Arboricultural Method Statement, Impact Assessment and Tree Protection Plan in Accordance with BS 5837:2012

8 ISABEL HILL CLOSE, HAMPTON, TW12 2FE

REVISION 1

SouthOaks Arboricultural Consultancy

Tel 07460 879833

www.surreytreeconsultant.co.uk
elliott@surreytreeconsultant.co.uk

Contents

1. Executive Summary

1.1

The proposal is for an extension and alterations to the existing dwelling to include a new subterranean extension at 8 Isabel Hill Close, Hampton, TW12 2FE.

Arboricultural Survey

1.2

The site was inspected by Elliott Foulkes (Dip Arb L4 ABC, TechArborA) on Tuesday 2nd May 2023. The property is within a Conservation Area (CA12 Hampton Village) according to London Borough of Richmond upon Thames online records. The street scene is residential in nature and is characterised by residential dwellings.

1.3

6 individual trees were classified within the 'B' category due to their combination of conservational, amenity value and maturity. 10 individual / group of trees were classified within the 'C' category.

Tree Protection Plan

1.4

If precautions are followed as per the method statement included within this report there will be minimal impact on the trees rooting system. Approximately only 3% of T3 and T4's RPA is to be excavated and there is reason to believe the area lends itself to a poor rooting environment due to the existing underground garage and roof terrace built in 2001, the existing impermeable hard standing path and the Victorian underground pipe running beneath this path. It is proposed a trench be dug under supervision of an arboricultural consultant to determine if there are any significant roots. If significant roots are found the landscape design will need to be reassessed and an alternative design will need to be implemented that requires no soil level changes.

1.5

The proposed development falls within the RPA of two trees, therefore supervised soil level changes must be implemented to avoid potential root damage to the trees. A trench is to be dug with use of an Airspade or hand tools within the RPA of T3 and T4, this must be completed under supervision of an arboricultural consultant. A method statement has been included within this report to outline best practice in regard this. To further protect the trees protection fencing and ground protection must be installed within RPA's.

2. Introduction

2.1 Instruction

2.1.1

SouthOaks are instructed to visit and survey the trees in accordance with BS5837:2012. This includes trees that are within influencing distance of the tree Root Protection Area (RPA), and trees to be retained that may be affected by potential loss or damage within influencing distance of 8 Isabel Hill Close, Hampton, TW12 2FE.

2.2 Background Information

2.2.1

We have been provided with a block plan for this site with precise tree locations.

2.2.2

The principle reason for this investigation is to provide professional arboricultural advice to assist in tree retention with nearby construction works. This report includes a Tree Protection Plan in accordance with BS5837:2012.

2.2.3

Care has been taken to obtain all information from reliable sources, and all data has been verified where possible. However no guarantee can be given of the accuracy of information provided by others.

2.3 Plans and documents

2.3.1

A survey and map included in this report will include all tree numbers, specifically where it has not been possible to tag trees due to access. This document will notify of any additional trees not included in the topographical survey.

2.3.2

We have no connections with any of the parties involved in this site that could influence the opinions expressed in this report.

2.3.3

Planning permission overrides a Tree Preservation Order and Conservation Area.

3. The Site

3.1. Site Visit

3.1.1

The site was inspected by Elliott Foulkes (Dip Arb L4 ABC, TechArborA) Tuesday 2nd May 2023, weather conditions provided good visibility of the trees. Access was not granted for neighbouring properties.

3.1.2

The information contained in this report covers the trees inspected and reflects the tree condition and site conditions at the time of inspection. Measurements were taken using a diameter tape, digital laser measure and digital clinometer.

3.1.3

The trees were inspected from ground level only, no climbing inspections were undertaken.

3.2. Site Description
3.2.1

The property is within a Conservation Area (CA12 Hampton Village) according to London Borough of Richmond upon Thames online records. The street scene is residential in nature and is characterised by residential dwellings.

3.3. The soil
3.3.1

Although believed to be loamy soil (www.landis.org.uk), we are unable to provide exact details of soil structure. If the soil is shrinkable the trees and other vegetation have the potential to cause indirect damage to structures. If there is a requirement to assess subsidence damage further research from a soil engineer would be advised.

