparis lawsonia* – Not present
 - T42 Holly *Ilex aquifolium* – Not present
 - T43 Oak *Quercus robur* - present and surveyed as T3
 - T44 Scots pine *Pinus sylvestris*- present and surveyed as T4
- 1.5.5 An application for tree works must be submitted and consent received from the local planning authority prior to any tree work being carried out
- 1.5.6 Geological Description:
Bedrock Geology: London Clay Formation - Clay, silt and sand. Superficial Deposits have not been recorded.
- 1.5.7 Soil
- o **Soilscape 9:**
Lime-rich loamy and clayey soils with impeded drainage
 - o **Texture:** Loamy and clayey
 - o **Drainage:** Impeded drainage
 - o **Fertility:** Moderate
 - o **Habitats:** Seasonally wet pastures and woodlands

- o **Landcover:** Grassland and arable some woodland
- o **Carbon:** Low
- o **Drains to:** Stream network
- o **Water protection:** Main risks are associated with overland flow from compacted or poached fields. Organic slurry, dirty water, fertiliser, pathogens and fine sediment can all move in suspension or solution with overland flow or drain water

1.6 Documentation

1.6.1. The following documents were provided by Gillet Macleod partnership before the commencement of this report:

- 21/3445/1 Location Plan
- 21/3445/2 Site layout plan
- 21/3445/2 Proposed site layout plan
- 21/3445/4 Existing floor plans
- 21/3445/5 Existing elevations
- 21/3445/6 Proposed floor plan
- 21/3445/7 Proposed elevations

1.6.2. Plans showing the details as outlined in this method statement are included in the appendices to this report (Appendices H, I and J)

1.7 Survey

- The site was visited on 2/11/2021.
- Clear skies, sunny 11 degree and light air
- With good visibility
- Photographs were taken of the trees, which are included in Appendix A.
- The camera used to take these photographs was a Lumix digital camera with Leica zoom lens

2. Tree Survey Criteria

2.1 Outline

2.1.1. Photographs of many of the trees and full details of this tree survey are included on tree survey sheets. (Appendices B and C) The information recorded complies with BS5837:2012, and is outlined as follows: -

- The species (English names), size and position of the trees within the site.
- The majority of large shrubs or trees with stem diameter of less than 150 mm have not been surveyed. According to the British Standard Recommendations. These trees can be transplanted or replaced.
- The dimensions of the trees are the height, and the girth measured at 1.5 metre above ground level. The spread is measured at the four points of the compass, and this is represented on plan. The lowest branch on the trunk is measured from ground level and the crown height is measured from the lowest point of the foliage.

- The maturity is recorded, and details of this classification are included on the tree survey sheets. (e.g. Y = young, SM = semi-mature, EM = early mature, M = mature, OM = over-mature);
 - A description of the trees' condition includes any visual defects at the time of the survey. As this survey is conducted from ground level not all defects may be visible, and pathogens may not be apparent because of the season of inspection.
 - General recommendations for each tree are outlined, which may need to be reviewed once development proposals are finalized.
 - Estimated remaining contribution in years in view of the existing site conditions is classified as (less than 10 years; 10 to 20 years, 20 to 40 years or more than 40 years).
- 2.1.2. Tree survey information has been added to the site layout plan and details have been amended for the purpose of this report. Appendix [H].
- 2.1.3. It is important to note that the survey and evaluation of trees is only relevant to site conditions at the time of survey. If there is any change in the site conditions, and especially within the root protection area the trees, the site may need to be re-surveyed, and the potential longevity of the trees re-evaluated. In the event of adverse weather conditions, the survey should be repeated or rescheduled.
- 2.1.4. Regardless of the development proposals there should be regular inspection and monitoring of trees at a frequency dependent on their condition and age. **This tree survey is only valid for a 3-year period from the date of the survey.**

2.2 Guidance

- 2.2.1. British Standard 5837:2012: 'Trees In relation to design, demolition and construction – Recommendations'.

2.2.2 Categories:

The aim of the guidelines is to provide an assessment of the amenity values of the trees. The recommendations provide four categories in which trees should be placed for assessment purposes. These assessment categories are reproduced in Appendix C, Table 1, "Cascade Chart for Tree Quality Assessment", and simplified as:

- A. Trees of high quality with an estimated remaining life expectancy of at least 40 years
- B. Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
- C. Trees of low quality, with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter of below 150 mm
- U. Trees which have limited prognosis. Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

These categories are subdivided into three sub-groups:

- 1. Trees of arboricultural value, good examples of their species or unusual specimens.
- 2. Mainly trees of landscape value, trees which are primarily of visual amenity.
- 3. Trees with mainly conservational value, for example veteran trees.

2.2.3. Root Protection Areas:

The British Standard Recommendations 5837:2012 provide a formula for calculating the Root Protection Area (RPA) required to be protected for existing trees that area to be retained.

- For single stem trees, the RPA (see 3.7) should be calculated as an area equivalent to a circle with a radius 12 times the stem diameter. For trees with more than one stem, one of the two calculation methods below should be used. In all cases, the stem diameter(s) should be measured in accordance with Annex C, and the RPA should be determined from Annex D. The calculated RPA for each tree should be capped to 707 square metres.
- For trees with two to five stems, the combined stem diameter should be calculated as follows:

$$\sqrt{(stem\ diameter\ 1)^2 + (stem\ diameter\ 2)^2 + \dots (stem\ diameter\ 5)^2}$$

- For trees with more than five stems (not illustrated in Annex C), the combined stem diameter should be calculated as follows: $\sqrt{(mean\ stem\ diameter)^2 \times number\ of\ stems}$

Root protection areas are indicated as a radius on plan. In the event of root restrictions from, for example, deep foundations or a retaining wall, topography, drainage, soil type, soil structure, or soil disturbance the approximate area is represented by a polygon, as dictated by this British Standard.

2.2.4. Protective Fencing and Root Protection:

Within development sites the British Standard recommends that trees are fenced off to ensure the root protection area is not damaged by construction works. In compliance with the British Standards, protective fencing should be erected at the edge of the root protection area. If access is required within this area, then the ground should be protected. Construction techniques using geo-web and geo-textile, in accordance with BS recommendations might be used to minimize damage to trees and enable working space for demolition or construction within the root protection area of trees.

Drainage and service runs need to be identified at this stage to ensure that if new service runs are to be excavated, they should be located outside the root protection zone of existing trees.

Building foundations can be specifically designed to reduce the impact of a building if there is a minor incursion into the root protection area of a tree.

2.2.5. Other Considerations:

In addition, the British Standard takes into account future growth of the crown of the tree, the spatial implications and its effects on light.

Existing levels within the root protection areas of trees should be retained.

Some tree work might be required to ensure that the crowns of trees are cut back from working space and to provide access for construction vehicles.

There are adequate areas within the site to ensure that handling and storage of materials can be accommodated well outside the root protection areas.

3. Tree Survey

3.1 Summary

- 3.1.1 Five trees and one group of trees have been surveyed as part of this submission, four of which are protected by Tree Preservation Order. Of these two of the oaks are of high 'A' category. The first, an oak (T1) on the northern side of the front drive, is a well-formed

mature tree with a limited rooting area owing to the hard surfacing both within this and the adjacent property's drive. It has a stem girth of 430 mm with an 84 square metre root protection area.

- 3.1.2. Of a similar age, the oak(T2) on the southern side of the drive, has incurred major damage to its buttress with over one third of the bark removed and an area of necrotic tissue extending into the centre of the trunk. As a potentially unstable tree, it is classified as 'U' quality and it should be removed.
- 3.1.3 The third tree is a veteran oak (T3), of pollard origin with a 2,600 mm stem girth, which would make the tree in excess of 500 years old. The tree has a divided trunk at 2 metres with six pollard trunks emerging from this point. There are numerous cavities and pruning wounds throughout the trunk and crown, with a fallen fungal bracket (Probably *Fistulina hepatica*) on the ground below the southern lateral branches. Owing to its age and proximity to Long Lane further investigations (Picus tomography) are advised to ensure the tree remains in a safe and stable condition. The 15-metre radius root protection area extends to within the footprint of the existing house and the proposed extensions
- 3.1.4 Within 5 metres of the property there is a mature Scots pine (T4), a good quality tree, probably of late Victorian or Edwardian origin. At 18.5 metres in height, much of its 180 square metre root protection area underlies the drive and building footprint.
- 3.1.5 The last tree surveyed is a mature oak tree lying outside the garden boundaries and not included in the tree preservation order, although with pruning wounds it is a 'B' quality tree with a root protection area underlying the northeast corner of the site. The row of Leyland cypresses (G1) have a limited 3 metre root protection area.
- 3.1.6 Hedging along part of the southern boundary is marked as H1. This is a privet hedge clipped to 1.5 metre which also include some cypress along the western section. There are sections of die back of the privet.

