



Report No: LTM0502.MS.01

Date: 11/05/2022

Project: 13 Maple Avenue, Chorlton-cum-Hardy, M21 8BD

BS 5837:2012 Method Statement

Inspection Record.

Date of Inspection	Surveyor
21/04/2022	Matthew Lally. FdSc MArborA

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1.0 Discussion

- 1.1 The majority of the root system of a tree is in the surface 600mm of the soil extending radially for distances frequently in excess of the trees height. Beyond the main structural roots (close to the base of the trunk), the root system rapidly sub-divides into smaller diameter roots: off this main system, a mass of fine roots develops.
- 1.2 The shape of the main structural roots develops in response to the need for the tree to have physical stability. Beyond these major roots, root growth and development is influenced by the availability of water and nutrients. Unless conditions are uniform around the tree, which would be unusual, the extent of the root system will be very irregular and difficult to predict. It will not generally show the symmetry seen in the branch system.
- 1.3 The parts of the root system, which are active in water and nutrient uptake, are very fine, typically less than 0.5mm diameter. They are short lived, developing in response to the needs of the tree, with the majority dying each winter. It is *essential* that conditions in the soil remain conducive to the healthy growth of these fine roots so that the water and nutrients necessary for healthy tree growth can be absorbed.
- 1.4 All parts of the root system, but especially the fine roots, are vulnerable to damage. Once they are damaged, water and nutrient uptake will be restricted until new roots have regenerated. Vigorous young trees will be capable of rapid regeneration, but over mature trees will respond slowly, *if at all*.
- 1.5 In order to live and grow, roots need oxygen from the soil. Respiration by the roots and other soil organisms depletes this oxygen and increases carbon dioxide levels in the soil; a correct balance of these gases is normally maintained by diffusion between the soil and the atmosphere. Anything, which disturbs this balance, will affect the condition of the root system.
- 1.6 The factors that most commonly affect this diffusion adversely, and therefore damage roots, are the following: -
 - a) Compaction of the ground, which reduces the space between soil particles. This is particularly important on clay soils. A single passage by heavy equipment on clay soils or storage of heavy materials can cause significant damage.
 - b) Changing soil levels, even for a few weeks.
 - c) Covering the root area with impervious surfaces.
 - d) A rise in the level of the water table. Roots can tolerate submersion for short periods. But a permanent rise will deplete the soil of oxygen.
- 1.7 Serious damage is often caused during preliminary site works by stripping the topsoil. For this reason, such works should be avoided until protective fencing has been erected.
- 1.8 Excavations in the rooting area can sever roots. As the majority of roots are in the surface 600mm, even shallow excavations can cause damage.
- 1.9 Excavations for foundations, landscaping or service trenches are usually sufficiently deep to sever most of the roots, and it should therefore be assumed that all parts of the root system beyond the excavation would no longer serve the tree.

- 1.10 Excavation or soil stripping which sever or damage the roots may impair the stability of the tree and make it dangerous.

2.0 Method Statement

Before any form of development commences on the site the following works should be undertaken: -

2.1 Tree Works

Tree No.	Species	Proposed Works to Facilitate Development.
T1	Birch	No Action
T2#	Hawthorn	No Action
T3#	Rowan	No Action
T4	Lime	No Action
T5#	Lime	No Action

2.2 Protective Fencing

- 2.2.1 All fencing used on the site should fully comply with BS 5837:2012 (Trees in Relation to Construction – Recommendations).
- 2.2.2 The fencing should be strong and suitable for local conditions. It should also take into account the degree of construction activity on the site.
- 2.2.3 The fencing should be at least 2.3m in height and should be erected with both a vertical and horizontal scaffolding framework capable of withstanding impact, with vertical tubes spaced at a maximum of 3 m. This should support weldmesh panels which should be securely fixed with wire or scaffold clamps.
- 2.2.4 Notices should also be erected on the fencing stating, 'Protected Area - No operations within fenced area'.
- 2.2.5 The positioning of the protective fencing is also very important and should be erected in the proposed location identified in Appendix One. Once the fence has been erected it should never be crossed and particular care should be taken not to store any materials or soil within the protected area.