4. Tree Survey Parameters
4.1 Parameters
4.1.1

Trees growing as groups have been identified and assessed as such where we have determined it appropriate.

4.1.2

Trees have been categorized using the criteria shown in table 1 in accordance with BS5837:2012. This is used to identify the quality and value of the existing tree stock allowing informed decisions to be made concerning which trees should be removed or retained in the event of development. BS5837 requires retention of better quality trees where possible (category A and B).

4.1.3

Trees that require immediate attention, either due to serious hazard to life or property, or trees affected by pests or pathogens that may cause widespread or serious damage unless controlled or eradicated should be brought to the attention of the relevant person or organisation (including statutory authorities where applicable).

5. Tree Survey and analysis

5.1 Species

Common name	Scientific name
Birch	*Betula* sp.
Cypress	*Cupressus* sp.
Holly	*Ilex* sp.
Holm oak	*Quercus* sp.
Horse chestnut	*Aesculus* sp.
Lime	*Tilia* sp.
Palm	*Arecaceae* sp.
Sycamore	*Acer* sp.

5.2 Distribution of categories

BS5837 Category	Number of trees	Percent of trees
B1	6	37.5%
C1	7	43.75%
C2	3	18.75%
Total	**16**	**100%**

5.3 Key to survey

5.3.1

Ref – Reference number allocated to the tree or group of trees:
T = Single tree
G= Group of trees

DBH – Diameter at Breast Height. The tree diameter measured at 1.5 meters above the ground. Where the level of the ground is uneven measurements are taken above the upper side of the slope.

RPA – Root Protection Area. RPA's for single stem trees 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 two calculations are formulated in accordance with BS5837:2012.

Branch spread – The longest branches measured to the North, East, South and West

Height of first branch – First significant branch from ground level measured from the main stem

Height of canopy - First significant branch from ground level measured from the branch tip

ERC – Estimated Remaining Contribution.
0-10 = Unsuitable for retaining
20+ = Short term retention potential
30+ = Mid to long term retention potential
40+ = Long term retention potential

Age – Categorised into the following:
Y = Young
SM = Semi-mature
EM = Early-mature
M = Mature
OM = Over-mature

BS5837:2012 Table 1 – Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U 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	• Trees that have a serious, irremediable, structural defect, such 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 safety 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 it might be desirable to preserve; see [BS5837:2012]* ***4.5.7****.*			
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
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; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	
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 are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit 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 greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	

				Branch Spread (metres)										
Ref	Height (metres)	Common name	Stem Diameter (mm)	North	East	South	West	Height of first branch (metres)	Height of canopy (metres)	Age	Remaining life span	General observations	Category	RPA (metres)
T1	12	Sycamore	540	4	4	4	4	2	3	M	30+	Historical flush cuts, root damage, dead wood	B1	6.5
T2	12	Holm oak	670	5	4	5	2	4	2	M	30+	Callused wounds, minor dead wood	B1	8.0
T3	16	Horse chestnut	650	4	4	4	4	3	2	M	30+	Historical flush cuts, basal growth	B1	7.8
T4	16	Horse chestnut	940	5	4	6	4	3	2	M	30+	Large diameter callused wound on main stem, minor dead wood	B1	11.3
T5	17	Lime	765	4	3	5	4	4	2.5	M	30+	Previously reduced, dead wood	B1	9.2
T6	13	Sycamore	460	5	3	5	3	1.5	2	M	30+	Dead wood	B1	5.5
G7	8	Holly	250	2	2	2	2	2	2	SM	20+	Ivy clad, low amenity, multi-stemmed	C2	3.0
T8	13	Sycamore	700	3	3	3	3	4	6	M	20+	Ivy clad, previously heavily reduced, dead wood	C1	8.4
T9	6	Holm oak	240	2	2	2	2	2.5	1.5	Y	20+	Previously crown raised, low amenity	C1	2.9
G10	5	Cypress	150	1	1	1	1	0.5	0.5	Y	20+	Low amenity value, dead wood	C2	1.8
G11	6	Holm oak	150	1	1	1	1	1.5	2	Y	20+	Low amenity value, self-seeded	C2	1.8
T12	8	Sycamore	300	4	4	4	4	2.5	2	SM	20+	No notable observations	C1	3.6
T13	10	Birch	120	2	2	2	2	4	4	Y	20+	No notable observations	C1	1.4
T14	9	Holm oak	250	2	2	2	2	2	2	Y	20+	Leaning, dead wood, low amenity value	C1	3.0
T15	8	Holm oak	250	2	2	3	2	2	2	Y	20+	Leaning, dead wood, low amenity value	C1	3.0
T16	3	Palm	120	1	1	1	1	1.5	2	Y	20+	No notable observations, low amenity value	C1	1.4