3.2 Categories

Trees:

Category	No	Tag Number	Species
A	3	T1, T3, T4	Oak and Scots pine
B	1	T5	ash
C	1 group	1 group	Leyland cypress
U	1		Oak
Total	5 and 1 group		

4. Arboricultural Impact Assessment

4.1 Assessment

- 4.1.1 The proposals are for extensions to the property footprint including an extension on the southern side occupying a space of the former shed. The root protection area of the veteran oak (T3) underlies the whole of the front of the site and much of the building footprint. The Scots pine will also be affected by the extension.
- 4.1.2. The British Standard includes this clause regarding veteran trees

4.5.11 *The tree survey might identify the presence of veteran trees on the site.*

The implications of their presence on the use of the surrounding land should be assessed at the earliest possible stage of the design process. Where such trees are to be retained, particular care should be taken in the design to accommodate them in a setting that aids their long-term retention.

NOTE Whilst veteran trees typically provide a range of niche habitats, they are especially valuable if ancient, due to their scarcity and high habitat values for associated species of fungi, lichens and saproxylic invertebrates, including some which are rare or endangered and occur only where such trees have been continuously present for centuries. These trees will therefore almost always be included in the A3 category.

4.1.3. The standard also states that new additional hard standing should not be proposed within its extensive 706 square metre root protection area

4.1.4 Unfortunately one of the oaks (T2) needs to be removed. All three of the remaining protected trees will be adversely impacted by building works.

4.2 Mitigation

4.2.1. A means of mitigation is outlined to improve these soil conditions of these remaining three trees, in particular the veteran oak tree. The plans show hard standing round the base of the pine and close to the veteran oak.

4.2.3. To ensure retention of these two trees it is recommended to improve the soil conditions, reduce the hard standing, to extend the soft landscape area and relay it on a more hospitable type of permeable construction.

- Remove and relay the hard surfacing with a permeable type of geo=web construction
- Reduce the hard surface area
- Increase the soft landscape areas to improve soil conditions for these trees
- Remedial soil improvements within the soft landscape areas.
- Foundation design to reduce the impact of the extension within the root protection area of the veteran oak and the Scots pine.

5. Arboricultural Method Statement

5.1 General

5.1.1 Issues Considered

Pre-construction works and site clearance:

- Tree protection
- Tree surgery
- Protective fencing
- Methods of ground protection construction during works
- Demolition

Construction works:

- Hand dig
- Foundation design
- Hard surfacing within the root protection area
- Location of underground services
- Contingency plans
- Site supervision

Post- Construction works:

- Removal of protective barrier etc...
- Remedial works
- Landscape works

5.2 Tree Works

5.2.1. As part of the application for planning permission the following tree surgery is outlined. All works will be carried out by a fully insured and competent tree surgeon in accordance with BS3889:2010 "Tree Work". The timing of tree surgery should also be carried out in accordance with the Wildlife and Countryside Act and in view of the nesting season of birds within the sites.

5.2.2 Management:

No	Species	Category	Recommendation
T1	Quercus robur (Common Oak)	A1	Remove deadwood and crown lift to 5 metres to faciality construction access
T2	Quercus robur (Common Oak)	U	REMOVE
T3	Quercus robur (Common Oak)	A1	Further investigation into presence of fungal pathogens, removal of dead wood, increase soft landscape around base.
T4	Pinus sylvestris (Scots Pine)	A1	Improve rooting area and allow for
T5	Fraxinus excelsior (Ash)	B2	Not under client's ownership
G1	X Cupressocyparis leylandii (Leyland Cypress)	C1	Reduce the height of the hedge to a common height (e.g., 5 metre)
H1	X Cupressocyparis leylandii (Leyland Cypress), privet		Replace hedging with better quality species

5.2.3. Only the oak (T2) which is potentially unsound is scheduled for removal

5.3 Tree Protection

5.3.1. Protective Fencing/Protective Barrier

Details of the fencing are shown in the appendices to this report and comply with British Standard recommendations. (see appendix E). All weather notices are to be affixed to this fencing with signage "CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

5.3.2. Ground Protection

In the vicinity of the temporary unit working space will mainly be confined to existing hard surfacing. Where additional working space is required for construction within the root protection areas of retained trees, the British Standard specifies the following type of ground protection.

- a) For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g., 100 mm depth of woodchip), laid onto a geo-textile membrane;
- b) For pedestrian-operated plant up to a gross weight of 2t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geo-textile membrane;
- c) For wheeled or tracked construction traffic exceeding 2t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

5.3.3. Specific details for ground protection within the front drive

The following specification is to be carried out prior to any site work and form a basis for ground protection during site works and form the foundation for the final permeable surface. (See Appendix XX)

- a) Remove the existing hard surface by hand
- b) Remove the hard surface foundation
- c) Infill irregularities with compacted sand-
- d) No root over 25 mm to be severed
- e) Lay geotextile separation membrane
- f) Lay geo web/ or cell web type material to a depth a specified by the supplier to support the weight of construction vehicles
- g) Infill with no fines stone e.g., 20-40 mm diameter
- h) Lay geotextile separation membrane
- i) During construction overlay a with compacted wearing course
- j) On completion remove wearing course and lay permeable material

5.3.3. Demolition

- a) Prior to demolition the trees and hedges to be retained should be fenced off and ground protection installed within their root protection area.
- b) For the trees along the drive the crown should be faced back to ensure there is clearance under the canopy to remove building materials
- c) All heavy machinery and demolition vehicles should be positioned within the footprint of the building.
- d) No material should be stored under the tree canopies
- e) All hard surfacing to be removed by hand with care so as not to damage tree roots, and stored outside the tree root protection areas.
- f) If temporary surfacing is required, this should be in accordance with ground protection outlined above.

5.4 Methods of Construction for Development

5.4.1. Hand dig

Hand digging will also be required for all works within root protection areas of trees, including removal of surfacing, trenches, excavation for fence post and for cultivation for soft landscape areas. All hand digging within the root protection areas of trees should be supervised by a competent arboriculturalist.

Within root protection areas all excavation should be hand dug. A trench should be hand dug near the trees to ascertain whether roots are present. If roots over 25 mm are found these should, where possible, be bridged, and surrounded by sand- roots under this dimension should be cut to a clean cut and surrounded by sand. No roots are to be left exposed but covered with damp sand or hessian. The surface level of the path may need to be adjusted to retain these roots.

If on investigation of the hand dug trench there are no roots present mechanical excavation may be possible if a banksman is supervising the excavation to ensure that if roots are unearthed, they can be protected and clean cut and surrounded by sand. Hand digging may need to be resumed to complete the excavation.

This would include exploratory excavation by hand for the foundations of the paths and new hard surfacing within the root protection area of the trees.

5.4.2. Foundation design

Methods to mitigate foundations can be designed with virtually non-invasive techniques using a mini pile and above ground beam and raft construction; specialist companies can construct these foundations and are experienced at ensuring tree protection techniques are deployed. By inserting gravel filter medium above ground and below the raft foundation some surface water ground filtration can provide moisture to the underlying tree roots.

Hand dig in area where indicated close to trees to minimize damage to tree roots. This is to ensure that large diameter structural roots are not damaged.

All pile rigs in vicinity of trees are to be positioned within the footprint of the building thus avoiding any damage to nearby trees

5.4.3. Surfacing within the Root Protection Area

Using the foundation for ground protection outlined in section 5.3.3

- a) Remove the construction wearing course.
- b) Lay final wearing surface on top of this base- for example permeable paving or porous tarmac.
- c) Use timber edging secured with timber pegs to avoid excessive excavation to facilitate haunching of edging.

5.4.4. Location of Underground Services

All drainage and below ground services will be designed to avoid tree protection zones. If there is no alternative but to site these within the root protection area of trees, then trenches excavation should be hand dug and comply with 'Hand dug ' as outlined in section 5.1 or the NJUG regulations.