2.3 Additional Precautions Outside Fenced Areas

- 2.3.1 Oil, bitumen, cement or other material likely to cause damage to the tree will not be stacked or discharged within 10m of the trees stem or within the protective area. Also, materials in general will not be stacked or discharged within the exclusion zone.
- 2.3.2 Concrete mixing and washing will not be carried out within 10m of any retained trees.

- 2.3.3 Fires will not be lit beneath the foliage or in a position where the flames could extend to within 5m of the foliage, branches or trunk. If the fire is large, then this may necessitate a distance of at least 20m.
- 2.3.4 Trees that are to be retained will not be used as anchorage for equipment.
- 2.3.5 Notice boards, telephone cables, or other services will not be attached to any part of the retained tree.
- 2.3.6 Care should be taken when using cranes or other equipment near the canopy of the retained trees. Also, any trees to be felled in proximity to the retained trees should be done so with particular care.

2.4 Supervised Root Pruning and Excavation

- 2.4.1 As part of the development will encroach into the RPA of T4 & T5#, supervised root pruning and excavation will be required to ensure the long-term retention of wellbeing of these trees is not adversely affected. The following point MUST be adhered to:
 - Excavation must be carried out using hand tools to avoid direct damage to the bark of the roots. It may be possible in some instances to use specialised equipment such as high air pressure machinery to excavate the soil with minimal disturbance to roots.
 - Exposed roots will be wrapped in dry, clean Hessian. In hot or dry weather, the hessian should be kept moist. The hessian must be removed before backfilling.
 - Roots less than 25mm diameter may be pruned back, preferably to a growing point. A sharp cutting tool such as bypass secateurs or a handsaw should be used to leave the smallest wound possible. Roots greater than 25mm in diameter should be retained wherever possible.
 - Root pruning should be carried out under the supervision of the Arboricultural Consultant.
- Backfilling of any excavation must be carried out by hand to avoid direct root damage or compaction, where possible. Builder sand must not be used in the backfill material.

2.5 Ground Protection (Special Measures)

- 2.5.1 The dimensions of the ground protection is outlined in appendix one, with a possible design shown in appendix three of this document.
- 2.5.2 For the use of pedestrian-operated plant up to a gross weight of 2 t, interlinked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane can be used as ground protection. Heavier plant will require an engineered design solution based on an arboriculturalist advice.

2.6 Uplift and Relaying of Hardstanding within RPA of T1, T4, & T5#

2.6.1 During the uplift & re-laying of the existing hardstanding area within the RPA of T1, T4, & T5#, all excavation within the RPA will be limited to the existing hard standing layer only and work will be undertaken with the smallest possible machine that can undertake the task and will be supervised by an arboricultural consultant. (see appendix four)

2.7 Pre-commencement Site meeting

2.7.1 Prior to commencement of site works, a meeting onsite must take place including the site manager and an arboricultural consultant. This meeting will allow further discussion of the programme of works, tree protective measures, locations of areas for storage/site organisation and the agreement of any changes to the method statement that may be required which will be formally updated and approved as required.

2.8 Summary of Methodology for the Protection of the Trees

- 1) Pre commencement site meeting
- 2) Site briefing for personnel
- 3) Installation of protective fencing & ground protection
- 4) Adjustment of protective fencing and ground protection as required
- 5) Supervised excavation & root pruning
- 6) Implementation of development
- 7) Adjustment of protective fencing and ground protection as required
- 8) Completion of development works
- 9) Completion signed off
- 10) Removal of protective fencing & any ground protection
- 11) Soft landscaping works

2.9 Site Briefing

- 2.9.1 The site manager is responsible for ensuring that all personnel are made fully aware of the constraints posed by the retained trees on site and that there are measures in place to protect these trees, this includes having full access to the Arboricultural Method Statement and Tree Protection Plan (TPP).

