Arboricultural Report

Planning and Development

Arboricultural Appraisal and Implications Assessment

Project Name and Address	**1 Lyndhurst Gardens, London NW3**		
Prepared for	AS Studio	**Project Ref**	-
ACS Ref	ha/aiams1/1lyndhurstgdns	**Client**	M Magid
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Report Date	16th March 2017		

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ACS (TREES) Consulting

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1.0 Introduction and Scope

Executive Summary

The proposed construction scheme to replace an existing rear conservatory and the extension of a basement, will be conducted within the proximity of a retained Silver Birch tree. This report sets out the recommended precautions that are to be taken to avoid adverse impacts upon the tree. Subject to the implementation of effective root and tree protection measures, the proposed construction can be conducted without impinging upon the quality of the landscape and opportunities exist for enhancements to be made to visual amenities through new planting.

1.1 A planning application for and the construction of basement and lower ground floor extensions and general refurbishments is to be submitted for consideration by the Local Planning Authority.

1.2 The proposed construction is to be undertaken in the vicinity of trees within a conservation area. The implications upon the trees and the methods for tree protection and preservation during ground works and construction are set out in this report and which includes a requisite a tree protection plan.

1.3 I have been appointed on behalf of the site owners as a competent and qualified arboricultural consultant to provide this report and to supervise any works that may have the potential to affect the protected and retained trees.

1.4 I have inspected the relevant trees on 7th February 2017. The details are provided accordance with the guidance set out in BS 5837:2012 'Trees in relation to design, demolition and construction- Recommendations' (the BS) and an extract from that guidance is appended herewith.

2.0 The Site and Trees

2.1 The site comprises a three storey, semi detached town house with lower ground floor and basement space. The rear garden supports a mature Silver Birch tree and mature beech tree grows to the north just beyond the site boundary.

Fig. 1 1 Lyndhurst Gardens with mature Birch in the background

2.2 The BS details of the trees are provided within the tree survey schedule at **Appendix 1** and their corresponding positions are shown on the tree protection plan included at **Appendix 2**.

2.3 The trees which are most relevant to this project include a mature Silver Birch tree T1 and an off-site Beech tree T2. Taking the Beech tree first, the tree is large and apparently vigorous, with no obvious defects. The tree grows within neighbouring land to the north. The roots are likely to extend well beyond the boundary into the

rear garden areas of the site. The proposed construction work is however beyond the tree's BS root protection area (RPA). The level of likely root loss will have no material impact upon the tree and effective tree protection measures are recommended here, which can safeguard the tree for the future.

2.4 The Silver Birch is also large for the location and is growing centrally to the rear garden, quite near to the existing rear conservatory, which is to be replaced. The tree is large for the species too and although it does not appear to have any significant defects or disorders, Silver Birch are well-recognised as having a limited life expectancy and being mature and large, I do not expect this specimen to live longer than forty years. It may well naturally commence a decline in condition in the next few years, which would be normal. Nevertheless, currently the tree is an effective landscape feature and there are no proposes to remove the tree in this application.

2.5 Silver Birch species are well-recognised[1,2,3] as having a shallow root system and the species can be intolerant to root loss and disturbance. Consequently, effective tree and root protection measures as set out in this report will need to be adopted.

1. Matheny. N, Clark. J. R, 1998. '*Trees and development; A technical guide to the preservation of trees during land development*'. ISA
2. Costello, L.R, Jones. K. S, 2003. '*Reducing infrastructure damage by roots: A compendium of strategies.*' ISA Western Chapter.
3. Roberts. J, Jackson. N, Smith. M, 2006. '*Tree roots in the built environment*.' TSO DCLG
4. Lindsey, P. Bassuk, N. 1991 *'Specifying soil volumes to meet the water needs of mature urban street trees and trees in containers'.* Journal of Arboriculture vol. 17 No 6.
5. Harris et al, 1999 *'Arboriculture, Integrated Management of Trees, Shrubs and Vines'* Third Edition Prentice Hall
6. Watson, G.W., Costello, L., Scharenbroch, B. & Gilman, E. 2008 *The landscape below ground III* The international society of arboriculture

Proposed Construction and associated works

2.6 The proposal involves the removal of the rear existing conservatory, which is mostly glass but which has a brick footing, which will need to be removed. The proposals also include a side extension and a basement extension.

2.7 Access to the rear garden from lower ground floor level will be via some realigned steps but this work will fall beyond the RPA of the Silver Birch T1. The proposed removal of the footings should be conducted manually and with some specialist

supervision by an appointed arboriculturist, who can advise upon root treatment should this be necessary. Excavations for the extended basement, will be similar conducted manually in order to avoid causing any significant damage to tree roots important to the tree's condition and anchorage. I have set out some tree root environment improvement measures also, which will assist in providing the tree with an enhanced rooting medium.

Table 1 **Proposed Tree Works**

Tree Works (Spec.)	Tree Nos	Visual Landscape Impact of Works*	Available Replacement Planting(Y/N)	Comments
Root exposure and treatment (pruning) as necessary (Sp8)	T1	None	-	Supervised root assessment and treatment
Crown lift to 4m (Sp4)	T1	None	-	Remove small low branches for effective tree protection
Total		None		

*This is a preliminary visual appraisal based upon the opinion of the author having inspected the trees in the context of their current surroundings. – None (no change or beneficial impact) Negligible or indiscernible difference to treed landscape; Low – Noticeable but mitigated by retention of other landscape trees and features; Medium – Obvious but temporary alteration to the treed landscape; High – Obvious and permanent alteration to the landscape.