5.4.5. Contingency Plans

If vehicular access is necessary within the root protection zone of any of the trees, in response to chemical spillage, collision or emergency access, the ground will be protected by geo-textile or boarding as outlined in the British Standard. Spillage and ground contamination will be prevented, and preparation of material carried out outside the root protection areas of tree.

5.4.6. Storage of contaminants and mixing of concrete

This must be carried out outside the root protection areas of all trees. The ground should be protected with heavy duty plastic sheeting, e.g. 1200 gauge DPM , with edges secured and raised to prevent spillage and with a raised lip along the access point. On the tree protection plan this is indicated to be positioned within the rear garden

5.4.7 Site Supervision

There will be full supervision on site from the site foreman and tree protection methods will be strictly adhered to. An arboricultural supervision schedule, if required by the local authority, is included in the appendices to this report.

5.5 Post Construction and Landscaping near Trees.

5.5.1. Removal of fencing and ground protection

On completion of works, protective fencing and the ground protection for temporary working space will be removed.

5.5.2. Remedial works and soil improvement

Exposed soils are easily compacted resulting in loss of water and gaseous exchange and leading to root deaths. To relieve ground compaction, which may have resulted from the overrun of vehicles or by storage of materials, the clay soils should be broken up to allow air to penetrate and for the soil structure to be restored.

Within the tree root protection area improve the soil structure by incorporating a compost or mulch within the topsoil, of 75-100 mm in depth. This can be spread over the surface and gently forked into the soil. If bark chip is used as a mulch NPK fertilizer should be added to counteract the nitrogen depletion of the soil. There are options for additives of mycorrhizal fungal which may also improve root function. Ground compaction will be addressed by either lightly forking over the area or by other techniques; for example, use of tree spade soil aeration.

5.5.4. New planting and soft landscape

New planting within the root protection areas of trees should be carried out to avoid mechanical cultivation and for plants to be notch planted. Shrub beds are to be mulched, which, in addition to reducing weed growth, will enhance soil conditions round trees. Within grass areas, the height of mower blades are to be set above the level of surface tree roots to avoid damage and soil level raised above surface roots with a sandy composition of topsoil

Elizabeth Greenwood C.M.L.I., F.Arbor.A
November 2021

Appendix A: Extracts of Tree Preservation Order, no 6.

TOWN AND COUNTRY PLANNING ACTS 1962 AND 1968

CIVIC AMENITIES ACT 1967

LONDON BOROUGH OF HILLINGDON TREE PRESERVATION ORDER NO. 60/1969

In respect of

Forty-four individual and two groups of trees on land at
numbers 261-269 Long Lane, Hillingdon, Middlesex

THE MAYOR, ALDERMEN AND BURGESSES of the LONDON BOROUGH OF HILLINGDON acting by the Council, in this order called "the authority", in pursuance of the powers conferred in that behalf by section 29 of the Town and Country Planning Act 1962, and section 16 of the Civic Amenities Act, 1967, and subject to the provisions of the Forestry Act, 1967 hereby makes the following Order:-

1. In this Order -

"the Act" means the Town and Country Planning Act 1962; "owner" means the owner in fee simple, either in possession or who has granted a lease or tenancy of which the unexpired portion is less than three years; lessee (including a sub-lessee) or tenant in possession, the unexpired portion of whose lease or tenancy is three years or more; and a mortgagee in possession; and "the Minister" means the Minister of Housing and Local Government.

2. Subject to the provisions of this Order and to the exemptions specified in the Second Schedule hereto, no person shall, except with the consent of the authority and in accordance with the conditions, if any, imposed on such consent, cut down, top, lop or wilfully destroy or cause or permit the cutting down, topping, lopping or wilful destruction of any tree specified in the First Schedule hereto or comprised in a group of trees or in a woodland therein specified, the position of which trees, groups of trees and woodlands is defined in the manner indicated in the said First Schedule on the map annexed hereto which map shall, for the purpose of such definition as aforesaid, prevail where any ambiguity arises between it and the specification in the said First Schedule.

3. An application for consent made to the authority under Article 2 of this Order shall be in writing stating the reasons for making the application, and shall by reference if necessary to a plan specify the trees to which the application relates, and the operations for the carrying out of which consent is required.

4.- (1) Where an application for consent is made to the authority under this Order, the authority may grant such consent either unconditionally, or subject to such conditions (including conditions requiring the replacement of any tree by one or more trees on the site or in the immediate vicinity thereof), as the authority may think fit, or may refuse consent:

Provided that where the application relates to any woodland specified in the First Schedule to this Order the authority shall grant consent so far as accords with the principles of good forestry, except where, in the opinion of the authority, it is necessary in the interests of amenity to maintain the special character of the woodland or the woodland character of the area, and shall not impose conditions on such consent requiring replacement or replanting.

Note: If it is desired to fell any of the trees included in this Order, whether included as trees, groups of trees or woodlands, and the trees are trees for the felling of which a licence is required under the Forestry Act 1967, application should be made not to the authority for consent under this Order but to the Conservator of Forests for a licence under that Act (section 15(5)).

FIRST SCHEDULE

TREES SPECIFIED INDIVIDUALLY
(encircled in black on the map)

<u>Tree No.</u>	<u>English Name</u>	<u>Botanical Name</u>	<u>Location</u>
1	Oak	Quercus Robur	269 Long Lane
2	Lawson's Cypress	Chamaecyparis Lawsoniana	" " "
3	Oak	Quercus Robur	" " "
4	Ash	Fraxinus Excelsior	" " "
5	"	" "	" " "
6	Oak <i>denticatus 1947</i>	Quercus Robur	" " "
7	Ash <i>replaced by 2 with a 5</i>	Fraxinus Excelsior	" " "
8	"	" "	" " "
9	Lawson's Cypress	Chamaecyparis Lawsoniana	" " "
10	" "	" "	" " "
11	Hawthorn	Crataegus spp	" " "
12	Cypress	Chamaecyparis spp	" " "
13	Hawthorn	Crataegus spp	" " "
14	Corsican Pine	Pinus Nigra	" " "
15	" "	" "	" " "
16	Flowering Cherry	Prunus spp	267 Long Lane
17	" "	" "	" " "
18	Corsican Pine	Pinus Nigra <i>Blown down</i>	" " "
19	" "	" "	" " "
20	Larch	Larix Europaea	" " "
21	Spruce	Picea spp	" " "
22	Corsican Pine	Pinus Nigra	265 Long Lane
23	" "	" "	" " "
24	Oak	Quercus Robur	" " "
25	Weeping Crab	Malus spp	" " "
26	Larch	Larix Europaea	" " "
27	Oak	Quercus Robur	" " "
28	Ash	Fraxinus Excelsior	263 Long Lane
29	"	" "	" " "
30	Spruce X	Picea spp	" " "
31	Weeping Willow	Salix Babylonica	" " "
32	Ash	Fraxinus Excelsior	" " "
33	Hawthorn X	Crataegus spp	" " "
34	Oak	Quercus Robur	261 Long Lane
35	Sycamore	Acer Pseudoplatanus	" " "
36	Oak	Quercus Robur	" " "
37	Larch	Larix Europaea	" " "
38	Corsican Pine	Pinus Nigra	" " "
39	Lawson's Cypress	Chamaecyparis Lawsoniana	" " "
40	Oak	Quercus Robur	" " "
41	Lawson's Cypress	Chamaecyparis Lawsoniana	" " "
42	Holly	Ilex Aquifolium	" " "
43	Oak	Quercus Robur	" " "
44	Scots Pine	Pinus Sylvestris	" " "

TREES SPECIFIED BY REFERENCE TO AN AREA

NONE

GROUPS OF TREES
(within a broken black line on the map)

<u>Group No.</u>	<u>English Name</u>	<u>Botanical Name</u>	<u>Location</u>
1	13 Oak	Quercus Robur	269 Long Lane
	8 Ash	Fraxinus Excelsior	
	6 Scots Pine	Pinus Sylvestris	
2	9 Oak	Quercus Robur	" " "
	34 Ash	Fraxinus Excelsior	
	3 Hawthorn	Crataegus spp	
	1 Scots Pine	Pinus Sylvestris	

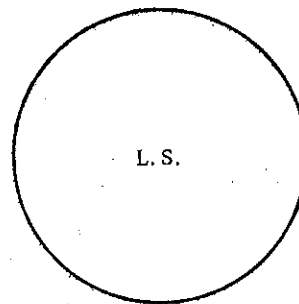
WOODLANDS

NONE

Order be submitted to him for confirmation, such Order shall at the expiration of the period referred to in subsection (2)(b) of this section take effect by virtue of this section and without being confirmed by the Minister as required by section 27(2) of the Town and Country Planning Act 1962.

