



Merewood
Arboricultural Consultancy Services

**B.S. 5837 Arboricultural Report
Implications Assessment
and
Method Statement
at
61 Long Lane
Ickenham
UB10 8QU**

**Client: Christopher James Architecture
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Arborfield
Reading
RG2 9LZ**

Important note for demolition and construction contractors

This document includes requirements for arboricultural supervision by a suitably qualified arboricultural consultant in certain areas and techniques that may involve a specialised input. Adherence to these requirements is necessary for this document to comply with the Town and Country Planning Act 1990

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Date
16/03/2021



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1.0 Introduction

1.1 Instruction

- 1.1.1 I am instructed by Christopher James Architecture to undertake an Arboricultural Survey at 61 Long Lane Ickenham. I am also instructed to assess the likely impact of development proposals and produce an Arboricultural Method Statement detailing how trees shall be protected from the proposed construction activity.

1.2 The Site

- 1.2.1 61 Long Lane Ickenham is a detached house on the southern side of Long Lane Ickenham, served by an in-out driveway. The property has a front garden largely given over to parking and hard standing and a rear garden. The property is located to the south of Ickenham village centre, north of the A40 trunk road out of north west London.
- 1.2.2 Long Lane is a main road running in roughly a north -south direction linking Hillingdon to the south with Ickenham to the north. The surrounding area has a semi urban feel, with local shops, houses, and recreation areas. Mature trees play a significant role in the local landscape.
- 1.2.3 The topography of the site is more or less level with no significant changes across the site.
- 1.2.4 It has been established that the property is situated within the Ickenham Village Conservation Area. Under the provisions of the Town and Country Planning Act 1990 (Tree Regulations 2012) Section 211, any tree in excess of 75mm diameter (measured 1m from ground level), is protected. Prior to working any such tree in a Conservation Area (including pruning or felling), it is necessary to give a six week notice of intent to carry out the work to the Local Planning Authority.

1.3 Survey date

- 1.3.1 The trees at 61 Long Lane Ickenham were surveyed on January 28th 2021.

1.4 Scope and Purpose of the report

- 1.4.1 The tree survey and assessment of existing trees has been carried out in accordance with guidance contained within British Standard B.S. 5837:2012 'Trees in relation to design, demolition and construction - Recommendations' (hereafter referred to as B.S. 5837). The guidelines set out a structured assessment methodology to assist in determining which trees would be deemed either as being suitable or unsuitable for retention.
- 1.4.2 The Method Statement should be regarded as a *Heads of Terms* Method

Statement which outlines the general principles that are to be adopted during demolition and construction. However, specific activities within the root protection area of trees may need to be agreed in more detail if requested by the local authority at the reserved matters stage (for outline planning applications) or via planning conditions. Certain matters may need a separate input from specialists in a particular field.

1.4.3 The purpose of this report therefore is therefore to firstly, present the results of an assessment of the existing trees' arboricultural value, based on their current condition and quality and to secondly, provide an assessment of impact arising from the development of the site.

1.4.4 The report is designed to accompany a planning application for development proposals at the above site. The survey has therefore focused on any trees present within or bordering the site that may potentially be affected by the future proposals or will pose a constraint to any proposed development.

1.5 Documents referred to

1.5.1 The tree survey and this report has been prepared with reference to the following documents:

The topographical survey of the site (ref RG21 2232 01)
The proposed site layout drawings (87 - 1105)

2.0 Methodology

2.1 Tree Survey methodology

2.1.1 A ground level survey of the trees has been carried out in accordance with the criteria set out in Chapter 4 of B.S 5837. The survey has recorded information relating to all those trees within the site and those adjacent to the site which may be of influence on the proposals.

2.1.2 Where applicable, trees with significant defects have been highlighted and appropriate remedial works have been recommended. However, this report should not be seen as a substitute for a full *Safety Survey* or *Management Plan* which are specifically designed to minimise risk and liability associated with the responsibility for trees. No climbed inspections or specialist decay detection were undertaken.

2.1.3 Evaluation of tree condition within the assessment applies to the date of survey and cannot be assumed to remain unchanged. It may be necessary to review these within 12 months in accordance with sound arboricultural practice.

2.1.4 Trees have been assessed as groups where it has been deemed appropriate. The term group has been applied where trees form cohesive arboricultural features, either aerodynamically, visually or culturally. An assessment of individual

trees within groups has been made where there is a clear need to differentiate between them.

- 2.1.5 Trees have been divided into one of four categories based on Table 1 of B.S.5837, ‘*Cascade chart for tree quality assessment*’. For a tree to qualify under any given category it should fall within the scope of that category’s definition.