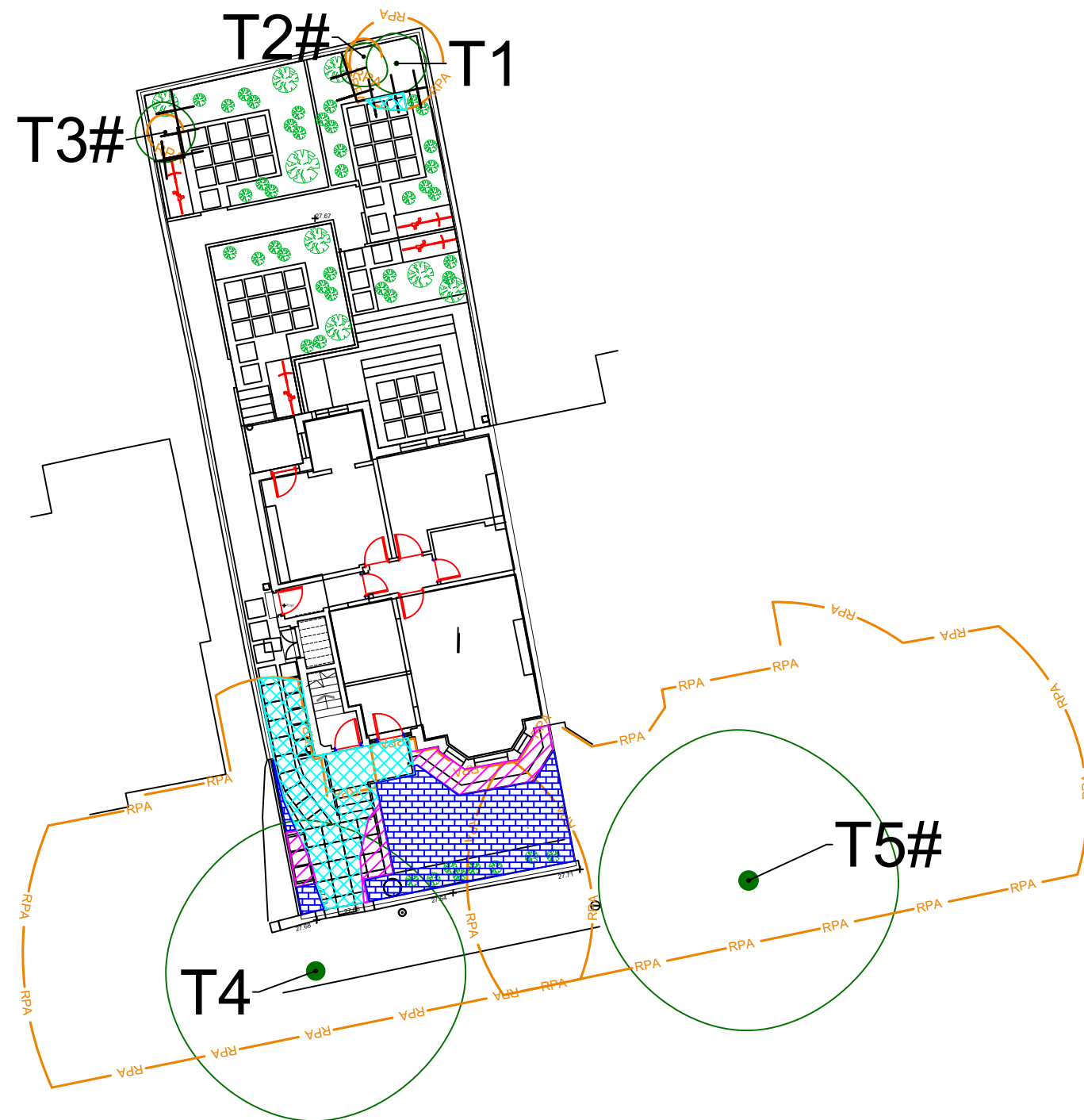
2.10 Site Monitoring

- 2.10.1 An auditable system of site monitoring shall be established to guide contractors on site, ensure that tree protection measures are implemented and adhered to, and also to demonstrate to the LPA that any planning conditions have been met.
- 2.10.2 This includes site visits by an arboricultural consultant (as appointed by the developer) to confirm the correct installation of the protective fencing, to oversee sensitive elements of works within the RPA of retained trees and sign off the site when the works are complete before fencing can be removed.
- 2.10.3 The frequency of site monitoring will be discussed with the LPA's tree officer and agreed in writing before any works begin onsite. A schedule of site monitoring is included in appendix four.