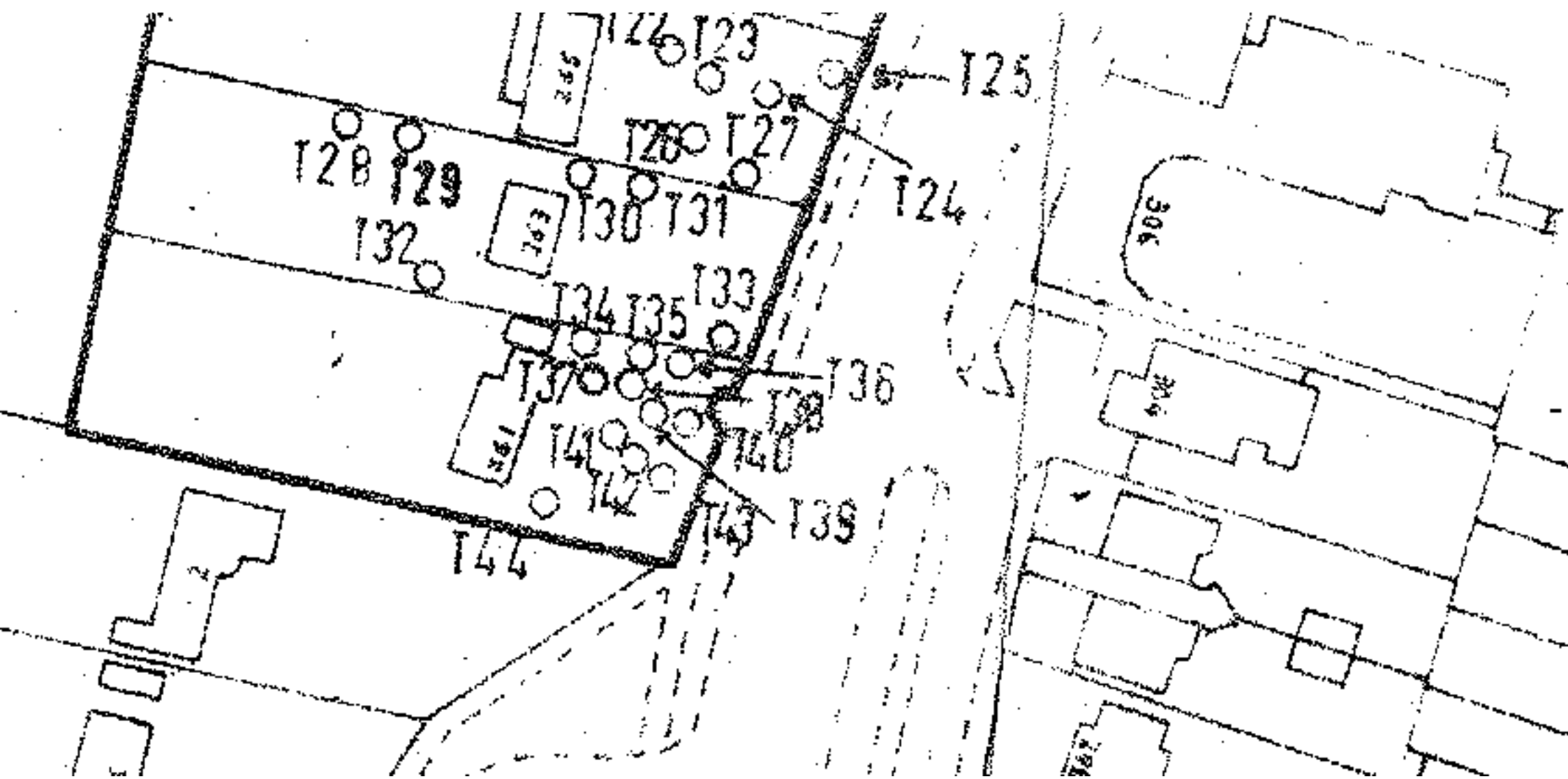
80. - (6) This section does not apply to such Order revoking or modifying a consent granted or deemed to have been granted by the Minister under Part III or Part IV of the Town and Country Planning Act 1962 or under Part II or Part V of the Town and Country Planning Act 1968.

THE COMMON SEAL of the MAYOR,
ALDERMEN AND BURGESSES of the
LONDON BOROUGH OF HILLINGDON
was hereunto affixed on the 14th
day of January 1970
in the presence of:-



(Signed) B J Brown
MAYOR

(Signed) George Hooper
TOWN CLERK



Dated the 14th day of January 1970

TREE PRESERVATION ORDER

made by the

MAYOR ALDERMEN AND BURGESSES OF THE
LONDON BOROUGH OF HILLINGDON

in respect of forty-four
individual trees and two
groups of trees on land at
261-269 Long Lane, Hillingdon,
Middlesex, under Section 29
of the Town and Country
Planning Act, 1962, and
Section 16 of the Civic
Amenities Act, 1967.

Appendix B: Photographs



Above left- the oak (T1) as viewed from 263 Long Lane. **Above centre-** the group of three oak trees (T1, T2 and T3). **Above right and below left-** the veteran oak (T3) a former pollard with extensive cavities through the crown. **Bottom left-** the fungal bracket lying on the ground below the southern lateral branches. **Below centre –** the Scots pine (T4). **Below right-** the ash (T5) and row of leyland cypresses (G1). **Bottom right-** the buttress of the oak (T2) with bark removed and a cavity extending into the centre of the trunk- This tree is potentially unstable





Above left- the rear of the property with trees visible over the roof. **Above right-** the privet and conifer hedge (H1) along the southern boundary - recommend replacement (for example a hornbeam hedge)

Appendix C: Tree Survey Sheets

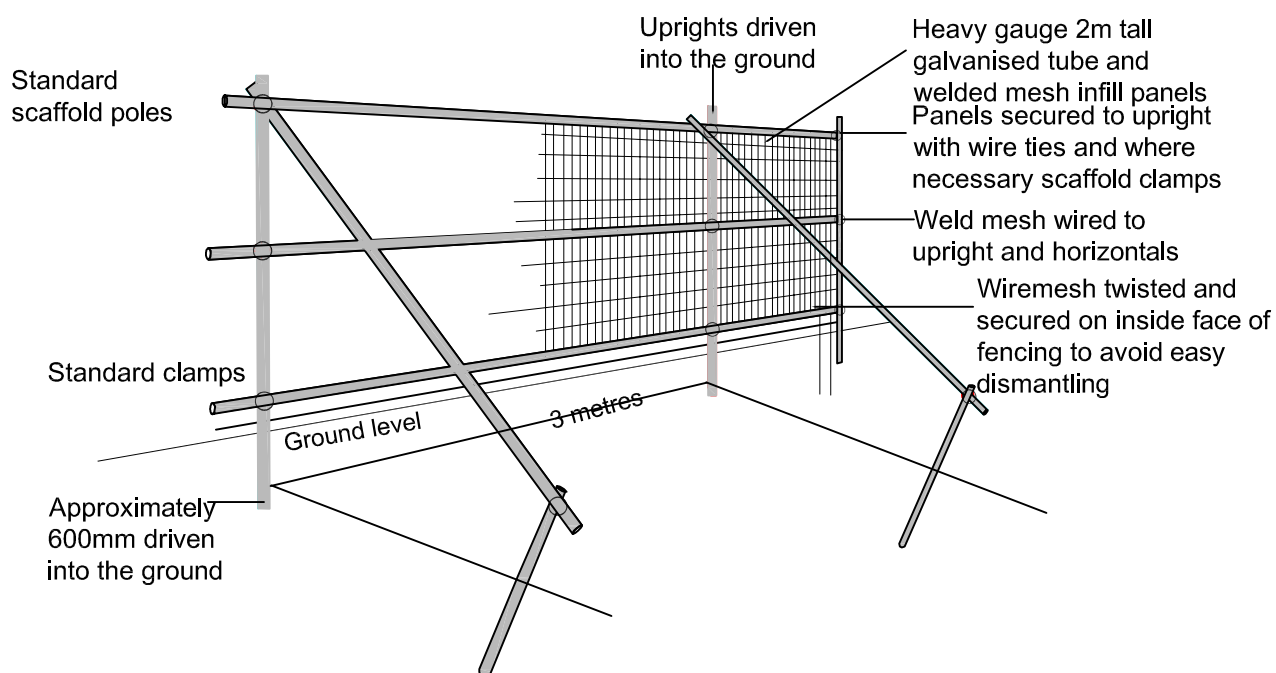
No	Species	Age	Stem girth mm	Height	Lowest branch	Category	North	East	South	West	Condition	Life span	Remarks	Recommendation	RPA radius	RPA Sqm
T1	Quercus robur (Common Oak)	M	430	13.5	4.2	A1	7	6.3	4.7	6	Good	40+	Confined planting area, dead wood, discolouration on north side,	Remove deadwood and crown lift to 5 metres to facility construction access	5.16	83.66
T2	Quercus robur (Common Oak)	M	480	17	4.3	U	3.4	4.6	5.5	3.5	Fair	<10	Damage to buttress on SW, 50 cm circumference up to 200 mm on base, cavities extending into base, loose bark extends to North, potentially unsound, damage appears too extensive to retain	REMOVE	5.76	104.2
T3	Quercus robur (Common Oak)	V	2600	17.5	3.5	A1	5.5	7.5	7	5	Good	40+	Old pollard at 2 m, 6 stems in 2 parts, trunk leans east, major branch removal, cavities, pruning wounds throughout crown, masonry around base, some discoloration, fallen beefsteak fungus under canopy originated on western side, major dead wood,	Further investigation into presence of fungal pathogens, removal of dead wood, increase soft landscape around base.	15	707

