OMC Associates

BSi 5837 Tree Survey for Development

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SITE:	R/O 27 Leighton Road, London, NW5
OUR REF:	1073/CJO/2009
YOUR REF:	
DATE OF REVISION:	20 September 2016

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EXECUTIVE SUMMARY

The proposed development has relatively minor impacts on trees to be retained. It necessitates removal of T4-T7, T9 7 T11. Other than T5 which is a U grade tree, the others are small C grade trees of no amenity value to the conservation area. It is suggested that, due to poor quality and the opportunity to replace with trees of greater life expectancy, T8 & T14 are removed but the report assumes these are to be retained and are protected accordingly. The only requisite excavation within RPAs of trees entails that for posts for fencing within T3's RPAs and porous hardstanding within T8, T14 and T3's RPA. Incursion of the dwelling itself upon RPAs is negligible and does not warrant special foundation design. Details to ensure all activities identified as having a potential impact on trees do not harm them are fully detailed in a method statement and illustrated in a tree protection plan, obviating the need for tree protection conditions. the scheme presents an opportunity to improve the tree population of the conservation area through new planting.

1.0 INTRODUCTION

1.1 Brief

This arboricultural report has been commissioned to support a planning application to build a small house in the garden of No. 27 Leighton Road.

The report provides a tree survey and an arboricultural impact assessment. Additionally it includes an arboricultural method statement and tree protection plan thus obviating the need for any conditions requiring tree protection details.

Recommendations are consistent with the most recently revised version of the British Standard on this subject, “Trees in relation to design, demolition and construction - Recommendations”, BS 5837 (2012).

1.2 Scope of report

This report incorporates an assessment of trees potentially affected by the development, an arboricultural impact assessment demonstrating how they may be affected by the proposed development and an arboricultural method statement providing the details necessary to ensure they are not damaged during construction and a tree protection plan illustrating the method statement.
The report contains the following appendices:

Appendix 1: a tree survey plan of the site as existing showing canopy extents and indicative girth. Both are coloured in the BS 5837 quality category allocated to the tree (See appendix 6);
Appendix 2: a tree constraints plan (TCP) indicating root protection areas (RPAs) of trees to be retained with the proposed scheme superimposed to indicate where and extent of encroachment. A shadow plan may also be shown when deemed relevant;
Appendix 3: a tree protection plan (TPP) clearly illustrating the trees in relation to every aspect of the proposed scheme and every aspect of required protection. Where this is phased, multiple TPPs will be provided for each phase for clarity;
Appendix 4: a default specification for ground protection;
Appendix 5: a default specification for a protective barrier at including notice to place on the barrier;
Appendix 6: a cascade chart explaining tree quality assessment:
Appendix 7: a record of arboricultural supervision and monitoring;
Appendix 8: photographs;
Appendix 9: posters to attach to protection fencing

1.3 Background and Documents

The scheme has been designed following pre-application advice and I am in possession of all drawings associated with the finalised layout.

This report is based on the proposed layouts as detailed in AMA drawing 140-P-004.

1.4 Site Description

The site comprises the end of the long garden to the rear garden of 27 Leighton Road, a listed end of terrace Georgian dwelling. The garden currently extends all the way to meet the gardens of houses on Falkland Road.

Adjacent the western side of the garden is the private road, Maud Wilkes Close, providing vehicular access and parking to a small housing association development constructed 15 years ago. Adjacent the north west corner of the site north is the end of terrace property 30 Maude Wilkes Close that has a windowless, eastern gable wall set back 1.3m from the western boundary of the site where the new dwelling is proposed. The remaining sides abut onto rear gardens.

The garden is mature with a variety of small trees and is secluded by virtue of boundary walls that are covered in vegetation.

1.5 Planning Proposal

It is proposed that a part two storey part single storey dwelling be built at the end of the rear garden to provide a dwelling for the owner's son.

2.0 TREES

2.1 Trees data

Dimensions relating to height, crown spread (at four cardinal points where considered necessary), girth at 1.5m as well as age class, structural and physiological condition and BS 5837 (2012) category are noted.

The inspection assesses the height of the crown and suitability to develop near to it.

This survey does not include a detailed assessment of the health of the tree but clear faults are factored into structural and physiological category

2.2 Trees and the law

We understand that the site is within a Conservation Area but that none of the trees identified within the report are subject of a Tree Preservation Order.

Please note that no works around trees should be carried out without the approval of the Local Planning Authority (since it is likely to incur large fines) unless planning permission has been granted that indisputably necessitates the removal or facing back of any of these trees..

Section 197 of the Town & Country Planning Act 1990 states that it shall be the duty of the local planning authority to ensure whenever it is appropriate, that in granting planning permission, “adequate provision is made, by the imposition of conditions, for the preservation or planting of trees” Even when no specific legal protection exists it may be necessary to obtain a felling license from the Forestry Commission if the volume of timber removed exceeds felling license quotas.

Section 11 of the National Planning Policy Framework adopted in March 2013 “Conserving and enhancing the natural environment” states that, “the planning system should contribute to and enhance the natural and local environment by: protecting and enhancing valued landscapes…… recognising the wider benefits of ecosystem services and minimising impacts on biodiversity”. It also stresses the importance of “protection, enhancement and management of green infrastructure”

The Wildlife & Countryside Act 1981, the Conservation (Natural Habitats etc.) Regulations 1994 and the Countryside & Rights Of Way Act 2000 are all of relevance.