Category U - Red	Trees 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.
Category A - Green	Those trees of the highest quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).
Category B - Blue	Trees of moderate to high quality and value: in such a condition as to be able to make a significant contribution (a minimum of 20 years is suggested).
Category C - Grey	Trees of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter of below 150mm
Subcategory 1 concerns mainly arboricultural values, how good a specimen is in terms of form and physiological condition; the value of a tree as a component in a group or in a formal or semi-formal arboricultural feature such as an avenue.	
Subcategory 2 concerns mainly landscape values and considers the importance of a tree or group of trees as an arboricultural or landscape feature. Trees present in larger numbers, such as woodlands for example may attract a higher rating than they would as individuals because of their collective value.	
Subcategory 3 concerns mainly cultural values including conservation, historical, commemorative, or other value such as veteran or wood pasture.	

- 2.1.6 RPA’s of single stemmed trees are calculated according to the following formula:

$$\text{RPA radius} = 12 \times \text{stem diameter (measured at 1.5m above ground level)}$$

- 2.1.7 Where a tree has more than one stem, the equivalent single stem diameter is usually recorded. This is calculated by adding the squares of the stems and then finding the square root of the total. The radius of the RPA is then calculated by multiplying the equivalent stem diameter by 12.
- 2.1.8 Occasionally this method is not appropriate (e.g. for coppiced specimens where there are many stems). In such cases the diameter at ground level may be recorded to provide a suitable RPA calculation. Further guidance can be found at Annex C of B.S.5837.
- 2.1.9 Where access is restricted an estimate of the stem diameter is provided and this is indicated in the appropriate column.

3.0 Results

3.1 Results summary

- 3.1.1 Appendix 1 presents details of the individual trees and groups found during the assessment including heights, stem diameters and rpa's, crown spread (normally measured to cardinal points unless otherwise indicated), an indication of physiological and structural condition, age class, any appropriate management recommendations, estimated life expectancy and a BS5837 category of quality.
- 3.1.2 The tree survey has shown that of the 8 trees and 4 groups of trees surveyed, 0 are category 'A' 3 are category 'B'; 5 are category 'C' plus 4 category 'C' groups and 0 are category 'U'.

4.0 Arboricultural Impact Assessment

4.1 A Description of the Proposed Development

- 4.1.1 The proposals to develop the site include the demolition of the existing two storey detached dwelling and the erection of a two storey apartment building to provide 4 x 2 bed, 4 x 1 bed and 1 x 2 bed penthouse together with associated parking, refuse and recycling provision/storage and landscaping.
- 4.1.2 The proposals as presented here offer an opportunity to provide new tree planting at the front of the site to augment the visual amenity of Long Lane.

4.2 Proposed tree removals

- 4.2.1 The proposed development has been set out in order to optimise tree retention as far as possible, whilst adhering to other planning restrictions. The scheme requires the removal of the following trees:-

Remove	Japanese maple (T1) Laburnum (T8) Lawson cypress (G1)
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- 4.2.2 It is also noted that the relocation of the driveway to a central position will result in the need to remove/transplant a recently planted flowering cherry from the Highways verge (off site).
- 4.2.3 It is proposed to enter an agreement with the Highways Authority to either transplant or replace this tree and (subject to there being no underground restrictions to planting such as services) to provide a n additional tree planting.

4.3 Changes to soil levels

- 4.3.1 There are no changes to soil levels proposed within the RPA's of trees to be retained.

4.4 The Impact of Accessing the Site

- 4.4.1 Site access is unencumbered by overhanging branches and therefore no facilitation pruning will be required.
- 4.4.2 The movement of machinery (and pedestrians) around a site has the potential to impact on the trees.
- 4.4.3 Healthy soil is made up of different sized particles with air spaces between those particles. It is these air spaces that help with drainage of rainwater through the soil, removing carbon dioxide and replenishing oxygen thereby allowing roots to breathe. Fine roots are able to grow into these voids, gradually expanding over time as they grow larger, but where soil has become compacted growth is inhibited and roots can die.
- 4.4.4 Vehicles accessing the site will compact soil and destroy the layered structure, especially of topsoil. Other site activities including the movement of plant machinery (dumper trucks, excavators, cranes, forklifts and pedestrian movements) also contribute to soil erosion and compaction.
- 4.4.5 In order to ensure that trees which are to be retained maintain enough volume of soil around their roots to stay healthy (the calculated RPA), protective fence barriers must be erected and a means to prevent soil compaction and erosion installed.
- 4.4.6 The fenced off areas will create Construction Exclusion Zones (CEZ's) which should be considered sacrosanct. Activity within the CEZ is to be forbidden unless previously agreed with the Consulting Arboriculturist and in agreement with the Local Planning Authority.
- 4.4.7 The tree protection plans (Appendix 2) show where fencing is to be erected prior to the commencement of works on the site.