No	Species	Age	Stem girth mm	Height	Lowest branch	Category	North	East	South	West	Condition	Life span	Remarks	Recommendation	RPA radius	RPA Sqm
T4	Pinus sylvestris (Scots Pine)	M	630	18.5	8	A1	3.4	4.8	5	4	Good	40+	Major dead wood, close to house, drive within root protection, improve rooting area,	Improve rooting area and allow for	7.56	179.6
T5	Fraxinus excelsior (Ash)	M	650	20	6	B2	6.5	7.2	7	6.6	Good	40+	pruning wounds, tree surgery in past,	Not under client's ownership	7.8	191.2
G1	X Cupressocyparis leylandii (Leyland Cypress)	M	250	7	0	C1	1.5	1.5	1.5	1.5	Good	20+	screen planting-unmanaged	Reduce the height of the hedge to a common height (e.g. 5 metre)	3	Linear
H1	X Cupressocyparis leylandii (Leyland Cypress), privet	M	100	1.5	0		1	1	1	1	Good	20+	Clipped but some die back	Replace hedging with better quality species	1.2	Linear

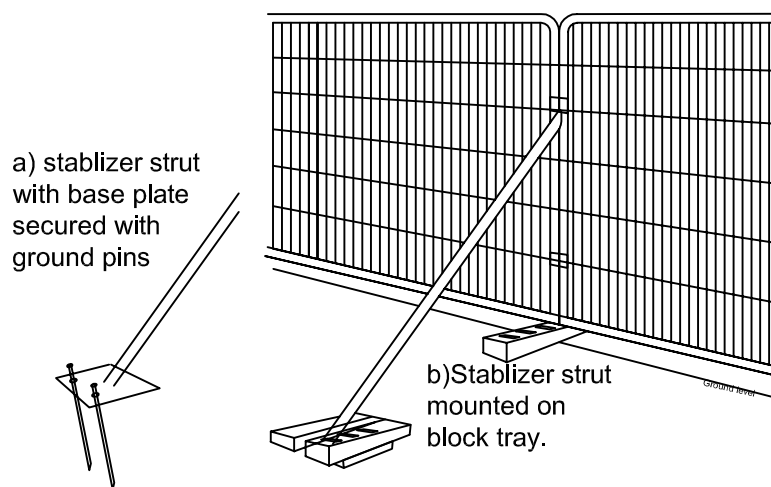
Appendix D: Copy of BS5837:2012 Table 1 “Cascade Chart for Tree Quality Assessment”

Category	Criteria			Identification on plan (RAB subject to legibility of the plan)
Category U (Formerly 'R')				
Those in such conditions that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	Trees that have a serious, irremediable, structural defect, such a that their early loss is expected due to collapse including those that will become unviable after removal of other category U trees (e.g. Where for whatever reason, the loss of companion shelter cannot be mitigated by pruning.) Trees that are dead or are showing signs of significant, immediate and irreversible overall decline. Trees infected with pathogens of significance to the health and/or so safety p of other trees nearby, or very low quality trees suppressing adjacent trees of better quality NOTE Category U trees can have existing or potential conservation value which might be desirable to preserve			Dark red (RAB 127-000-000)
Trees to consider for retention				
	1. Mainly arboricultural qualities	2. Mainly landscape qualities	3. Mainly Conservation qualities	
Category A				
Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; those that are essential components of groups or formal or semi-formal arboricultural features. (e.g., The dominant and/or principal trees within an e avenue	Trees, groups or woodlands or particular visual importance as arboricultural and /or landscape features	Trees, group or woodlands of significant conservation, commemorative or other value (/e.g. Veteran trees or wood pasture)	Light Green (RAB 000-255-000)
Category B				
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but downgraded because of impaired cons conditions (e.g. Presence of significant though remediable defects, including unsympathetic past management and storm damage) such as that they are unlikely to be suitable for retention beyond 40 years; or trees lacking the special quality necessary to merit category A designation	Tree present in numbers, usually growing in groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collections but situated a so as to make little visual contribution to the wider locality	Trees with materials conservation or other cultural c value	Mid blue (RAB -000-000-255)
Category C				
Trees of low quality, with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter of below 150 mm	Unremarkable trees of limited merit such or such impaired condition that they do not qualify in higher categories.	Trees present in groups or woodlands but without this conferring on them significantly great collective landscape value; and/or tree offering low or only temporary/transient landscape benefits	Trees with no materials conservation or other cultural value	Grey (Rab 091-091-091)

Appendix E: Protective Barrier and Fencing



**Copy of BS 5837:2012 Figure 2 (above) and Figure 3 (below)
Protective barrier, examples of above ground stabilizing
systems (for Heras type fencing) Total height 2.4metres
NOT TO SCALE**



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permission



Scheme <i>BS5837:2012</i>	Date <i>October 2017</i>
Title <i>Copy of Protective Barrier / Fencing</i> Scale <i>Drawings not to scale</i>	Drawn by <i>E.J.G</i> Job No
Elizabeth Greenwood C.M.L.I., F.Arbor.A. 10 Knight Street, Sawbridgeworth, Herts, CM21 9AT. Tel 01279 722381 mobile 07746867402, email ms.ejgreenwood@gmail.com	Drg No <i>Appendix D</i>

Appendix E: Geo-Web Details



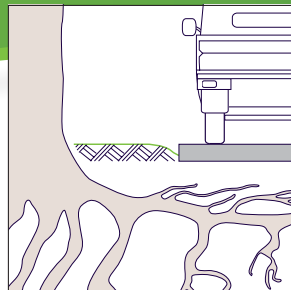
GEOSYSTEMS®



GEOWEB®

TREE ROOT PROTECTION (TRP) SYSTEM

Powered by GEOSYSTEMS® technology.