Tree No.	Species	Height (m)	Dia. at 1.5m (mm)	Crown Radius (m) N S E W	Age Class	SULE	Condition Structural	Condition Physiological	Quality Category	Tree-work	Space Below Crown	RPA radius (m)	Comments
T1	*Laburnum* spp. Laburnum	4	110, 120, 130	1 2 1.5 2	M	10-20	Good	Fair	C2	N	N/A	0.7	Multi-stemmed, third party tree; poor form
T2	*Acer pseudoplatanus* Sycamore	13	550~	3 2.5 2.5 2	M	<10	Poor	Poor	U	RA	-	6.6	Poor tree comprising essentially an ivy engulfed pole
T3	*Acer pseudoplatanus* Sycamore	13	600~	3 3 3 2	M	>40	Fair	Poor	C2	N	Y	7.2	Self set tree of poor form and colonised with ivy; some visibility from Maude Wilkes Cl.
T4	*Prunus cerasus* Sour Cherry	5	180	4 3 1 3	M	>40	Good	Fair	C2	RA	-	2.1	Small, established tree
T5	*Prunus cerasus* Sour Cherry	5	240	3.5 3 3 3.5	M	<10	Poor	Poor	U	RA	-	2.3	Small specimen with very sparse crown
T6	*Sambucus racemosa* Elder	4	190	2.5 1 2 1	M	10-20	Fair	Fair	C2	RA	-	2.1	Typically self set shrub/tree
T7	*Prunus cerasus* Sour Cherry	4	300	3 3.5 4 1.5	M	10-20	Poor	Fair	C2	RA	-	3.6	Small, established tree with southerly inclination due to suppression
T8	*Fraxinus excelsior* Ash	10	170	5 0 3 2	M	>40	Fair	Fair	C2	WA or RA	Y	2	Self set tree of relatively poor, asymmetric form; minimal visibility
T9	*Sorbus aucuparia* Rowan	3.5	80	2 1 1 2	YM	10-20	Fair	Fair	C2	RA	-	0.9	Small, poor specimen with lost leader
T10	*Pyrus salicifolia* Pendula Ornamental pear	3	110	1 3 1 0.5	M	20-40	Good	Fair	C2	N	Y	1.3	Small, asymmetric specimen
T11	*Amelanchier laevis* Snowy Mespil	3.5	130	2.5 2 1 2.5	M	20-40	Good	Good	C2	RA	-	0.7	Established, small specimen in good health
T12	*Amelanchier laevis* Snowy Mespil	3	100	1 2.5 0 1.5	M	20-40	Good	Good	C2	N	N/A	0.5	Established, small specimen in good health
T13	*Fraxinus excelsior* Ash	9	230	3.5 3 4 3.5	M	>40	Fair/Poor	Good	C2	R	-	2.7	Self set specimen in god health with shapely, prominent crown and substantial further growth potential; compromised by potentially structurally significant stem distortion at 0.7m due to growth conflict with wall
T14	*Acer pseudoplatanus* Sycamore	8.5	240	3 3 3.5 3	M	>40	Fair/Poor	Fair	C2	WA or RA	Y	3.0	Self set tree of poor form; some visibility from Maude Wilkes Cl.

For key see next page

KEY

Prefix: **T –** Tree **S** – Shrub/Climber **TG/SG** – Group/Hedge of **T**rees or **S**hrubs
***** - Estimate

Dia.: **N/A -** Tree less than 100mm (for shrubs: young, semi-mature or mature)

Age Class:

Young	Generally less than 10 years old and high life expectancy
Semi-mature	Within first 30% of life expectancy and significant growth to be expected
Early-mature	Typically 30-60% of life expectancy, full size almost reached
Mature	Typically 60% or more of life expectancy, full size reached with very gradual, slight further increases in size
Veteran	A stage of development where intervention/management may be required to ensure the tree remains safe
Over-mature	Where a tree is so senescent that management is not worthwhile

Life Expectancy: How many years before tree is likely to need removing

Crown Radius: If crown is symmetrical, one dimension is given for the radius followed by "S"

B.S. Category: **See Appendix 2**

Physiological Condition:

Good	Healthy tree with no symptoms of significant disease
Fair	Some disease noted and/or vitality is below what would be expected
Poor	Significant disease noted and/or very low vitality
Very Poor	Tree is dying

Structural Condition:

Good	No significant structural defects
Fair	Defects noted but not sufficient to warrant immediate work
Poor	Significant defects. Monitoring and/or remedial works required
Very Poor	Significant defects requiring immediate work or tree removal

Space Below A useful indicator to determine the practicality of developing below the crown. Rather than a measurement which can be misleading and open to interpretation.

Y	Potential to develop below the dripline with either no treework or removal of limbs that will not adversely affect the health and appearance of the tree.
N	No scope to develop below the dripline of the tree
N/A	Tree to be removed

Treework: This is general since the report is not a tree-work specification. It indicates:

- **H** High priority. For trees to be retained and where work required to make safe
- **L** No urgent work required but would benefit from some intervention
- **N** No treework identified as necessary in the foreseeable future
- **P** Facilitation tree surgery advised
- **R** Remove – tree identified to be removed because "U" category tree
- **RA** Tree removed to accommodate development

B.S. Category:

- **A** - Those of high quality and value i.e. make a substantial contribution; to retain
- **B -** Those of good/moderate quality and value, might be Cat. "A" but slightly impaired
- **C** - Those of low quality i.e. adequate to remain until new planting is established or young tree
- **U -** Those of such poor condition that any existing value would be lost within 10 years

1 – Mainly Arboricultural value **2 – Mainly Landscape value** **3 – Mainly Ecological value**

2.5 Tree details

The site is characterised by several small trees of little or no landscape benefit to the conservation area due to the high garden wall along the western boundary that effectively hides them from any public vantage point. Arboriculturally none are of any merit and all are C2 or U classified trees.

Along the eastern boundary, splicing or just within the site are several self set, mature sycamores and ash. These are visible from Maude Wilkes Close but are, with the exception of the ash T13, trees of poor quality, with T2 being a near dead tree overwhelmed with ivy that warrants a U classification.

The only tree of reasonable form is the ash T13 which would warrant a B classification on amenity and ecological grounds were it not for the severe distortion in the stem near the base. This has been caused as a result of historic contact with the boundary wall. A gradual evolution of this distortion may have enabled the tree to develop sufficient compensatory tissue around the damaged area at points where additional load may have occurred but the tree is deemed likely to become structurally unsound as the tree continues to grow.

The scheme presents an opportunity to remove poor or small non-descript trees and replace with trees that will provide a far better long term prospect in terms of amenity and ecological contribution to the conservation area.

3.0 ARBORICULTURAL IMPLICATIONS ASSESSMENT (AIA)

3.1 Affect of development on trees - General

The objective of the report is to identify and evaluate the extent of direct and indirect damage on existing trees that may arise as a result of the implementation of the proposed development without appropriate guidance.

A tree may take a century to reach maturity but it can be irretrievably damaged in a few minutes often because of a failure to appreciate the vulnerability of trees and particularly the root systems. *Irreparable damage is frequently done to existing trees in the first few days of a contractor's occupation of a site.*

This report seeks to provide guidance on how worthy trees in the immediate vicinity can be protected during the development.

It is important to be aware that the effects of tree damage may not be apparent for some time.

There are a multitude of activities that can kill or damage trees on construction sites and there is a need to be mindful of these activities and why they may be so harmful to trees. These are briefly summarized below.