The erection of protective fencing barriers and the recommended type of barrier is addressed in the Arboricultural Method Statement – section 3.3.

- 4.4.8 Where soil has been compacted, this can inhibit the healthy development of newly planted trees.
- 4.4.9 In this instance it is proposed to plant two new trees at the front of the site, as indicated on the tree protection plan. In order to overcome the issue of soil compaction, it is proposed that tree pits are excavated at the end of the construction period and back filled with an engineered tree soil (ArborRaft tree soil).
- 4.4.10 The tree pits are to be covered at the surface by the ArborRaft system. The cells of the system are interlocking and provide load bearing support for pedestrians and vehicles, preventing soil compaction.
- 4.4.11 ArborRaft soil is a bespoke soil that has been specifically developed to work

as a rootzone with the ArborRaft system ensuring the optimum moisture, aeration and nutrient content is achieved whilst maintaining a stable layer.

- 4.4.12 The ArborRaft system will thereby help to create a protected tree pit free of compaction across which roots can grow, exploiting the protected soil layer, enabling the roots to continue under the driveway and beyond.

The installation of the ArborRaft product is addressed in the Arboricultural Method Statement – section 3.10.

4.5 The Impact of Demolition activities

- 4.5.1 The proposals require the demolition of the existing house and associated structures before other works can begin on the site. The movement of plant machinery around these buildings and the movement of hardcore arisings to a suitable holding area has the potential to cause soil compaction and branch damage.
- 4.5.2 The tree protection plans show that there is enough space for machinery to be able to manoeuvre without coming into contact with the crown spreads of trees. Where it is not practicable to maintain tree protection measures for the demolition of a structure (in whole or in part), the protective fencing shall be temporarily dismantled and the demolition undertaken by hand as far as possible, or using a machine working with a long arm to enable the machine to remain outside of the RPA of the trees.
- 4.5.3 Soil stripping (the removal of the topsoil layer) is another pre-commencement activity that has the potential to impact on retained trees. Topsoil within RPA's is to remain undisturbed to maintain the health of the trees. Removed topsoil is to be held temporarily near to the entrance of the site where it can be collected and removed. No topsoil will be allowed within the construction exclusion zones.

Demolition procedures are outlined in the Arboricultural Method Statement – section 3.4.

4.6 The Impact of Excavations

- 4.6.1 The proposed flats are located outside the RPA's of trees to be retained, other than a small encroachment of the footprint of the patio for flat 3. This will result in the removal of a small section of this hedge.
- 4.6.2 The excavations of the foundations (whether a strip foundation or a pile foundation is used) will not otherwise impact on the CEZ's.
- 4.6.3 The services and drains have yet to be detailed but it is expected that the drains and service runs will run directly from the flats out to the west side to meet with mains supplies on Long Lane.

- 4.6.4 Running the services in this direction will keep all necessary excavations away from the root protection areas of trees to be retained .The final route for services can be agreed as a planning condition.

4.7 The Impact of Construction Site Activities

- 4.7.1 The primary activities (likely to affect trees) concerning the actual construction of the flats once foundations are complete will include the delivery and storage of materials, the mixing of mortar or plaster, the movement of materials around the site and welfare for construction workers.
- 4.7.2 Site offices and welfare huts can be located to the side of the site at the front, close to the site entrance.
- 4.7.3 Deliveries will be made by means of the existing in out driveway, obviating the need for a turning head. Materials can be set down in a designated area to the front of the flats where they can either remain in situ until needed or be brought under cover if necessary (cement dust or plaster bags for example would need protecting from the elements). Materials can also be brought to the rear of the flats where there is also storage space as shown on the TPP.
- 4.7.4 The driveway area to the front of the flats is to be used for the storage of hazardous chemicals and petrochemical products and will also provide a suitable area for mortar mixing in line with COSHH regulations to ensure there is no detrimental effect on trees.

The mixing of cement and cleaning of tools is addressed in the Arboricultural Method Statement – section 3.6.

4.8 The Impact of Trees on the Development

- 4.8.1 The proposed flats are positioned to the west of the trees to the rear of the property so the habitable rooms remain unaffected by any undue shading from trees. Furthermore the communal amenity areas at the rear also receive good levels of light during the day and throughout the year.

4.9 Summary

- 4.9.1 The proposed houses can be built with minimal impact in their surrounds. Full provision can be made for the protection of existing trees to ensure their continued viability following the completion of construction works. The scheme also provides for new tree planting.