6. Arboricultural Impact Assessment

6.1 Introduction

6.1.1

It is our duty to evaluate and provide a methodology on the direct and indirect effects of the proposed design on trees above and below ground implementing constraints where necessary and recommend mitigation strategies on and adjacent to the site in accordance to BS5837:2012.

6.1.2

Site access for construction traffic is from the front of the property via Isabel Hill Close or to the rear of the property via Hill House Drive.

6.2 Observations

Trees selected for removal

6.2.1

Ref	Description of tree work
G10	Fell to ground level and remove stumps
T13	Fell to ground level and remove stumps
T14	Fell to ground level and remove stumps
T15	Fell to ground level and remove stumps
T16	Fell to ground level and remove stumps

Loss of trees

6.2.2

If necessary any small trees with a diameter of below 75mm diameter may be felled to accommodate for the proposed development and improve site access. G10, T13, T14, T15 and T16 have been selected for removal by the developer. They are all unremarkable young trees with very limited merit. G10 will eventually compete with the more notable mature trees that are viewable from Upper Sunbury Road.

Tree surgery

6.2.3

Tree work may be required prior to the commencement to allow for the construction and to avoid damage during construction by machinery or vehicles. All work should be carried out by a competent and fully qualified arborist with liability insurance in accordance with British Standard 3998:2010 “Recommendations for Tree Work”.

Ref	Description of tree work	Justification
N/A	N/A	N/A

Areas designated for structural landscaping

6.2.4

We have been made aware of plans for alterations of soil levels within RPA’s of T3 and T4.

Above ground constraints

6.2.5

Delivery of building materials should be off-loaded on existing hard standing and away from the Root Protection Area (RPA) of the trees. Any movement of materials within the RPA are to be transported by foot on existing hard standing areas or where sufficient ground protection has been installed. Equipment using hydraulic arms need to stay out of striking distance of trees and their branches.

Root Protection Area (RPA)

6.2.6

Access within the root protection area must be confined to existing hard standing. It is not permitted to dig within the RPA’s unless it is outlined in this report and supervised by a competent arboricultural consultant. Where digging is required within the RPA it must be completed by use of hand tools and gentle soil displacement methods (e.g. air spade) that avoid potential damage to tree roots, a professional arboriculturist must be present to supervise this type of work. Underground utility services are not to be installed within the RPA.

Detailed impact appraisal

6.2.7

The proposed landscape soil level changes falls within the RPA of the following trees. The extent the soil level changes impede into the RPA's can be summarised as follows:

Tree reference	Rpa of tree (m^2)	Proposed area for soil excavation (m^2)	% of area to be excavated within RPA
T3	265.9	7	2.6%
T4	401.15	12	3.0%

Impact Summary

6.2.8

If precautions are followed as per the method statement included within this report there will be minimal impact on the trees rooting system. Approximately only 3% of T3 and T4's RPA is to be excavated and there is reason to believe the area lends itself to a poor rooting environment due to the existing underground garage and roof terrace built in 2001, the existing impermeable hard standing path and the Victorian underground pipe running beneath this path. It is proposed a trench be dug under supervision of an arboricultural consultant to determine if there are any significant roots. If significant roots are found the landscape design will need to be reassessed and an alternative design will need to be implemented that requires no soil level changes.