defining **green** in cellular confinement

THE PROBLEM

CONSTRUCTION-RELATED TREE DAMAGE

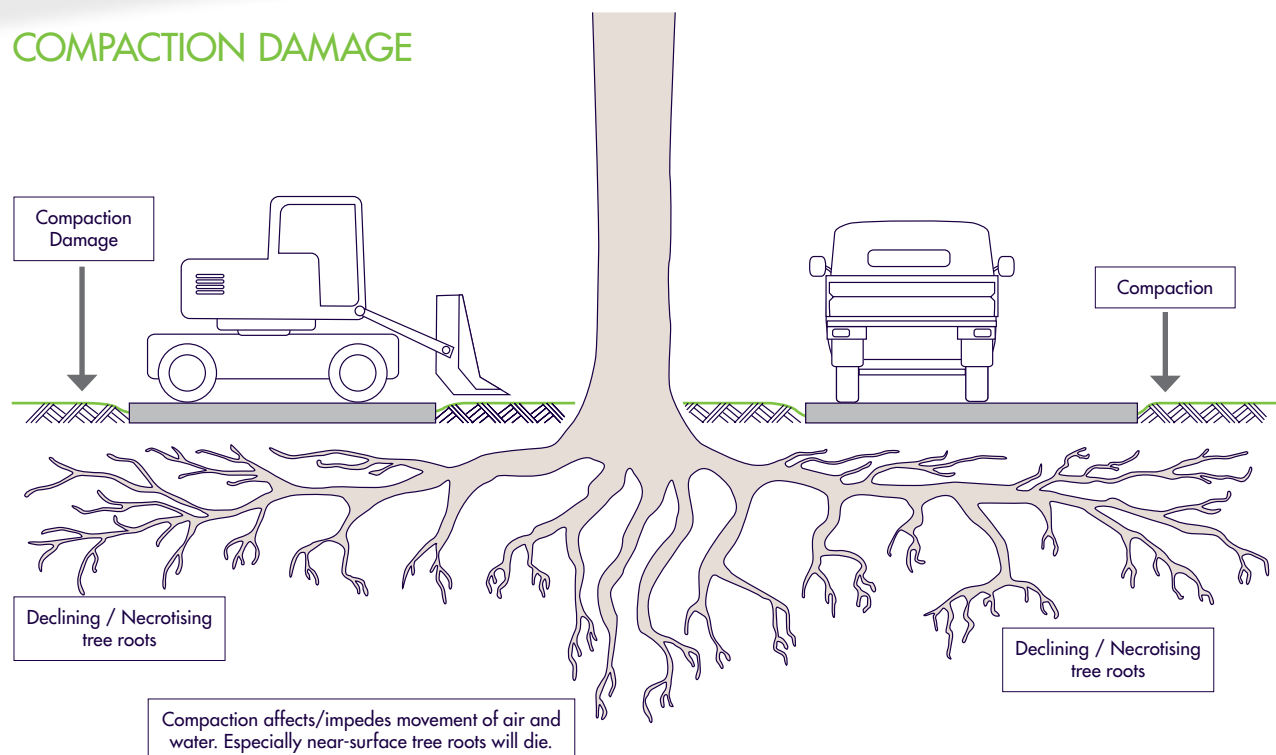
Critical Root Zone/Tree Protection Zone is the minimum area beneath a tree that must remain undisturbed to preserve a sufficient amount of root mass in order to give a tree a chance of survival.

When construction equipment and vehicles intrude a tree's Critical Root Zone, they can cause negative impacts to the soil environment including compaction of the soil, damage to near-surface roots and ultimately endanger the structural integrity of the tree. The majority of a tree's root system is contained within the top three feet of the surface, and construction excavation and compaction can damage or even destroy roots to the point where trees may not survive.

Tree Root Protection (TRP) systems should be eco-friendly as well as comply with local standards and regulations.



COMPACTION DAMAGE



THE GEOWEB® SOLUTION

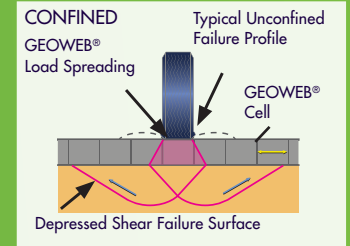
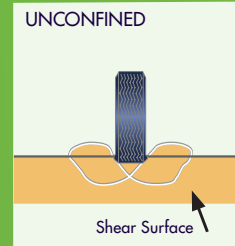
TREE ROOT PROTECTION (TRP) SYSTEM

Used extensively in civil engineering construction for over 30 years, the GEOWEB® system is a three-dimensional structure that:

- provides strength to confined soils
- distributes loads laterally, not vertically
- reduces point loads
- reduces compaction of the subsoil

Manufactured from high quality, high-strength polyethylene with a textured surface and perforated walls, GEOWEB® cells with selected infill control shearing, lateral and vertical movement, and reduce subbase depth requirements.

The GEOWEB® system is a low impact development (LID) solution with exceptional load-bearing capabilities and environmental benefits. The system has a long history of solving heavy load support problems for roadways, road base support, parking lots, road shoulders, ports, trucking/intermodal terminals and railroads.



LOAD DISTRIBUTION

By distributing and bridging applied loads, the GEOWEB® TRP system reduces vertical stresses that are typically applied to the underlying soil and root zone.

The GEOWEB® system is ideally suited for tree root protection applications where weak subsoil or no-dig restrictions exist.

COST BENEFITS

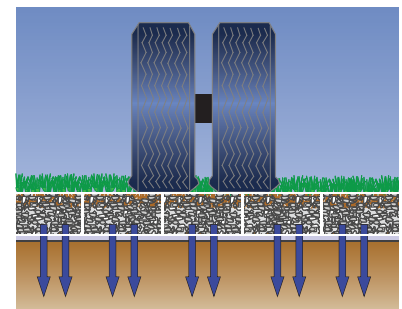
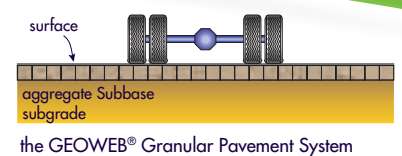
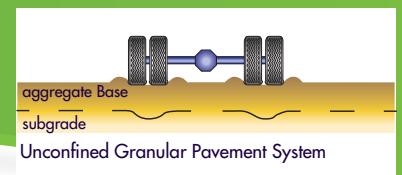
The GEOWEB® TRP system is an economical solution for reducing construction vehicle impact to the tree root zone compared with other methods. Once installed, the system has minimal-to-no visibility.

ENVIRONMENTAL BENEFITS

With permeable infill (topsoil/vegetation, aggregate, sand), perforated GEOWEB® cell walls offer environmental benefits:

- water infiltration
- lateral movement of air and water
- water and nutrient migration
- promotes root development

The tree root protection system can be a temporary or permanent solution.



GEOWEB®

TRP SYSTEM INSTALLATION

Step 1: Remove the upper grass and soft soils by hand or by machine if acceptable.

Step 2: Install a high-strength woven geotextile allowing adequate drainage as a separation layer between soft subgrade and GEOWEB® infill material.

Step 3: Expand GEOWEB® sections over the area to be protected and use temporary stakes or weights to hold sections open to prevent movement during infilling.

Step 4: Connect adjacent sections using ATRA® Keys. Position the sections so the slots are aligned, insert the key and turn 90 degrees locking the panels together. ATRA® Keys provide a long-term connection that is safer, quicker and stronger than staples or cable ties. In environmentally protected areas, ATRA® Keys can be used without the requirement for diesel-fueled compressors.

Step 5: For permeability, infill the fully connected GEOWEB® system with a well-graded, 25mm – 50mm granular, non-frost-susceptible quarried rock with no fines. Overfill by up to 50mm to allow for compaction.

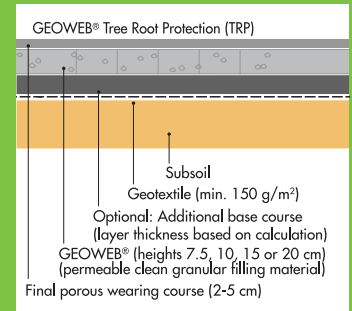
Step 6: Compact the fill material with conventional plant or non-vibratory plant when required. Fill should be maintained above the GEOWEB® system by a minimum of 10mm at all times or a permanent wearing course of blocks, porous asphalt or gravel installed.



DESIGN CONSIDERATIONS

It is important to ensure the correct GEOWEB® cell size and cell depth are specified and installed based on the anticipated pavement loads. These are calculated based on the following criteria:

- traffic type and loading
- frequency of traffic
- subgrade strength (typically CBR, Ev2, Cu or SPT values)
- infill type
- allowable settlement of the pavement



To assist you in determining the correct GEOWEB® solution for your application, Presto GEOSYSTEMS® or their network of distributors/representatives can assist with the calculation for your project. You can be confident that you will receive the most suitable and economical solution for your project.

PRESTO GEOSYSTEMS® COMMITMENT — To provide the highest quality products and solutions.