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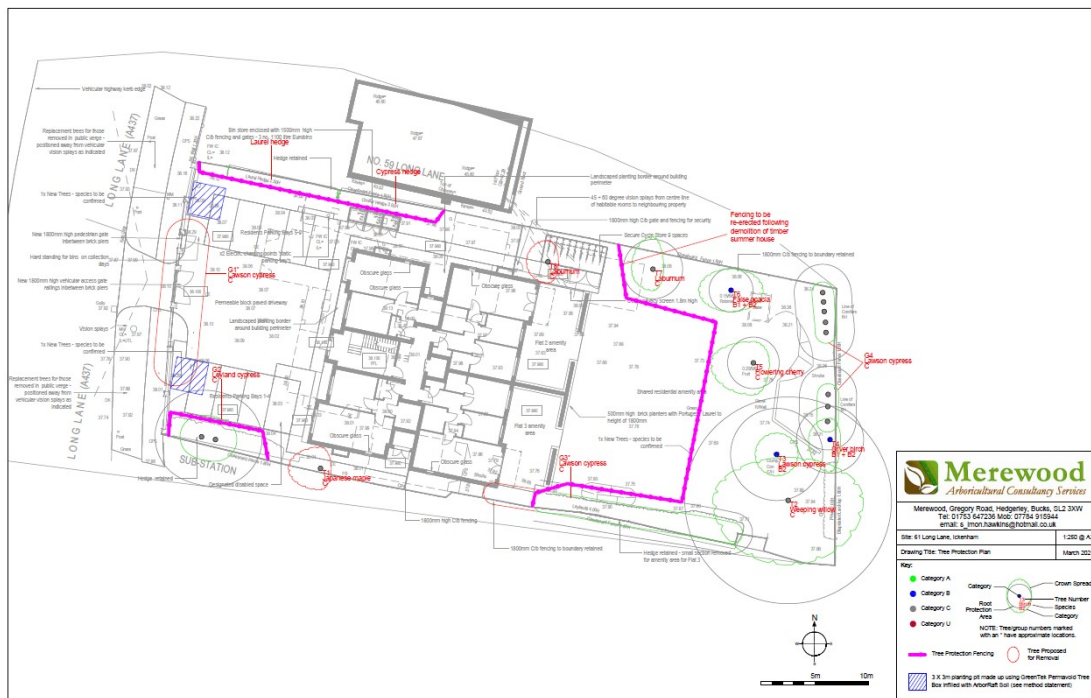
Appendix 1

Tree survey data sheets

Tree no	Species	Height	Stem diameter	Crown spread				Physiological condition	Structural condition	Age	Observations/ Management recommendations	Life expectancy	Category
				North	South	East	West						
T1	Japanese maple	4	170	2	2	1	3	Good	Good	M		40+	C
T2	Weeping willow	11	800	4	6	7	7	Good	Poor	M	Extensive decay in the main stem compromises structural stability	10 - 20	C
T3	Lawson cypress	17	260 200 140	2	2	2	2	Fair	Fair	M		20 - 40	B2
T4	Silver birch	16	260	2	3	1	2	Good	Good	M		40+	B1 + B2
T5	Flowering cherry	5	200	2	3	1.5	4	Fair	Poor	M		10 - 20	C
T6	False acacia	7	170	2	2	3	3	Good	Good	M/A	A well formed tree with promise for the future	40+	B1 + B2
T7	Laburnum	7	230	3	2	1	2	Good	Fair	M		20 - 40	C
T8	Laburnum	6	270	2	2	1	2	Good	Good	M		20 - 40	C
G1	Lawson cypress	10	160	2	2	2	2	Poor	Poor	M	A poor quality hedge, not maintained with several dead/dying stems	20 - 40	C
G2	Leyland cypress	10	360	2	2	2	2	Good	Fair	M	Hedge that needs to be pruned to maintain shape	20 - 40	C
G3	Lawson cypress	5	160	1	1	1	1	Good	Good	M	A well maintained hedge that serves as a valuable screen	20 - 40	C
G4	Lawson cypress	9	220	1	1	1	1	Fair	Fair	M	Hedge that needs to be pruned to maintain shape	20 - 40	C

Appendix 2

Tree Protection Plan



Appendix 3

Arboricultural Method Statement

(AMS)

1.0 Brief:

- 1.1 I am instructed by Christopher James Architecture to prepare an Arboricultural Method Statement (AMS) in respect of a proposed re-development of the site at 61 Long Lane Ickenham.
- 1.2 I am to advise on the likely impact of the development proposals to the trees on and adjacent to the site. I am to provide recommendations for tree retention and protection, including details of appropriate measures that are to be undertaken in order to minimize the impact of development.
- 1.3 The method statement is required to support a planning application for the development of the site including the demolition of the existing two storey detached dwelling and the erection of a two storey apartment building to provide 4 x 2 bed, 4 x 1 bed and 1 x 2 bed penthouse together with associated parking, refuse and recycling provision/storage and landscaping.
- 1.4 The method statement should be viewed as a *heads of terms* method statement specifying the general principles of demolition and construction procedures. The statement will also include more detailed approaches that may be required when working within the root protection areas (rpa's) of trees.
- 1.5 The method statement is based on the best available information at this stage of the planning process and may need to be updated in the context of a specific planning condition when the detail is known.
- 1.6 The purpose of the method statement is to explain how and when the protection measures should be installed, and how they are to be maintained for the duration of the development activity.