Issues to be addressed by an arboricultural method statement

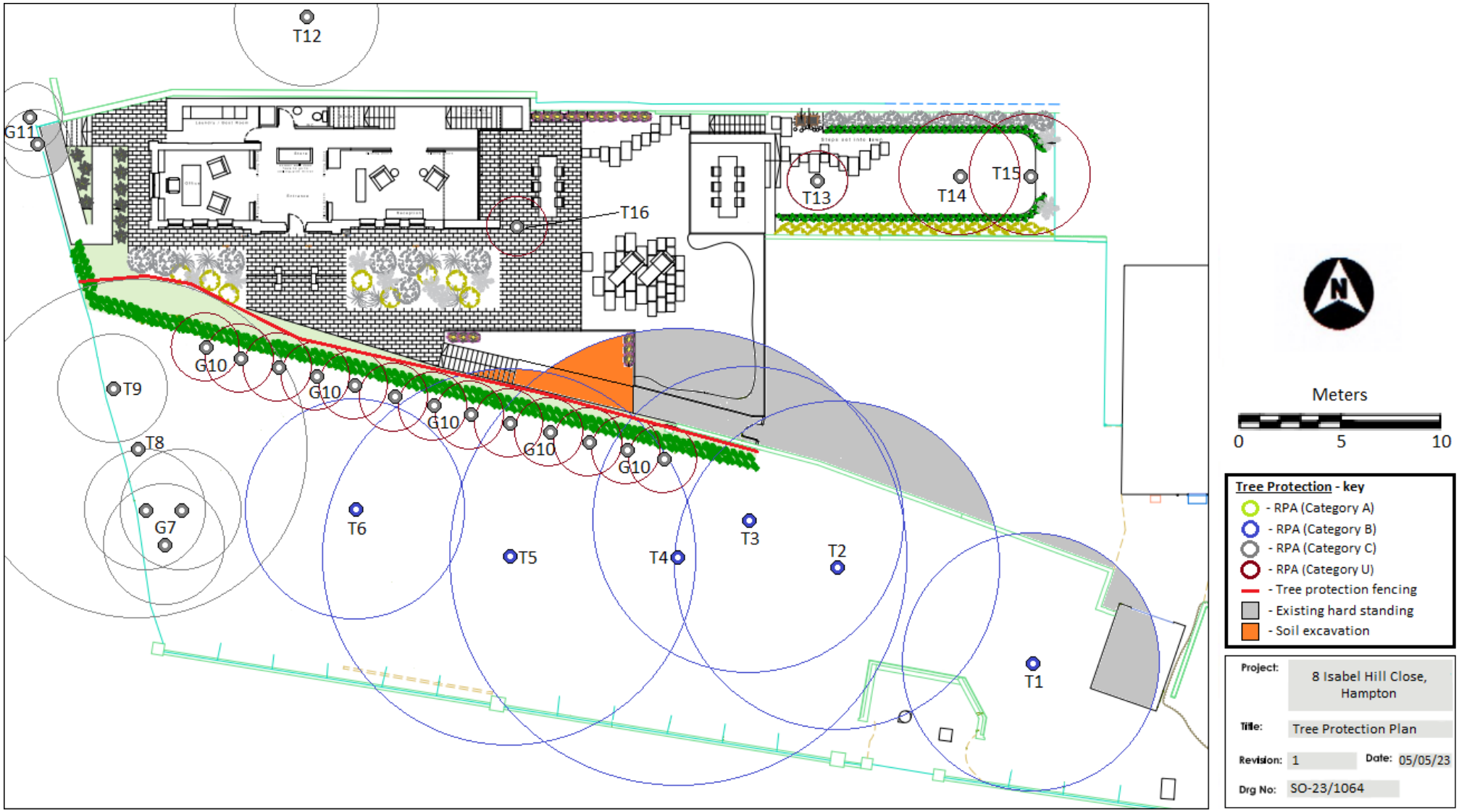
6.2.9

Method
Ground protection
Tree protection fencing
Trial trench

6.3 Conclusion

6.3.1

The proposed development falls within the RPA of two trees, therefore supervised soil level changes must be implemented to avoid potential root damage to the trees. A trench is to be dug with use of an Airspade or hand tools within the RPA of T3 and T4, this must be completed under supervision of an arboricultural consultant. A method statement has been included within this report to outline best practice in regard this. To further protect the trees protection fencing and ground protection must be installed within RPA's.