3.1.1 Direct mechanical damage (*Referred to as D1 in this report*)

Direct damage to the crown or stem is unlikely to kill a tree unless it is significant but May disfigure it and result in long-term decay setting in. This often occurs as a result of construction activities taking place too close to trees without protection or appropriate pre-construction tree surgery.

3.1.2 Ground compaction (*Referred to as D2 in this report*)

This is likely to be the most common cause of tree death or decline on a building site. The vast majority of tree roots are located in the upper soil horizons where soil conditions are most favourable for root growth. It is these upper horizons that are most vulnerable to ground compaction. Compaction destroys soil structure and this prevents soil moisture absorption into the ground and loss of natural aeration. This process deprives tree roots of moisture as well as giving rise to root asphyxiation and is often fatal to trees.

3.1.3 Changes in ground level (*Referred to as D3 in this report*)

The majority of a tree's root systems are generally located in the upper 0.6m of the ground and the bulk of these roots happen to be very small, delicate and essential feeder roots. Reductions in ground level such as soil stripping can be catastrophic for a tree's health. Conversely increases in ground level can result in root asphyxiation.

3.1.4 Severance of roots by ground works (*Referred to as D4 in this report*)

Excavation of ground to remove old foundations and hard standing, construction of conventional concrete footings, new hard standing or the installation of services such as water/sewerage pipes, gas/electricity cables, TV/telephone cables using open trenching within the drip-lines of trees severs any roots present, potentially leading to destabilization, decline or death of trees. It May also have implications for local soil hydrology.

3.1.5 Contamination of ground (*Referred to as D-5 in this report*)

Spillage of petrol, diesel, paint removers, wood preservatives and many other toxic liquids regularly used on building sites can kill roots.

3.1.6 Change in ground surface (*Referred to as D6 in this report*)

Covering surfaces with impermeable materials – especially areas that were previously open ground can prove fatal for tree roots. Trees derive moisture from regular moisture recharge of the ground and nutrients generated by the nutrient cycle from decomposing leaf litter. Impervious surfaces can also prevent gaseous interchange between the ground and the atmosphere creating a build-up of toxic waste gases such as carbon dioxide and a deprivation of oxygen.

3.2 Affect of development on trees specific to this site

The footprint of the proposed dwelling necessitates the removal of trees U grade tree T5 and small C grade trees T6, T7 & T9. The layout requires removal of the small, C grade trees T4 & T11. Though the scheme could accommodate these two trees, the stress they may suffer and constraints posed by retention of such indifferent trees is unjustifiable. In totality, the schemes requires removal of five C grade trees and one U grade tee. None are of any notable landscape value but provision is allowed for replacement planting in the landscape scheme.

T13 is shown to be removed simply because of structural concerns in the longer term but trees T8 & T14 are shown to be retained due to a desire by the applicant to retain a sylvan character to the site. Both are poor self set trees and a preferable longer option would be to remove and replace with good quality trees providing a longer term prospect of tree cover for the conservation area.

On the basis of T8 & T14 being retained, the only impact of the development would be the incursion of the new hardstanding within their RPAs, which currently comprises open ground. In the case of T8 this represents 65% of the RPA and withT14, 40%. If not constructed appropriately this could give rise to damage types D3 & D6 described in Section 3.1. An encroachment of the proposed dwelling upon a peripheral section of T14's RPA is noted but this, at an estimated 6% of its RPA is deemed negligible, particularly in view of the vitality of the tree. This is illustrated in the TCP in Appendix 2.

T3 is a relatively poor specimen that is to be retained and several aspects of the scheme trespass upon small sections of its RPA. This includes a new boundary fence, a small area for the bin store and bike shed and the garden area to the south of the dwelling which itself comprises part lawn and part porous flags. None of this entails substantive excavation and is easily addressed through appropriate methodology

Where T8 & T14 are retained, some minor crown lifting is suggested simply to facilitate construction.

All retained trees identified in the report can be indirectly affected by potential construction activity such as materials storage, cement mixing, bonfires giving rise to damage types D1, D2 & D5 described in Section 3.1 but can be protected through appropriately designed protective exclusion zones and ground protection. This is illustrated in the TPP in Appendix 3.

4.0 ARBORICULTURAL METHOD STATEMENT (AMS)

4.1 Introduction

Successful avoidance of any damage can be achieved through appropriate tree protection details, correct implementation of these details and close liaison with the Council's tree officer and the appointed arboriculturist. The Tree Officer should be informed of and given the opportunity to inspect tree protection measures prior to commencement of the development.

These details and procedures are provided in the arboricultural method statements outlined below and illustrated in the Tree Protection Plan.

4.2 Root Protection Area (RPA)

An RPA is defined in BSI 5837 (2012) as "the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree".

The British Standard formula for calculating the RPA has been used and the resultant RPAs shown on the Root Protection Area Plan in appendix 2.

The use of a CEZ (see 4.3) and of ground protection (see 4.6) are designed to protect the RPAs.

4.3 CEZ (Construction Exclusion Zone)

All damage types can be avoided through the establishment of Construction Exclusion Zones (CEZ). This is clearly illustrated in the Tree Protection Plan in appendix 3.

The use of a CEZ can limit RPA incursion to unavoidable areas of operation. These will be to either side of the cross-over. It is important that the Council's tree officer is given an opportunity to inspect the protection prior to commencement so that he or she can be satisfied that this key part of the tree protection condition has been implemented correctly.

Positioning has taken into consideration space for construction operations and access to site huts, temporary WC and other temporary structures.

Should the site foreman think that insufficient space is allowed for construction activity to the rear, any reconfiguration of the CEZ (and ground protection) must be agreed with the arboriculturist and resubmitted either as a variation of approved drawings or of discharged conditions.

The barriers used to protect the CEZ must be installed before any material or machinery is brought onto sight and certainly prior to any demolition. Once erected these protection areas must not be altered without advice from the arboriculturist and approval of the local planning authority.

The barriers must be fit for purpose. The 2012 version of BS 5837 recommends weld mesh (Heras) secured firmly to a scaffold framework where shown in the TPP. This is required to fence off the rest of the garden form the construction site and should be erected in the manner illustrated in appendix 5.

The mini exclusion zones around T8 & T14 are best created with a timber frame constructed from 2"x2" timber and sitting on ground plates and clad with 9 or 12mm ply. Pegs into the ground and either ropes attached to the stems or attached to brackets screwed to the boundary wall should ensure stability.

4.4 Treework necessitated by the scheme

The scheme requires removal of T4-T7 , T9 & T11.