2.0 Arboricultural Supervision

- 2.1 An arboricultural consultant will be appointed by the developer prior to the commencement of any works on the site.
- 2.2 Prior to the commencement of works a set up meeting between the main contractor, any (relevant) sub-contractors, a representative from the LPA and the arboricultural consultant will take place. In the event the representative from the LPA is unable to attend, the arboricultural consultant will make a note of discussions and will advise the LPA in writing.

- 2.3 The meeting will establish a line of communication between the working parties and to understand the parameters of the site, underlining the importance of maintaining and respecting tree protection barriers.
- 2.4 At the meeting the Arboricultural Method Statement (AMS) is to be signed off by the person responsible for the day to day running of the site (normally the site foreman).
- 2.5 By signing off the AMS, the responsible person agrees that he/she has read and understood the method statement and agrees to adhere to it.
- 2.6 In the event of the responsible person being replaced at any time during the development it shall be their responsibility to ensure the new person responsible for the site is made aware of the method statement and the need to adhere to the method statement.
- 2.7 A copy of this report must be permanently available on site for the duration of the development activity. It can also be copied for the purposes of tendering, planning the timing of operations and used as a reference as a general guide on how to protect important trees.
- 2.8 A full scale copy of the tree protection plan is to be available at all times on site including a scale bar.
- 2.9 If any tree work, agreed as part of the planning permission is needed in order to implement the proposed scheme (i.e. felling or pruning works), this will be undertaken before other works commence on site.
- 2.10 No other tree work is to take place without obtaining, in writing, the express consent of the Local Authority.
- 2.11 Once the site becomes active the arboricultural consultant will visit on regular occasions to record specific stages of the development (e.g. demolition, laying of foundations, construction etc.).
- 2.12 All site visits are to be recorded on paper and with accompanying photographs. The purpose of recording the visits is to
 - (a) Provide the developer with proof of compliance in the event of any dispute
 - (b) Allow the LPA to discharge the relevant planning conditions

3.0 The development

3.1 Overview

- 3.1.1 The expected programme of site development where arboricultural input is required is as follows:

1. Pre commencement meeting
2. Agreed tree removal.
3. Installation of protective fencing
4. Demolition of existing dwelling
5. Erection of main build
6. Installation of services
7. Removal of tree protection measures
8. Excavation of tree pits
9. Final landscaping

3.2 Tree pruning

3.2.1 If any tree work is needed in order to implement the proposed scheme (i.e. felling or pruning works), this will be undertaken before other works commence on site. All tree works are to be carried out in line with the recommendations of B.S. 3998: 2010 Tree work –Recommendations.

3.2.2 Proposed works for the scheme include:-

Remove	Japanese maple (T1) Laburnum (T6) Lawson cypress hedge (G1) Short section of Lawson cypress hedge (G3) Flowering cherry from highway verge
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3.2.3 If it is discovered that further felling or pruning works are needed this is to be agreed in writing with the LPA first.