T12
G11
T16
T13
T14
T15
G10
G10
G10
G10
G10
T9
T8
G7
T6
T5
T4
T3
T2
T1
N
Meters
0
5
10
Tree Protection - key
- RPA (Category A)
- RPA (Category B)
- RPA (Category C)
- RPA (Category U)
- Tree protection fencing
- Existing hard standing
- Soil excavation
Project:
8 Isabel Hill Close, Hampton
Title:
Tree Protection Plan
Revision:
1
Date:
05/05/23
Drg No:
SO-23/1064

7. Tree Protection Plan

7.1 Introduction

Circulation

7.1.1

It is vital that all parties involved in the planning of the development are privy to the information of this report. Copies of the report should be circulated to all individuals as soon as it is made available.

Accountabilities

7.1.2

Tree protection measures will be implemented prior to any works on site and retained until completion of the development with approval of the arboricultural consultant.

7.1.3

It is the responsibility of the client and agent to hand a copy of this report to the site manager and to ensure that the compliance of the tree protection scheme is followed. The client and agent must make sure the site manager is updated on any authorised changes to this document. They must also ensure all planning conditions in relation to trees, underground works, services and landscaping have been approved before work begins.

7.1.4

It is the responsibility of the client and site manager to make available this report to personnel prior to and during site construction. Personnel must be briefed on the tree protection plan and arboricultural method statement and its importance. The client and site manager must make sure that personnel are updated on any authorised changes to this document.

7.1.5

Compliance of this document and any variations of this document is compulsory.

Schedule of works

7.1.6

Arboricultural work and tree protection installation should be carried out in the following order. Any deviation from this order should be approved by the Local Planning Authority:

1. Tree surgery to be complete by a fully insured and competent tree surgeon.
2. Tree Protection fencing to be installed by a competent contractor and supervised by a competent arboricultural consultant.
3. Ground protection to be installed by a competent contractor and supervised by a competent arboricultural consultant.
4. The excavation of soil must be supervised and recorded by a competent arboricultural consultant.
5. Ground protection to be removed post construction after approval of a competent arboricultural consultant.
6. Tree protection fencing to be removed post construction after approval of a competent arboricultural consultant.
7. Construction and arboricultural site monitoring by a competent arboricultural consultant at agreed intervals.

7.1.7

Site prohibitions

1. Contractor's car parking on site is confined to existing hard standing or outside of any RPA.
2. Root Protection Areas are no-dig zones unless supervised by a competent arboricultural consultant.
3. Fires are prohibited on site.
4. Storing of materials, spoil, fuel and mixing of cement and concrete must be confined to hard standing in a zone outside of the Root Protection Areas. The slope of the ground must be taken into account to avoid harmful liquid spills to protected areas.
5. Felling, cutting, or damaging any retained trees is not allowed. This includes attaching signs or using trees as structural support
6. Equipment using hydraulic arms stay out of striking distance of trees and their branches

Compliance

7.1.8

Non-compliance of the tree protection plan means work must be halted immediately and instantly reported to the site manager. This will then need to be reported to the Local Planning Authority tree officer and SouthOaks.

7.2 Arboricultural Method Statement

Ground protection

7.2.1

Where construction working has been allowed within the RPA existing hard surfacing should be retained to act as temporary ground protection. If no hard surfacing is present at the time of construction new temporary ground protection that is capable of supporting any traffic entering the site should be installed prior to the work starting.

The primary method of protecting the ground when erecting scaffolding within RPA's is by installing geotextile fabric and side butting scaffolding boards on a compressible layer such as bark chippings on a geotextile membrane.

7.2.2

Ground protection must comprise of the following:

1. Pedestrian movements only – A suspended walkway consisting of single thickness scaffold boards on top of either a driven scaffold frame, or on top of a compression resistant layer (e.g. woodchip).
2. Plant up to a weight of 2 ton – Inter-linked ground protection boards placed on top of a compression resistant layer (e.g. woodchip), laid onto a geotextile membrane.
3. Construction traffic exceeding 2 ton – Proprietary systems or pre-cast reinforced concrete slabs or other engineering specification in conjunction with arboricultural advice. .