The following facilitation treework is advised:

1) Crown-lift T8 & T14 to 4m

All work must be carried out prior to development work commencing.

All work must be carried out in full compliance with BS 3998 (2010).

4.5 Root Pruning

Where any excavation is carried out within identified RPAs, roots may be encountered or exposed. This is anticipated with the marginal encroachment of the dwelling foundations upon T14, with the construction of fencing and porous flags within the RPA of T3 and the construction of the hardstanding around T8 & T14. In all these circumstances, the following guidelines must then be adhered to:

- No roots of greater than 25mm must be cut without consultation.

- All roots of less diameter that are cut must be cleanly cut with sharp secateurs or loppers, preferably to a side branch, and immediately covered with damp, clean, hessian sacking (in summer months) which must be kept damp so long as the roots remain exposed or dry hessian sacking in winter to prevent desiccation and protect from rapid temperature changes.

- Prior to backfilling, any hessian wrapping should be removed and retained roots should be surrounded with sharp sand (builder's sand should not be used because of its high salt content which is toxic to roots) or other granular fill, before soil is replaced.

- If any new concrete is to be used, an impermeable membrane must be placed along the exposed face to prevent contact with and scorching of roots and to ensure leachates do not contaminate the immediate rooting area in the future.

  These procedures must be followed and liaison with the arboriculturalist be maintained at all times. The arboriculturalist need not attend site so long as he in contact with the builders and can access photos during the excavation period.

4.6 Ground protection outside the CEZ but within the RPA

Protecting the ground of RPAs that necessarily falls outside the Tree Exclusion Zones is essential to militate against the effects of construction activity on ground conditions, particularly with respect to compaction and the absorption of potentially toxic materials. This essentially applies to the exposed ground between the eastern boundary wall and the footprint of the new dwelling within the RPAs of T8 & T14 that cannot be enclosed by protective fencing for access purposes.

Ground protection can comprise 18mm ply board or metal or fibre glass plates or scaffold boards fastened together and placed on a layer of bark mulch. This must be placed over a geotextile membrane to prevent any leachates entering the ground.

The ground protection should be laid in the manner illustrated in appendix 4.

Where work is to take place on soft ground within RPAs, such as preparation for the drive and removal of existing hardstanding and ground preparation for the new dwelling, all work must take place on protected ground and under no circumstances must any activity take place on exposed ground.

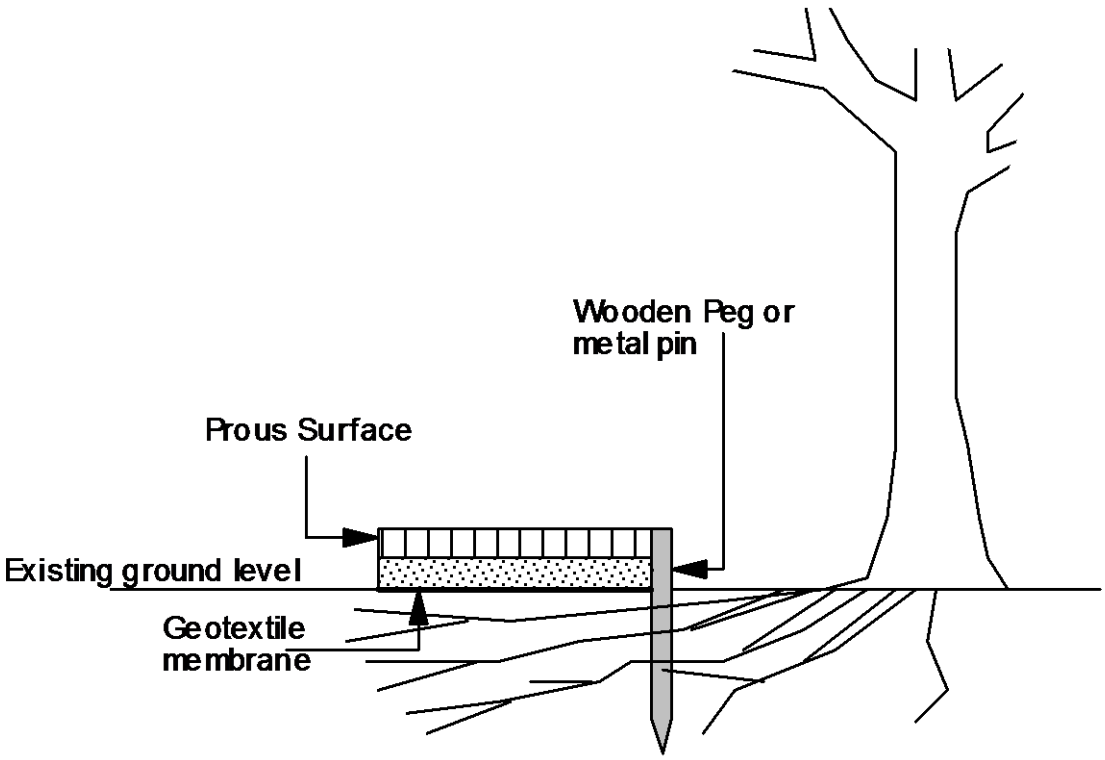
4.7 New porous hardstanding within RPAs

Avoidance of damage to roots of T8, T14 & T3 during the installation of the flag stones can be achieved through compliance with procedures detailed below.

- No clearance of the ground should take place when the ground is wet or saturated to avoid the possibility of compaction. The period between May and October is advisable.
- Kill ground vegetation where the flags are proposed using a translocated herbicide such as glyphosate (but ensure any visible roots are carefully protected first).
- Skim off top 50mm by loosening ground with a garden and raking off manually and establish a level plane.
- Lay a geotextile mat down to prevent roots growing into the sub-base. This must be porous.
- Gently compact 50mm of sharp sand.
- Lay flags and infill spaces between flags with silver sand but not cement .
- Provide edging around T8 & T14 as illustrated in Figure 1 below

All work whilst constructing this surface must takes place on protected ground

Figure 1 – Edging detail



4.8 Underground services

No new underground services are to be laid within any RPAs.

4.9 Foundation for dwelling

Due to the negligible encroachment of RPAs of trees to be retained upon the dwelling footprint, no special foundation design is required. Precautions as detailed in Section 4.5, however, must be complied with during excavation.

Additionally no trespass upon RPAs of retained trees must take place unless the ground is protected.