3.3 Erection of fencing

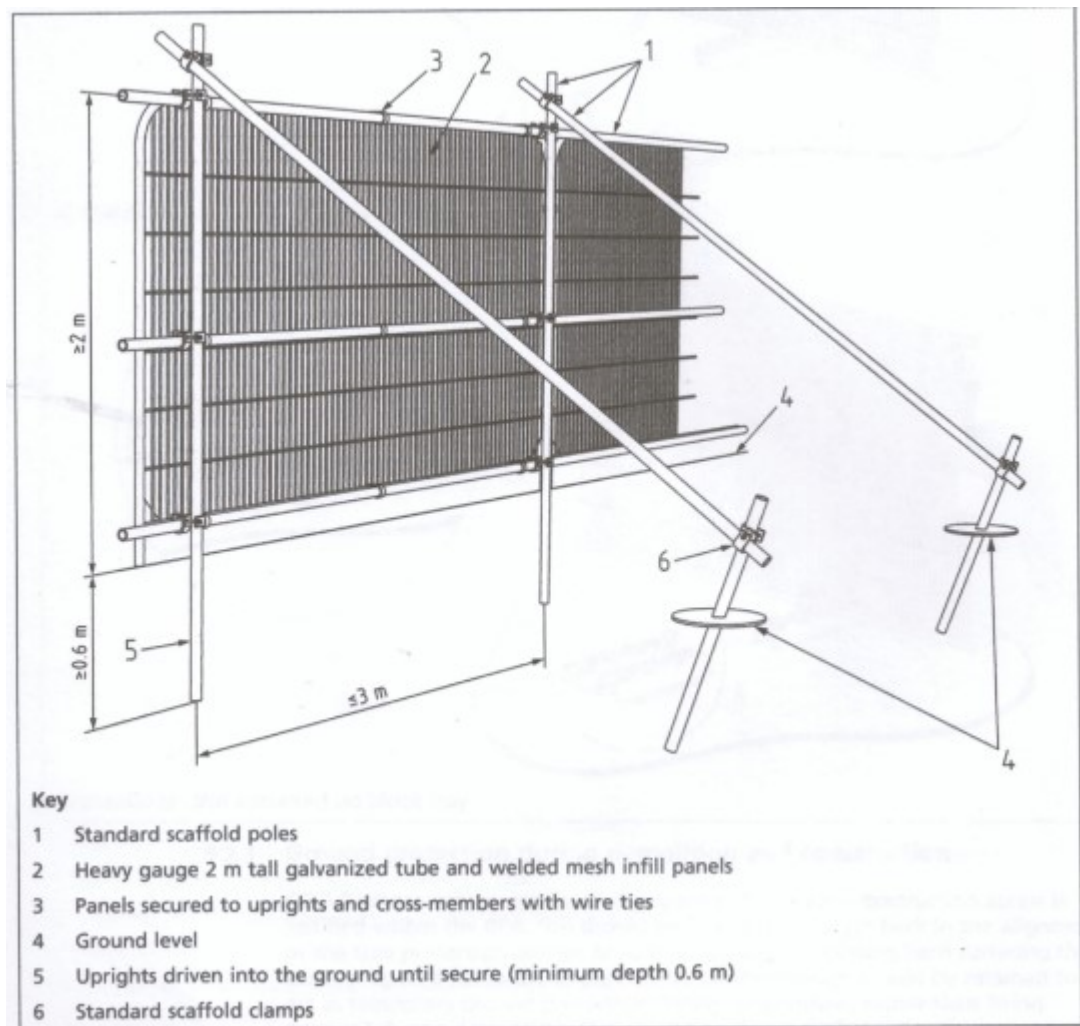
3.3.1 The tree protection plan (appendix 2) shows the line and position of the root protection fencing to be erected prior to any other works taking place on site.

3.3.2 The root protection fencing installation shall be approached from within the central working zone to avoid damage within the root protection area itself, in accordance with the recommendations of BS 5837/2012, as illustrated by Fig. 1.

3.3.3 The fencing for the root protection zones shall be constructed of scaffold tube uprights (set at 3m intervals with diagonal braces driven securely into the ground). Thereafter ‘Heras’ type fencing shall be attached to the scaffold framework using either steel strapping or scaffold clamps. The fencing shall comply with the requirements of the British Standard B.S. 5837:2012 ‘Trees in relation to design, demolition and construction - Recommendations’.

3.3.4 The fenced off areas are to be regarded as a Construction Exclusion Zone. This area is to be considered sacrosanct and strictly off limits to

any construction activity including any movement of machinery, storage of materials or parking of contractors' vehicles.



Signage attached to fencing reinforces the protection afforded by these barriers

- 3.3.5 The fencing protecting the RPA is not to be moved under any circumstances unless this has been specifically detailed in the AMS or agreed on site with the arboricultural consultant present.
- 3.3.6 Ignoring the fencing barriers may constitute a breach of the planning permission and may also be regarded as in contravention of any formal tree protection that applies (Tree Preservation Orders/ Conservation Areas).
- 3.3.7 There is to be no burning of any materials or substances within 10m of the root protection barriers.
- 3.3.8 There is to be no storage of cement bags, chemicals or any other toxic or potentially toxic substances within the CEZ.
- 3.3.9 Once the fencing has been properly installed, the retained arboricultural consultant will visit the site to confirm the correct installation of the fencing.
- 3.3.10 The installation of the fencing will be photographed and recorded and a record of this will be passed on to the arboricultural officer at the Local Authority.