Appendix One

Tree Plan

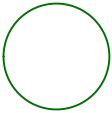
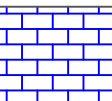
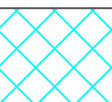
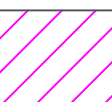




Do not scale this drawing (printed or electronic version).
Contractors must check all dimensions from site
This drawing is for use on this site only and should be used in conjunction with all relevant consultants drawings..

LEGEND



-  Retained Trees
-  Root Protection Areas
-  Protective Fencing(Metal)
-  Ground Protection
-  Hand Dig into Existing Hardstanding Layer Only
-  Supervised Root Pruning & Excavation
- Position estimated on site



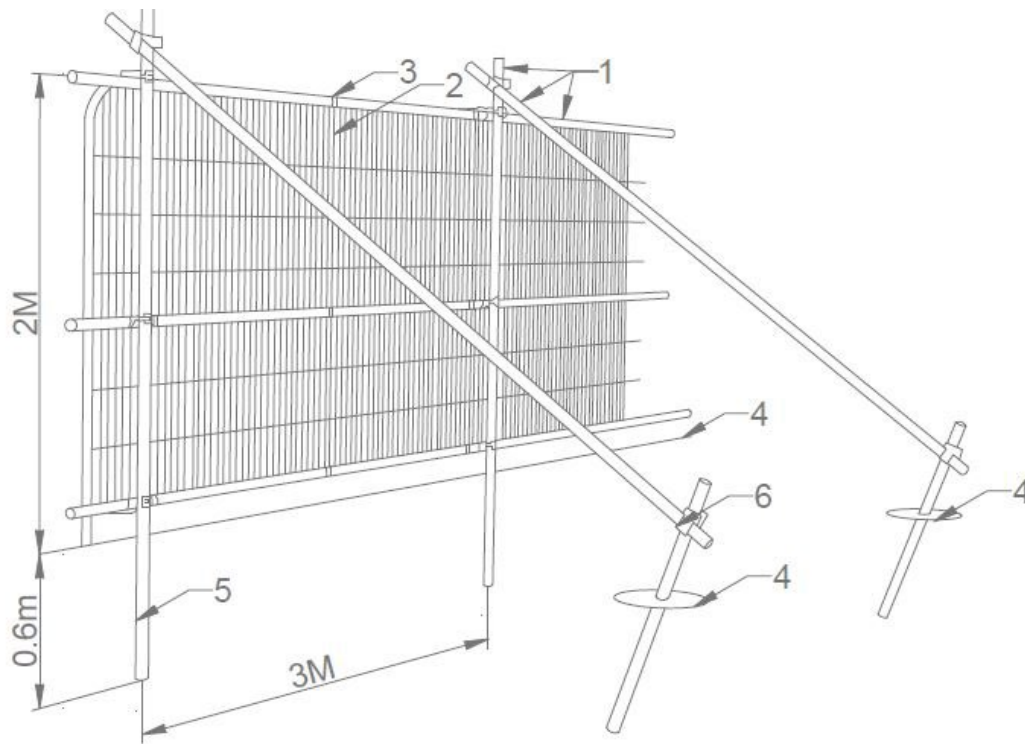
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Job:	LTM0502.AIA.01		
Address	13 Maple Ave, Chorlton-cum-Hardy, Manchester M21 8BD		
Client:	Armistead Property Ltd		
Drawing Number:	LTM0502.TPP.01		
Drawn by:	Matthew Lally		
TREE PROTECTION PLAN			