4.10 New fencing, gate posts and posts for decking within RPAs

- The new boundary fencing will fall within the RPA 3
- Temporary ground protection must be placed on the ground when constructing the fence.
- Where post positions are proposed, an exploratory hole should be dug to 500mm (*following procedures in 4.5*) to ascertain presence of roots. The post holes must not be more than 250mm2.
- Where roots too large to be cut or not possible to be moved aside are encountered, the position of the post should be slightly revised to allow for this.
- If concrete is to be used, an impermeable membrane must be placed along the exposed face to prevent contact with and scorching of roots.
- If the new entrance gates are to be electric, it is essential that the ducting be laid above ground and not entail any trenching.

4.11 Base of cycle rack and bin store

In order to avoid any impact on tree roots, the base of both cycle rack and bin store are to be erected as detailed in Section 4.7.

4.12 Additional Precautions outside the Tree Exclusion Zone

- All weather notices should be erected on the barrier with words such as “Exclusion Zone – Not to be moved without appropriate consent”.
- Materials that will contaminate the ground such as diesel oil and concrete mixings will not be discharged within the RPA or within 10m of any of the tree stems.
- Notice boards, telephone cables or other services should not be attached to any part of the tree.
- No fires that have the potential for flames to extend to within 5m of any point of the tree are to be lit.

4.13 Sequence of events

- Install protective fencing and ground protection.
- Clear site and carry out requisite treework.
- Construct the dwelling as per the arboricultural method statement.
- Carry out landscaping including construction of the hardstanding, fencing and bin store.

5.0 SUPERVISION - GENERAL

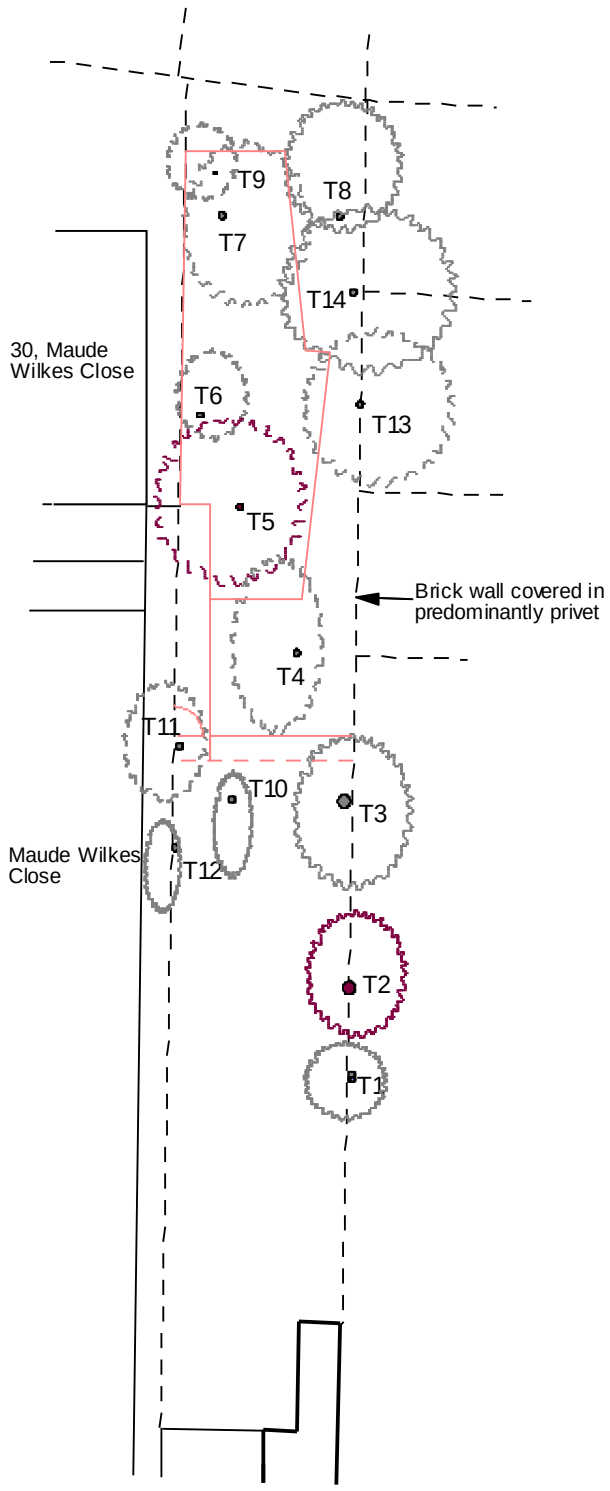
The developer and site manager is responsible for ensuring that the details specified within this report are fully complied with. Part of this must involve all site personnel being correctly inducted so that they understand the implications of the report.

The developer must ensure that the arboricultural consultant is contacted at the stages specified within the arboricultural method statement so that correct installation of protection measures and, where required, site monitoring is carried out.

Planning conditions attached to a planning consent that relate to tree protection supervision cannot be discharged without formal and fully completed inspection records.

Failure to comply with tree protection details as a result of poor site management can result in Breach of Condition or Stop Notices and unlimited fines.

APPENDIX 1



To be read in colour

Proposed layout

Dripline and stem - colour denotes BS 5837 category

A

B

C

U

Where crown line is broken, indicates removal

0 5 10

Scale (m)