Presto GEOSYSTEMS® is committed to helping you apply the best solutions for your tree root protection needs. Our solutions-focused approach to solving problems adds value to every project. Rely on the leaders in the industry when you need a solution that is right for your application. Contact Presto GEOSYSTEMS® or our worldwide network of knowledgeable distributors/representatives for assistance.



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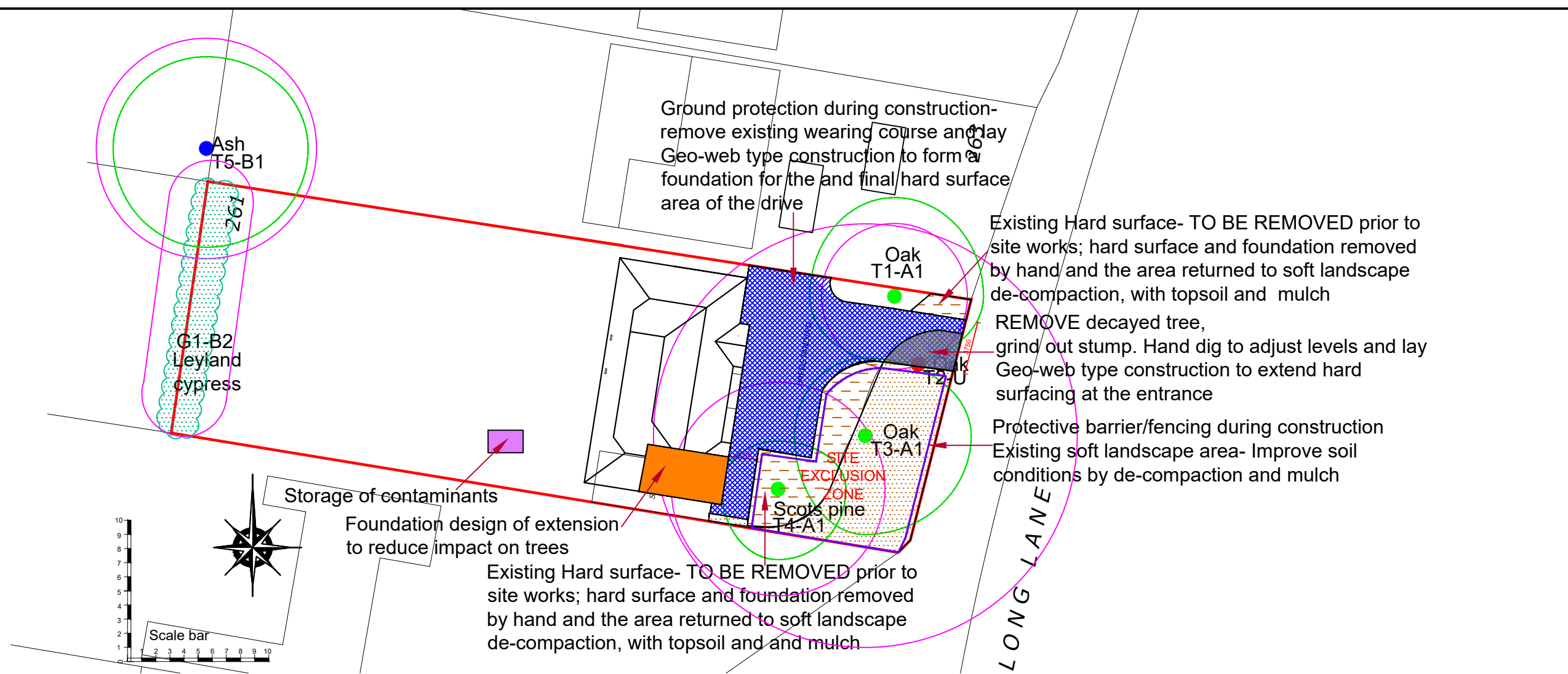
Appendix G: Indicative Arboricultural Supervision

Item	*Site Supervision Visit Number	Estimated Timing	Inspection	Date of Visit
Meet site foremen and discuss works and program. Setting out site and protective fencing, ground protection- site organization.	Visit 1	Prior to site clearance and demolition	1. Carry out tree removal and tree surgery and listed 2. Fence off all trees to be retained prior to demolition and site work 3. Remove hard surfacing area as marked on plan 1075.21.3 to improve conditions for oak and veteran oak (T1 and T3) 4. Provide and insert ground protection for the duration of construction works	
Setting out building, foundation excavation, trenches	Visit 2	Prior to construction	5. Carry out demolition and site clearance 6. Set up site working area	
Excavations/ changes of soil levels— and foundation and positioning of pile drivers details- inspect	Visit 3	During construction	7. Design foundation of extension using non invasive methods within RPA of trees 8. Hand-dig for any unavoidable excavation within the RPA of trees 9. For new surfacing insert ground protection as above for use of site works (see A plan 1075.21.4)	
On completion- removal of tree protection, planting and remedial works- removal	Visit 4	Post completion	10. On completion of works remove protective fencing and ground protection 11. Carry out remedial works as listed prior to landscape works 12. Carry out landscape works	

Appendix H: Plan 1075.21.1 Tree Constraints Plan

Appendix I: Plan 1075.21.2 Tree Surgery and Removal Plan

Appendix J: Plan 1075.21.3 Tree Protection Plan



Ground Protection

In the vicinity of the temporary unit working space will mainly be confined to existing hard surfacing. Where additional working space is required for construction within the root protection areas of retained trees, the British Standard specifies the following type of ground protection.

- For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geo-textile membrane;
- For pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geo-textile membrane;
- For wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

Hand dig

Hand digging will also be required for all works within root protection areas of trees, including removal of surfacing, trenches, excavation for fence post and for cultivation for soft landscape areas. All hand digging within the root protection areas of trees should be supervised by a competent arboriculturalist. Within root protection areas all excavation should be hand dug. A trench should be hand dug near the trees to ascertain whether roots are present. If roots over 50mm are found these should, where possible, be bridged, and surrounded by sand- roots under this

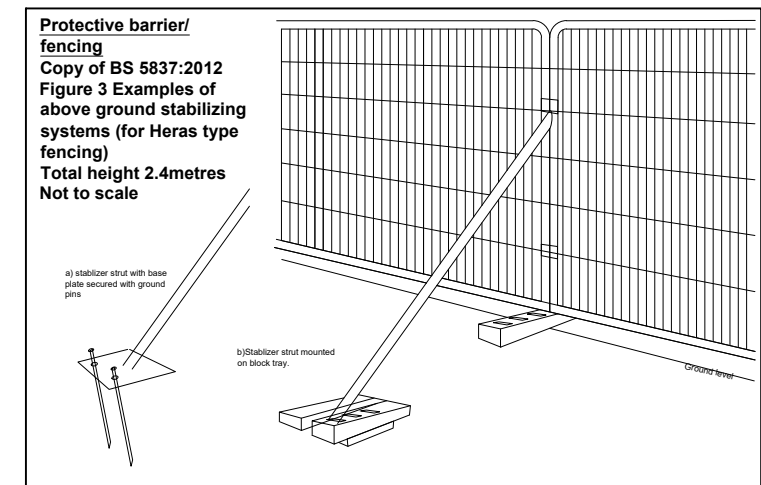
dimension should be cut to a clean cut and surrounded by sand. No roots are to be left exposed but covered with damp sand or hessian. The surface level of the path may need to be adjusted to retain these roots.

If on investigation of the hand dug trench there are no roots present mechanical excavation may be possible if a banksman is supervising the excavation to ensure that if roots are unearthed they can be protected and clean cut and surrounded by sand. Hand digging may need to be resumed to complete the excavation.