Appendix Two

Tree Protection Fencing



Tree Protection Fencing (BS5837: 2012)



Key

- 1 Standard scaffold poles
- 2 Heavy gauge 2m tall galvanised tube and welded mesh infill panels
- 3 Panels secured to upright and cross-members with wire ties
- 4 Ground level
- 5 Uprights driven into the ground until secure (minimum depth 0.6m)
- 6 Standard scaffold clamps

Protective fencing Notice to attached to fencing

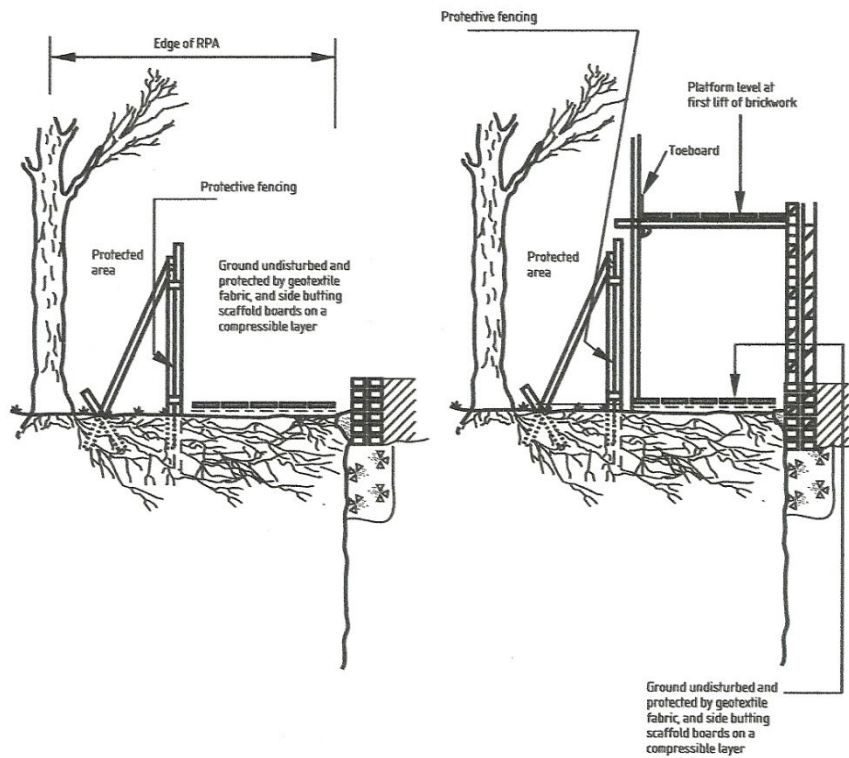


Appendix Three

Special Measures Area



Special Measures Area (pedestrian)



Ground protection and scaffolding within the RPA (taken from BS5837:2005)

Interlinked plastic boards with a layer of chip can be used as ground protection.

The below picture courtesy of Ground Guards (<http://www.ground-guards.co.uk/solutions/tree-root-protection/>) illustrates a possible method.



Appendix Four

Auditable Site Monitoring



As well as regular site monitoring visits the below Adhoc visit will be required before any development works can be started onsite.

Task before development can start	Date	Attendees	Signed	Name of signatory
Pre-site meeting*				
Installation of protective fencing & ground protection*				
Supervised excavation and Root Pruning*				

*. Arboricultural consultant must be present.

Site monitoring will include a site visit by an arboricultural consultant. This is normally undertaken every 4 weeks; however, this is to be agreed with the tree officer. Each site visit will include an inspection of the protective fencing, inspection of areas for storage and ensure that all elements within the method statement are adhered to. Photographic evidence will be taken, and a small, simple site supervision report will be created for each site visit and submitted to the client which will outline if/where they are falling short of the requirements described in the method statement and how to ensure continued conformance.

Date	Arboricultural Consultant Name	Company	Site up to standards expected Y/N	Recommendations