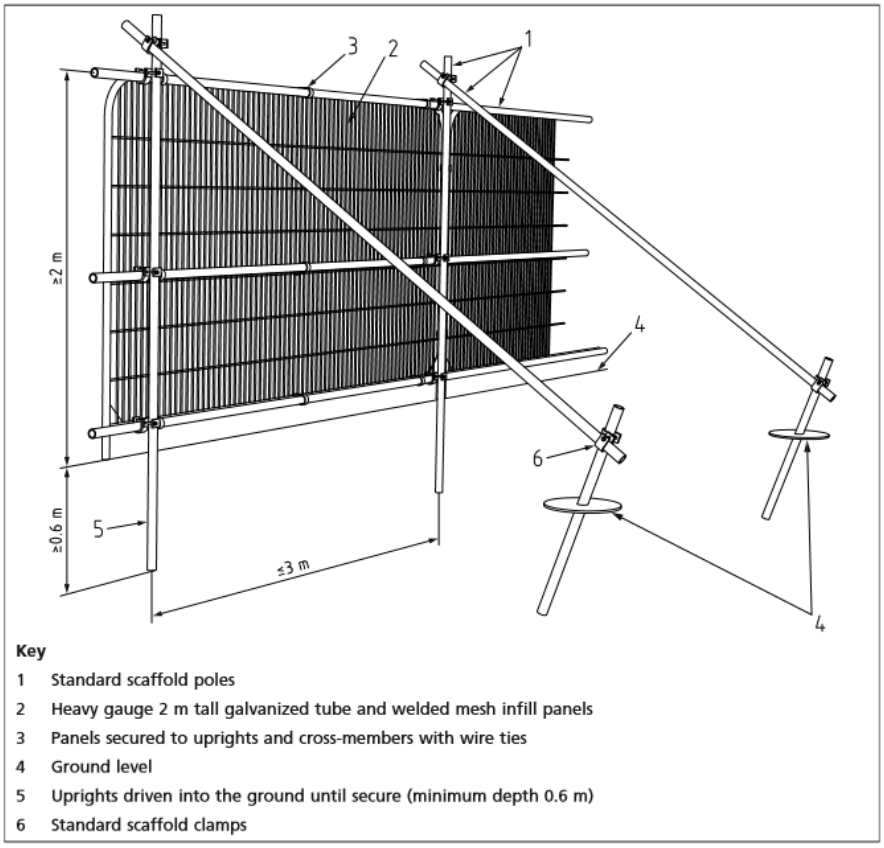
7.2.3

Tree protection fencing is to be installed according to the schedule of works before any materials or machinery are brought onto the site. It will be confirmed by a competent arboricultural consultant that the fencing has been correctly set out on site prior to the commencement of any other operations. Fencing must be fit for purpose of excluding construction activity around trees, they must be maintained to remain structurally sound.

7.2.4

The default barrier specification should consist of vertical and horizontal scaffold framework, the verticals should be spaced at a maximum of 3 meters apart (see figure 1) with mesh panels welded onto the framework. The uprights driven into the ground should not make contact with structural roots or underground services.

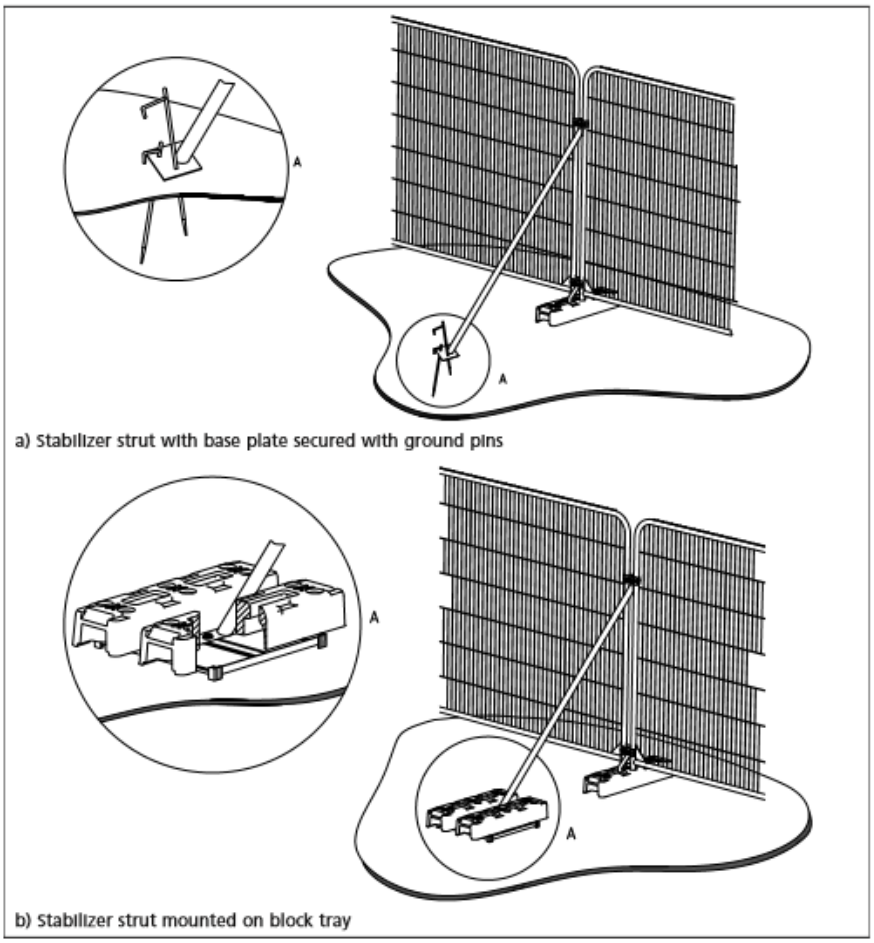
Figure 1 – Default specification for protective barrier