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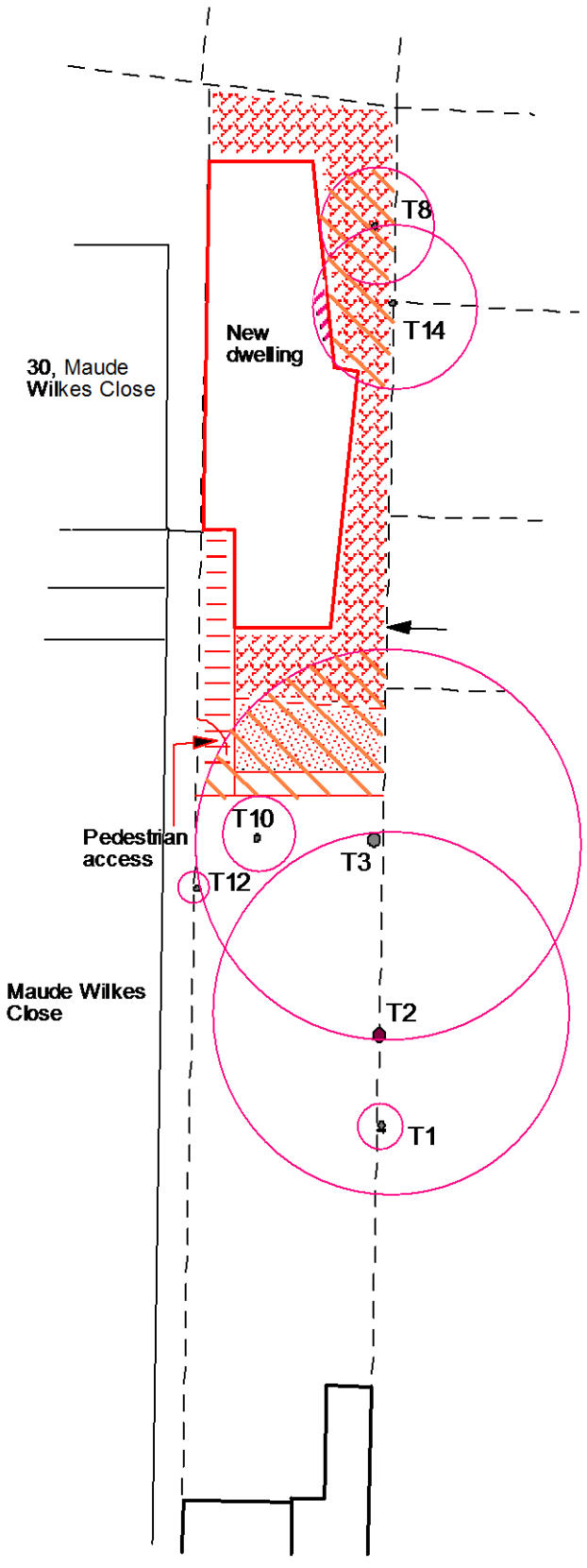
SITE:	R/O 27 Leighton Road, London, NW5
OUR REF:	01073SV
CLIENT REF:	
SCALE:	1:200 on (on A3 -Subject to pdf distortion)
DATE:	20 September 2016

Tree Survey Plan

APPENDIX 2



To be read in colour

Nominal Root Protection Area (RPA) (Also indicates potential encroachment of general building activity)

New porous hardstanding

New dwelling

Encroachment of dwelling upon RPA - Does not include general operational areas

Encroachment of hardstanding upon RPA

0 5 10
Scale (m)

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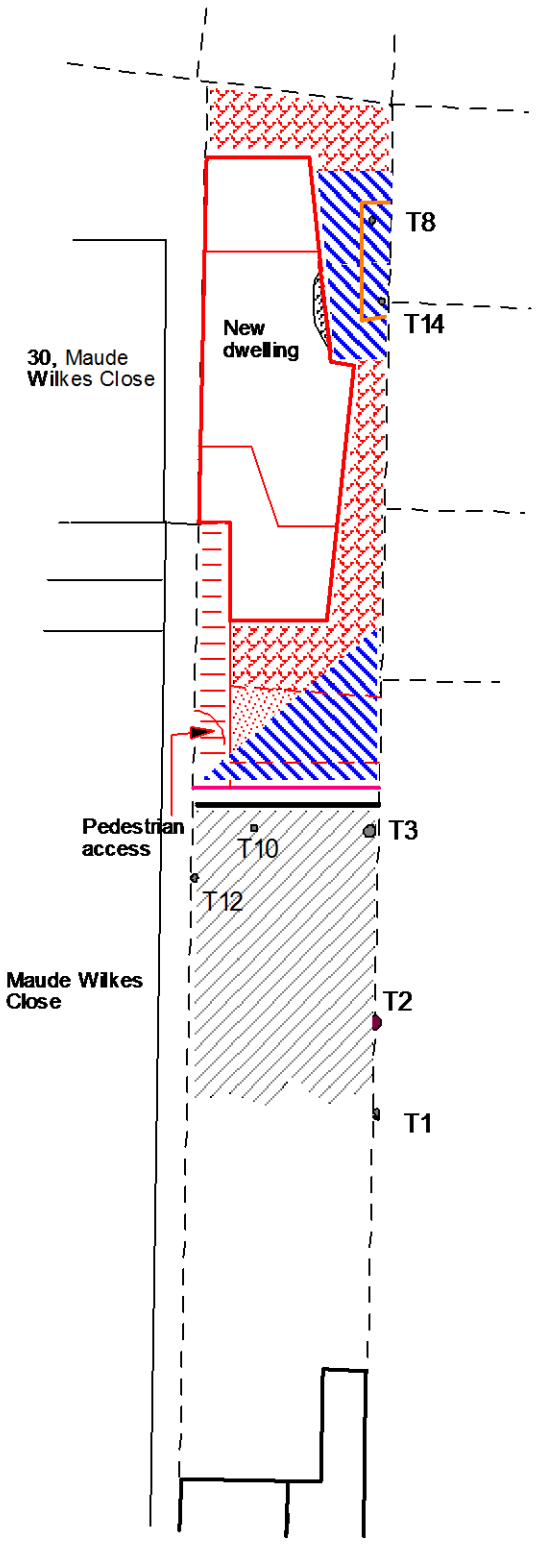
SITE: R/O 27 Leighton Road, London, NW5
OUR REF: 01073RP
CLIENT REF:
SCALE: 1:200 on (on A3 -Subject to pdf distortion)
DATE: 20 September 2016

Tree Constraints Plan

APPENDIX 3



To be read in colour

Where T8 & T14 are retained - Timber framed structure seated on ground with 9mm ply cladding protecting stem to 2m - See Section 4.3 of the Arboricultural Method Statement

Construction Exclusion Zone (CEZ) - Heras fencing supported by scaffold as per then arboricultural method statement. To be installed and approved prior to commencement.