3.4 Demolition of existing dwelling

- 3.4.1 The demolition of all of the existing building and other structures will take place before the construction works can begin.
- 3.4.2 The existing bungalow is to be soft stripped including removal of electrics and plumbing, all to be made safe. Glass and glazing are to be removed by hand.
- 3.4.3 Access equipment is to be erected and the roof tiles removed by hand and cleared from the site in skips.
- 3.4.4 Timber roof trusses /soffits/ guttering and downpipes will be removed by hand.
- 3.4.5 Demolition of higher structures will take place using a standard 'top down' method, pulling the existing structures down from the roof using a JCB or similar machinery.
- 3.4.6 Debris will be directed towards the interior of the structures, leaving any walls closest to trees until last as far as safely possible in order to minimise any impact from debris.

3.5 Foundations

- 3.5.1 The foundations are expected to be excavated using standard methods (i.e. a digger with a bucket to produce a strip foundation), Where this is

to be used the digger is to sit at the side of the footprint, depositing earth into a dumper truck which will take the excavated soil to the side of the site for disposal by lorry.

- 3.5.2 If pile foundations are to be used the piling rig will sit inside the footprint of the new apartments working from back to front to exit out at the front entrance without moving across any root protection areas.
- 3.5.3 The spoil from the foundations will be loaded onto tipper lorries and taken away by way of the front entrance. No excavated soil is to be deposited within the site parameters.

3.6 Mortar mixing

- 3.6.1 Concrete (when not delivered direct by concrete lorry) and mortar will be mixed to the front of the site, in a dedicated area or using a mortar tower. All mortar mixing and handling of any other hazardous materials shall take place outside the rpa's of trees.
- 3.6.2 The area around the mortar mixing area is to be covered by a heavy duty tarpaulin sheet of at least 150g/m² thickness to prevent the spillage of concrete and other aggregates onto the soil.
- 3.6.3 Water run-off from the cleaning of either a mortar tower or concrete mixers is to be directed away from rpa's and should take place as far from trees as possible.
- 3.6.4 If necessary a confinement area controlling the run-off shall be installed, incorporating an impermeable layer of strong plastic sheeting held within a raised bed. Washing of cement mixers shall take place only within the confined area.

3.7 Storage of materials

- 3.7.1 Materials are to be delivered by way of the driveway to the main delivery/set down areas at the front of the new apartments using the existing in-out driveway.
- 3.7.2 Materials will be re-distributed to the designated storage areas about the site by hand, wheelbarrow or by small machine (fork lift, dumper truck, etc).

3.8 Crane operations

- 3.8.1 The offloading of materials such as roofing joists is to be undertaken using a mobile crane where needed. The TPP shows that there is room for a mobile crane to be positioned appropriately at the front of the new building, where it can hoist materials over the building using an extension arm, without coming into contact with the branches of the trees.

3.9 Installation of services

- 3.9.1 The proposed drain and service runs have not yet been detailed but are likely to be routed west out onto Long Lane where there is plenty of space for a service trench to be excavated.
- 3.9.2 The layout of drainage and service runs can be made the subject of a planning condition and would have to be agreed before any works can commence on site.

3.10 Excavation of the tree pits and installation of ArborRaft

- 3.10.1 The proposed tree pits at the front of the site are to be prepared by excavating the soil using a mechanical digger, following an evaluation to confirm that no services or electrical cables are present and that it is appropriate to use machinery. In the event of it not being possible to use machinery the pit will have to be dug by hand.
- 3.10.2 Square shaped pits (to discourage root girdling) shall be dug, large enough for roots to spread out evenly with allowing for least 500mm clearance from the sides.
- 3.10.3 The depth of the hole must be sufficient to allow for the roots to extend fully to the bottom of the pit (but no deeper) whilst the root collar remains at ground level and can be clearly seen. The sides of the pit are to be broken up and the base of the pit dug over to a depth of 150mm to improve drainage.
- 3.10.4 The trees to be planted shall be two false acacia trees (*Robinia pseudoacacia*), rootballed and planted at a size of 16 – 18cm girth and a minimum diameter of the rootball of 500mm .
- 3.10.5 The trees are to be brought to the site and lifted off the transport by slings supporting the root ball. The trees will be moved using a mechanical hoist. The stem and branches of the tree are not to be subjected to any of the lifting pressures, although some support can be provided by hand to help balance the tree and to prevent damage to the branches or stem as a result of dropping to the ground or striking an inanimate object.
- 3.10.6 The trees are to be lowered gently into the tree pits, ensuring that they are as central to the pit as possible and that the root-flare remains just above ground level, allowing for some settlement of the soil. If any alteration to soil levels is needed the tree is to be gently lifted out of the pit again using the mechanical hoist and any adjustments made.
- 3.10.7 Once the trees are satisfactorily in position, any hessian, twine or wire cage including any wire circling the base of the stem is to be carefully cut and removed.