Key

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

Figure 2


A
A
a) Stabilizer strut with base plate secured with ground pins
A
A
b) Stabilizer strut mounted on block tray

7.2.3

Soil level changes within the Root Protection Area

It has been proposed that a trench be dug to determine if roots are situated within the location of the proposed development to accommodate the proposed landscape design. The trench will be located as indicated on the tree protection plan and will run the depth of the level of 200mm below the intended finished soil level. All work will be undertaken by Airspade or hand dig method. Already loosened soil may be removed using an excavator on appropriate ground protection. Digging around tree roots is a skill and operatives must proceed with caution. Once a root is located it is often necessary to track and 'trace' the roots location.

- Ground protection and tree protection fencing must be installed prior to any excavation of soil.
- A competent arboricultural consultant must be present to supervise works and for him/her to photograph the exposed roots. The images should be high quality showing the roots clearly and also a perspective shot showing the tree relative to the trench. At the end of each day the tree officer will be provided with a short report on the operations accompanied with photographic evidence.
- Roots, whilst exposed, should immediately be wrapped or covered to prevent desiccation and to protect them from rapid temperature changes. Any wrapping should be removed prior to backfilling, which should take place as soon as possible.
- Roots smaller than 25 mm diameter may be pruned back, making a clean cut with a suitable sharp tool (e.g. bypass secateurs or handsaw), except where they occur in clumps. Roots occurring in clumps or of 25 mm diameter and over should be severed only following consultation with an arboriculturist, as such roots might be essential to the tree's health and stability. Any roots exposed during this operation will be cleanly severed using appropriate hand tools (e.g. sanitised hand saws or bypass secateurs), where less than 25mm in diameter. Roots greater than 25mm in diameter will be retained in situ until the required excavation has been completed.
- Any damaged roots should be cleaned and pruned back to an appropriate place.
- Prior to backfilling, retained roots should be surrounded with topsoil or uncompacted sharp sand (builders' sand should not be used because of its high salt content, which is toxic to tree roots), or other loose inert granular fill, before soil or other suitable material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.
- If significant roots are found for the soil level changes it will need to be reassessed and an alternative design that does not require soil level chnages will need to be implemented.
- An impermeable membrane must be used for any concrete to stop any leakage into the soil.

Site monitoring and pre-commencement meeting

7.2.4

An auditable system of arboricultural site monitoring is in place according to the schedule of works. A competent arboricultural consultant should monitor site activity at intervals throughout the project and should extend to arboricultural supervision whenever construction and development activity is to take place within or adjacent to an RPA.

The final details of supervision and the frequency of inspection visits will be agreed at the pre-commencement meeting. The supervision arrangement will be sufficiently flexible to allow the supervision of all sensitive works as they occur.

A pre-commencement site meeting involving the land owner, representative of the Client, arboricultural consultant, contractors and engineers (as appropriate), and relevant LPA officers will be held to ensure that all aspects of the tree protection processes are understood and agreed. The meeting is where the details of the program of tree protection will be agreed and finalised, which will then form the basis of any supervision arrangements between the arboricultural consultant and the developer.