New porous hardstanding

New dwelling

Ground protection as per Section 4.6 of the AMS - No new service within this area (not required adjacent T8 & T13 if these are removed and replaced). Hardstanding to be laid following completion of construction as per Section 4.7 of the arboricultural method statament

Follow procedures detailed in Sections 4.5 of the arboricultural method statement if T14 is retained

Fence to be built in accordance with Sections 4.10 of the arboricultural method statement if T3 is retained

0 5 10
Scale (m)

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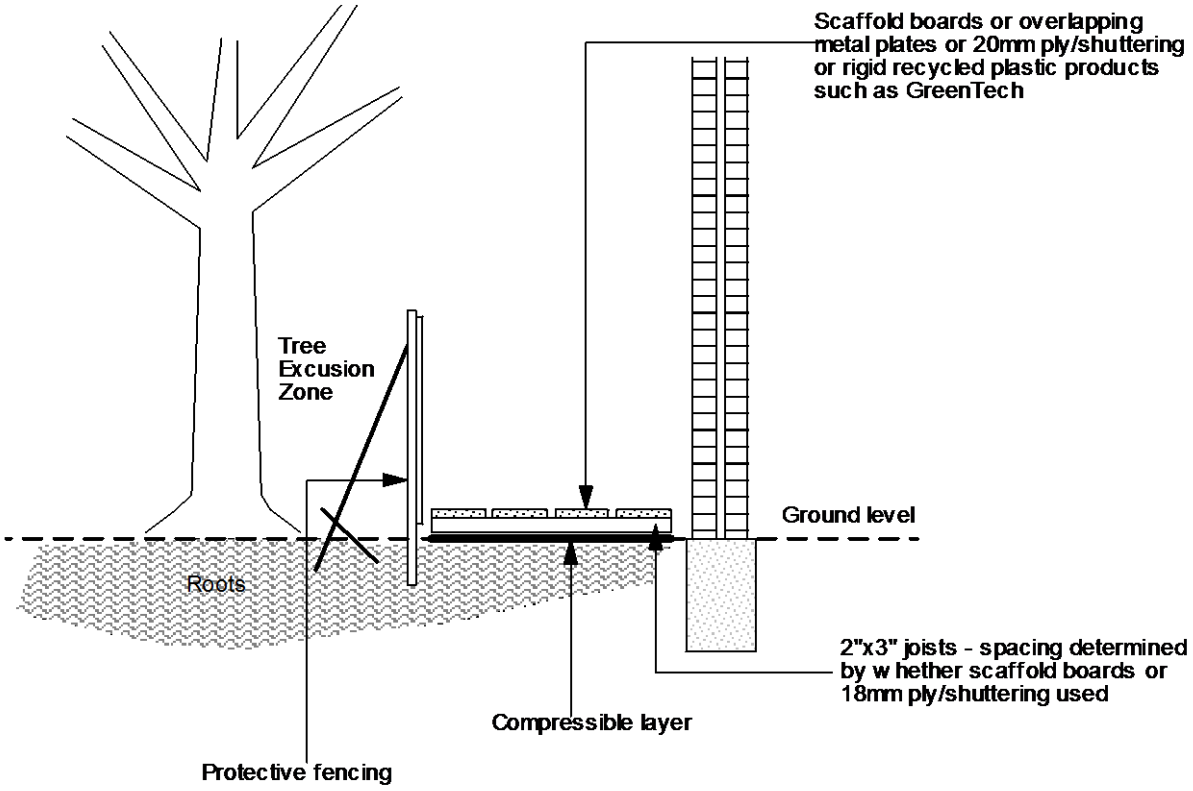
OUR REF: 01073TP
CLIENT REF:
SCALE: 1:200 on (on A3 -Subject to pdf distortion)
DATE: 20 September 2016

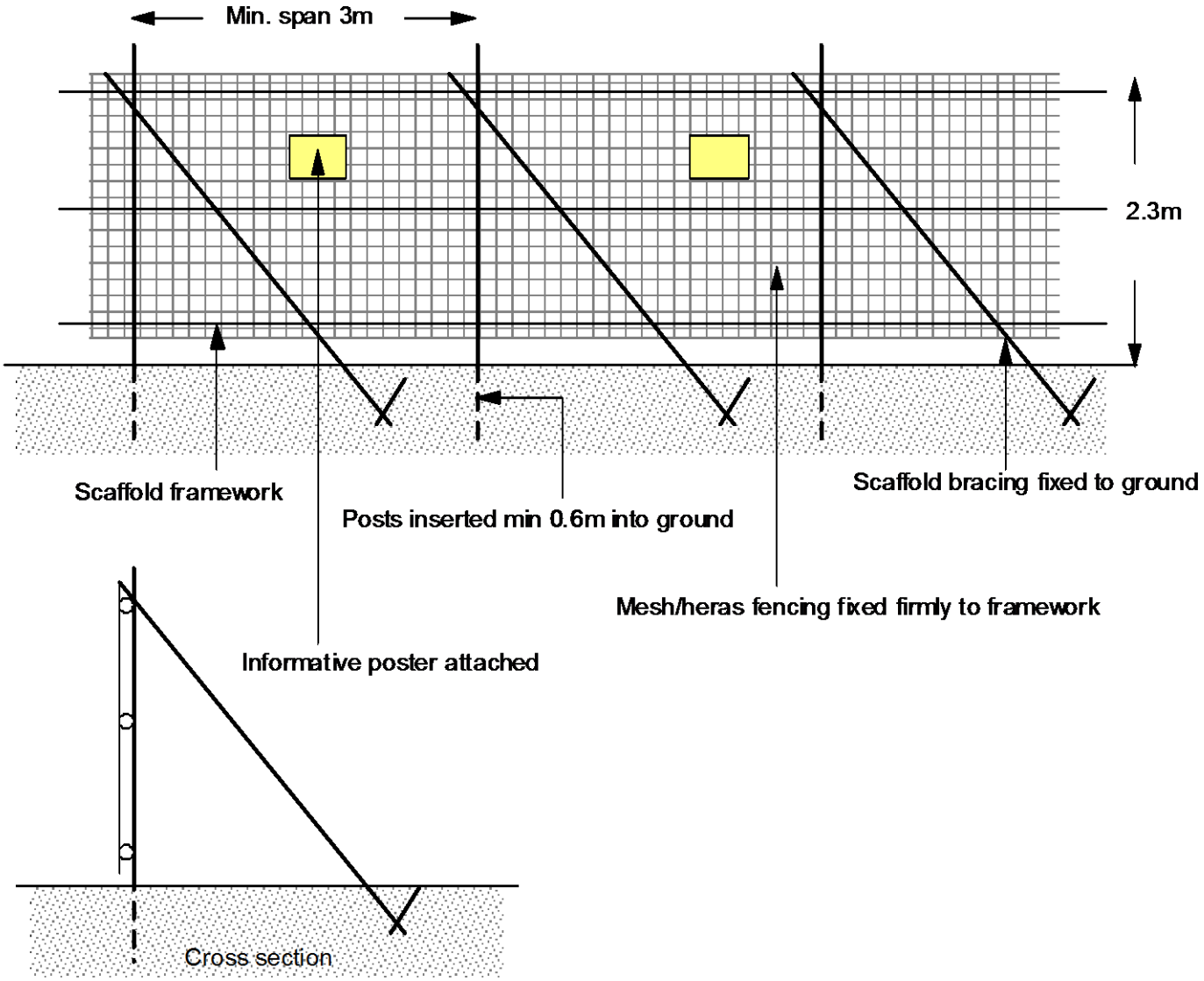
Tree Protection Plan

Appendix 4 – Details of Ground Protection



Overlapping metal plates

Appendix 5 – Default specification for tree protection fencing



Appendix 6 – BS 5837 (2012) Cascade chart for tree quality assessment

Category U (Coloured dark red on plan)

Trees in such a condition that they are unsuitable for retention.