This would include exploratory excavation by hand for the foundations of the paths and new hard surfacing within the root protection area of the trees

Storage of contaminants and mixing of concrete

This must be carried out outside the root protection areas of all trees. The ground should be protected with heavy duty plastic sheeting, e.g. 1200 gauge DPM, with edges secured and raised to prevent spillage and with a raised lip along the access point. On the tree protection plan this is indicated to be positioned within the rear garden

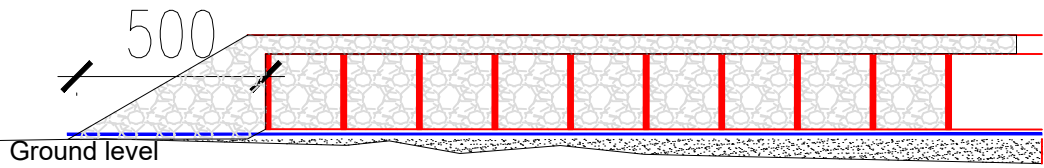


SCHEDULE

- Trees to retain
- Tree removed
- Root protection areas
- Protective /barrier fencing
- Foundation design of extension to reduce impact on trees
- Ground protection & new surfacing - Reduce area of hard surfacing- Remove by hand tarmac lay Geoweb with permeable surface construction
- Existing Hard surface- TO BE REMOVED prior to site works; hard surface and foundation removed by hand and the area returned to soft landscape de-compaction, with topsoil and mulch within the RPA of oak trees
- Existing soft landscape area- improve soil conditions by de-compaction and mulch
- REMOVE decayed tree, grind out stump. Hand dig to adjust levels by HAND and lay Geo-web type construction to extend hard surfacing at the entrance
- Concrete mixing and storage of contaminants

Indicative access for construction works within the root protection area of trees

Construction details as outlined by 'Geosynthetics'
Remove turf by hand (50mm depth maximum)
Infill irregularities with 50mm sharp sand, Lay fibretex FEM geotextile
Lay 200mm geogrid Infill with No fines 20-40mm stone, and lay an additional 50mm depth of stone to act as wearing surface.
Allow stone to bank side of geo-web, with no edge restrainers.



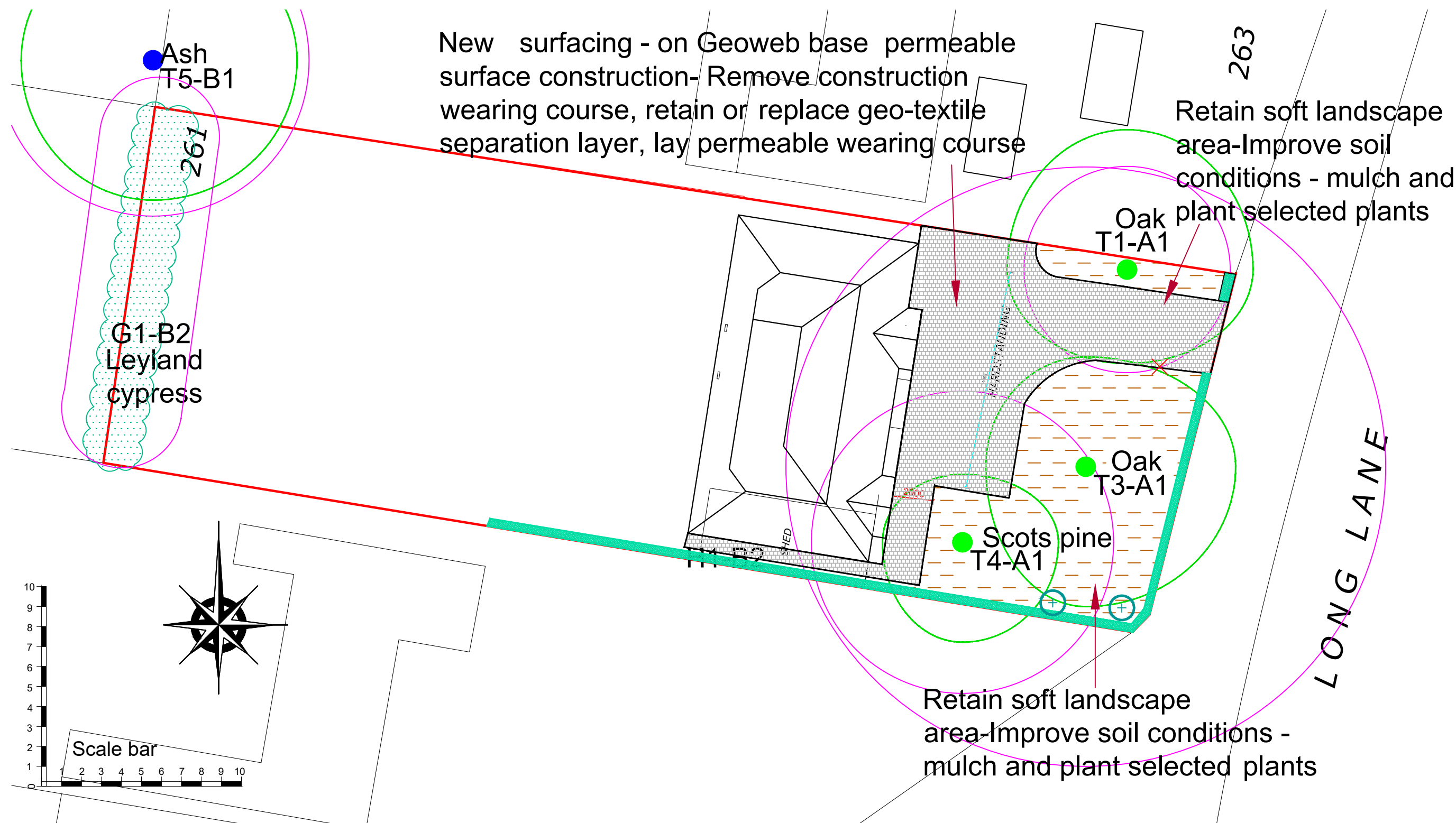
Depth as specified to take weight of construction in accordance with supplier instructions

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Scheme 261 Long Lane, Uxbridge	Date November 2021
Title Tree Protection Plan- Construction	Drawn by E.J.G
Scale 1:100 @ A0 or 1:200 @ A2	Job No 1075.21
Elizabeth Greenwood C.M.L.I., F.Arbor.A. 10 Knight Street, Sawbridgeworth, Herts, CM21 9AT. Tel 01279 722381 mobile 07746867402, email ms.ejgreenwood@gmail.com	Dwg No 1075.21.3 Appendix J

Appendix K: Plan 1075.21.4 Post Construction- Site Layout



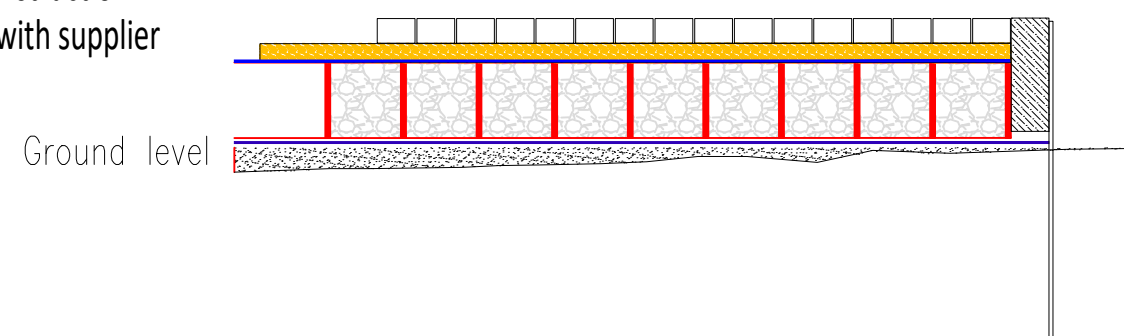
SCHEDULE

-  Trees to retain
-  Tree removed
-  Root protection areas
-  New surfacing - on Geoweb base permeable surface construction- Remove construction wearing course, retain or replace geo-textile separation layer, lay permeable wearing course
-  Improve soil conditions - mulch and plant selected plants
-  New soft landscape boundary planting
-  Indicative new trees

Indicative drive detail

Remove existing wearing course for construction works- lay further geotextile separation membrane.
Lay wearing course e.g block paving, on 50mm sand or gravel with additional layer of fibre geotextile (e.g.terran) to keep layers separate.
Edge with timber edging and fix with metal pins. Set edging 50mm from the edge of the drive.

Depth as specified to take weight of construction in accordance with supplier instructions



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Scheme 261 Long Lane, Uxbridge	Date November 2021
Title Site layout on completion	Drawn by E.J.G
Scale 1:100 @ A0 or 1:200 @ A2	Job No 1075.21
Elizabeth Greenwood C.M.L.I., F.Arbor.A. 10 Knight Street, Sawbridgeworth, Herts, CM21 9AT. Tel 01279 722381 mobile 07746867402, email ms.ejgreenwood@gmail.com	Drng No 1075.21.4 Appendix K

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