- 3.10.8 The trees will be secured using a 'Platypus' underground rootball fixing system with three anchors and wires or straps lain over the top of the root ball to hold it in place. Care is to be taken to place the wires or straps as shallowly as possible with only a light covering of soil or mulch applied on top, in order to avoid the natural root flare of the tree being buried and the tree being planted too deep.
- 3.10.9 The pits will then be backfilled using a load bearing structural soil such as ArborRaft soil to just below the top of the planting pit, leaving the root collar exposed.
- 3.10.10 The surface shall then be covered by the geocellular units of the interlocking ArborRaft system. The cells can then be covered with the final (permeable) hard surfacing layer, for example brick pavers.



ArborRaft soil is a bespoke tree planting medium designed specifically for tree pits.



The surface of the tree pit is first covered by the ArborRaft cellular grid



The final finish can be created with a variety of surfaces provided they are porous

4.0 Post construction

4.1 Final removal of tree protective fencing

- 4.1.1 Following the conclusion of all construction operations, site huts scaffolding, and protective fencing and ground protection measures will be removed to allow for landscaping operations to take place.
- 4.1.2 Great care is needed at this stage from ground work contractors to continue to observe tree protection requirements. No machines are to be used within rpa's which specifically includes rotovators and all new planting and soil level variations must be agreed and supervised by the arboriculturist.

Signatures:

I confirm that I have attended a pre-application site meeting with the contractors and have gone through the requirements of the Arboricultural Method Statement and that a copy is available in the site office.

Arboricultural Consultant

I confirm that I have attended a pre-application site meeting with the arboricultural consultant and that I am responsible for the correct procedures being followed in accordance with the Arboricultural Method Statement and that a copy is available in the site office.

Site Manager/Foreman

Contact details:

Simon Hawkins – Arboricultural Consultant 07784 915 944

Architects – Cristopher James Architecture 01344 513514

London Borough of Hillingdon Council Offices 01895 250574

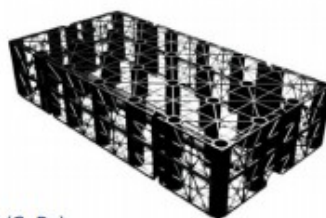
Appendix 4

ArborRaft by Green Tek Solutions



gt ArborRaft Sytem 150mm

**Pre-formed Geocellular Sub-Base Replacement Unit
Attention/infiltration System**



Material Element	Polypropylene (CoPo)															
Weight per unit	Value 3.28	Unit kg														
Dimensions																
Length	708	mm														
Width	354	mm														
Height	150	mm														
Short Term Compressive Length																
Vertical	715	kN/m2														
Lateral	156	kN/m2														
Short Term Deflection Length																
Vertical	1mm per 126 kN/m2	mm/kN/m2														
Lateral	1mm per 15 kN/m2	mm/kN/m2														
Ultimate Tensile Strength of a Single Joint	42,4	kN/m2														
Tensile Strength of a Single Joint at 1% Secant Modulus	18,8	kN/m2														
Hydraulic Performance																
3 units wide, 1 unit deep (1,06m x 0,15m) free discharge	<table><tr><td>Gradient (%)</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td>Flow rate (l/m/s)</td><td>8</td><td>13</td><td>15</td><td>17</td><td>19</td><td>21</td></tr></table>	Gradient (%)	0	1	2	3	4	5	Flow rate (l/m/s)	8	13	15	17	19	21	
Gradient (%)	0	1	2	3	4	5										
Flow rate (l/m/s)	8	13	15	17	19	21										
Volumetric Void Ratio	95%															
Average Effective Perforated Surface Area	52%															



Appendix 5

Qualifications and experience

- I am Simon Hawkins, proprietor of Merewood Arboricultural Consultancy Services.
- I hold the National Diploma in Arboriculture which I attained in 1987. I have studied and practised Arboriculture for over 40 years, during which time I have been involved with both the private and public sector.
- I hold professional member status of the Arboricultural Association (M. Arbor A.), recognised as a higher vocational level within the industry. I am committed to undertaking continuous professional development in order to maintain my knowledge and skill set at the highest modern levels.
- I have undertaken an intensive course in the principles and application of VTA Visual Tree Assessment. I have been assessed and found to have attained the advanced level of technical competence of a VTA Practitioner with Elite Training.
- I hold the LANTRA award for professional tree inspections
- I have over 18 years' experience working in the public sector, during which time I have dealt with all aspects of trees and development in the town planning context, within the inner city; in a greater London Borough; and in the Green Belt. Typically, I have worked with planners, developers, architects and other professionals in the construction industry in which I provide advice and assistance in dealing with arboricultural matters.
- I have appeared at numerous appeals, informal hearings and public enquiries to make formal representations. I have also appeared as an expert witness in court with regard to breaches of Tree Preservations Orders.