- 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

Trees to be considered for retention on:

1 - Mainly arboricultural qualities and/or
2 - Mainly landscape qualities and/or
3 - Mainly cultural values, including conservation

Category A (Coloured bright green on plan)

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 (Coloured blue on plan)

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 (Coloured grey on plan)

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.

APPENDIX 7

MONITORING SCHEDULE

ACTIVITY	DATE	INSPECTOR	SITE AGENT	FURTHER INSPECTION REQUIRED?	OBSERVATIONS AND RECOMMENDATIONS
Erection of protective fencing and ground protection in compliance with methodology					
Clear site and carry out requisite tree work.					
Build dwelling					
Landscaping including construction of fencing and porous hardstanding in compliance with methodology					

Each stage as detailed above must be signed off by the Arboricultural Consultant prior to commencement of further stages.

Council Tree Officer: Nick Bell
Architect/Client: Alan Morris
Arboriculturist: Chris Overbeke

Notes:

APPENDIX 8 PHOTOS

T10-T12

Eastern boundary looking north, T4 in foreground

TREE PROTECTION AREA
KEEP OUT !

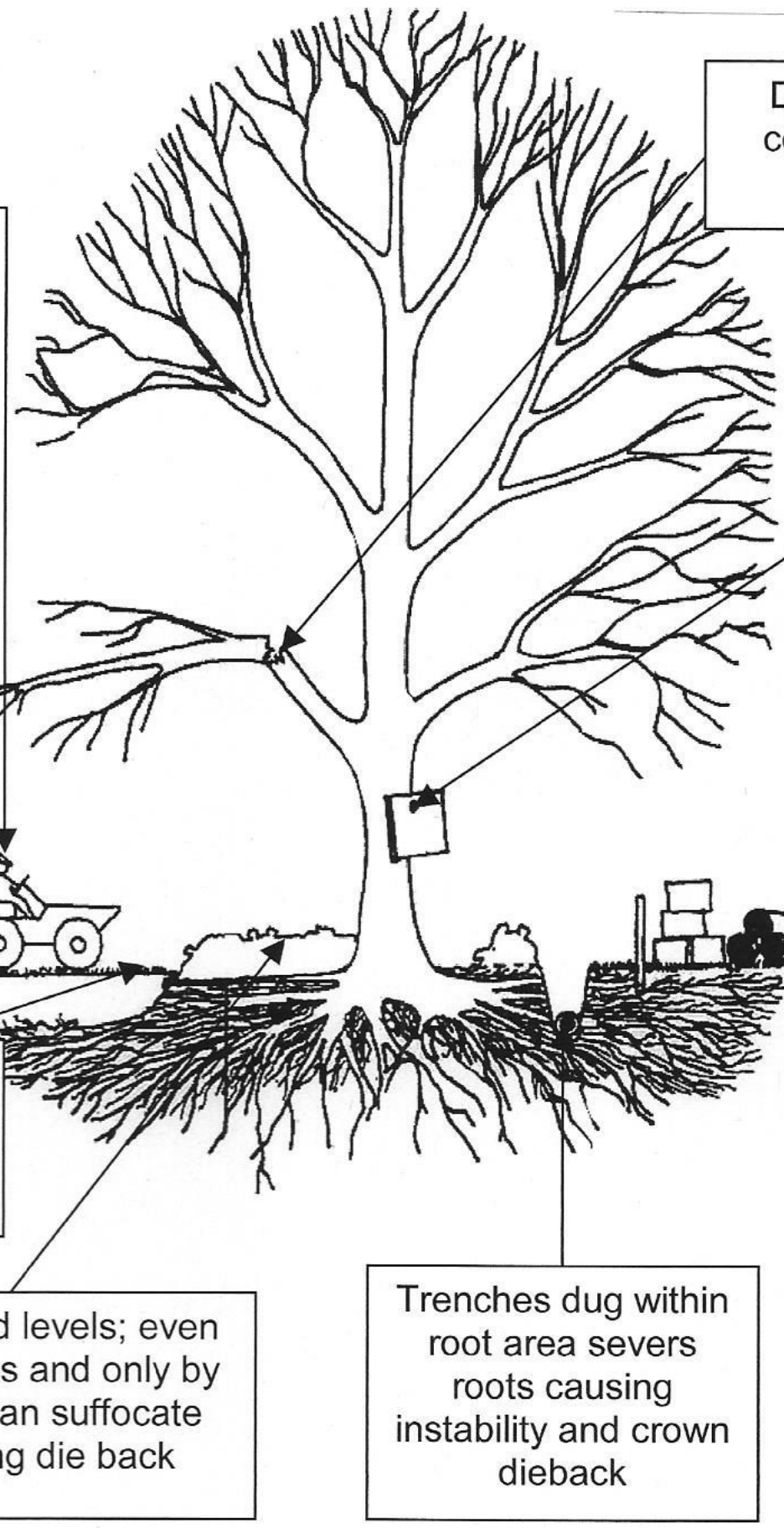
(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

COMMON CAUSES OF TREE DEATH ON DEVELOPMENT SITES

O M C



Parking of construction traffic and vehicles must not occur near the root area, compaction and contamination of soil result

Damage to major limbs by construction traffic must be avoided

Fires should not be lit within the vicinity of trees; flames burn the tree leading to dieback and disease

Attachment of signs, fences, cables, winches to a tree causes direct damage and promotes decay

Spillage of diesel oil, chemicals and cement close to root area

Lowering ground levels severs roots causing instability and crown dieback

Storage of materials within root area causes compaction and root suffocation

Raising ground levels; even for a few weeks and only by centimetres can suffocate roots causing die back

Trenches dug within root area severs roots causing instability and crown dieback

INSTALATION OF THE CORRECT PROTECTIVE FENCING CAN PREVENT DEATHS OCCURING

PLEASE USE COPIES OF THIS AS AN ON-SITE POSTER FOR PERSONNEL