Visual receptors include the public or community at large, residents, visitors or other groups of viewers together with the visual amenity of potentially affected people.

Specifications for recommended tree works:

General

All work is to conform to BS 3998:2010 'Tree work – Recommendations' and with current arboricultural best practice. Tree works are to be undertaken by a professional and specialist arboricultural contractor, who carries the appropriate experience and insurance cover, equipment and PPE. All works and processes are to comply with all relevant Planning, Wildlife, Environmental, Conservation and Health and Safety legislation.

Sp1. Crown reduction will include reducing the height and spread of a tree's canopy (branching structure) whilst retaining the tree's natural tree form (species determined). The amount of reduction is described in linear metres e.g. 2m (from 6m to 4m radial spread) or 3m (from 15m to 12m tree height). Crown reduction work will be undertaken for a specific purpose, which may include containing tree growth in a given location or reducing wind purchase and stress.

Sp2. Part reduction includes pruning back from structures or boundaries and which is normally applied to no more than two sides of a tree's canopy. The amount of pruning is specified in metres. The result form will be even and provide a framework for re-growth in an even form. The extent of pruning will not impinge upon tree condition and seek to preserve so far as possible, the natural

outline of the tree, which is species determined. All pruning cuts are to be made to a suitable growing point (secondary shoot) and no inter-nodal cuts are to occur.

Sp2.1 Any branch shortening work, (including as part of crown reduction work) will be conducted by pruning back to a suitable growing point, e.g. a shoot or smaller branch, which can continue to support branch growth.

Sp3. Crown Cleaning involves the removal of all dead wood small and large diameter, stubs and broken branches. Some small, densely arranged shoots (including epicormic shoots) will be thinned out or removed as recommended.

Sp4. Crown lifting includes the removal of the lowest lateral branches and shoots, (which would not result in irrevocable tree injury), to a specific height above ground level measured in metres.

Sp5. Crown thinning involves the removal of sub-lateral (secondary) branches to appropriate branch/shoot unions, removal of dead and damaged (crossing branches) with a view to reducing the crown density by a specified %, normally no higher than 30%.

Sp6. Felling involves the careful removal of a tree to ground level (or other specified height), either in sections or in one unit (straight felling). The method of felling will be suited to the constraints of the site and judged by the competent operator undertaking the task. Removing the stump may be part of the requirements and this will be carried out using a mechanical stump grinder where accessible.

Sp7. Pollarding means cutting a tree in order to encourage formation of numerous branches arising from the same height on the main stem or principal branches. Re-pollarding means removal of all re-growth to but not beyond the point of previous pollarding.

Sp8. Root pruning is to be carried out or supervised by a competent person (arboricultural contractor). Only sharp and specific pruning tools will be used for the root pruning exercise. No roots are to be pruned if it is considered that their loss (or shortening) will adversely impact upon tree condition or anchorage, immediately or in the future. Any exposed roots will be covered with a material to prevent desiccation. All exposed cut root surfaces will be made as small as possible. If possible roots will be pruned back to side shoot.

Sp9. Coppicing involves cutting trees close to the ground in order to encourage re-growth of multiple shoots.

Table 2 Summary of Implications of Construction on Trees*

Tree Ident.	Landscape Contribution	Implications/Impact	Mitigation measures	Impact Assessment**
T1	Medium	Demolition and excavation within BS RPA (approx. 10%)	1. Erect robust tree protection and ground protection 2. Supervised root exposure and treatment 3. Soil enhancement with ameliorates 4. Site supervision during excavations near to the RPA of T1	Neutral
T2	Medium	Construction beyond the RPA	1. Erect robust tree protection	

* Main trees selected for comment included above. Refer to previous notes on other trees.
** Negative – adverse impact upon trees and landscape; Neutral – no material impact (negative or positive); Positive – improvement (potential) to tree quality and landscape

3.0 Recommended Tree Protection Methods

3.1 In order to afford protection from general construction processes associated with the building of the new extensions and general internal refurbishment, it will be necessary to erect a robust tree protection fence (normally wire mesh panels) in the position indicated on the Tree Protection Plan at **Appendix 2** (TPP1_LG). A recommended example of the type BS grade tree protection fencing is included at **Appendix 3**. It will be prudent to ensure that all materials and equipment are transported to and from the site via the dedicated 'construction route' as indicated upon the tree protection plan.

3.2 Following erection of the tree protection fencing, and following the completion of the tree works I recommend installing some ground protection (refer to TPP) to ensure that roots under the surface are not damaged by compaction during regular passing by operatives and light machinery. I have included recommended examples of ground protection at **Appendix 3** also.

3.3 The methods of manual digging near trees is described with **Appendix 4** but for clarity I have set out the procedure below, which is to be overseen by the appointed arboricultural consultant:

i) Clearly mark out the area for hand dig (using biodegradable marker paint) (see TPP)
ii) Use hand tools (forks and spades) to remove the spoil and deposit beyond RPA to a depth beyond the rooting profile of the tree.
iii) Identify roots to be retained by brushing or the use of compressed air
iv) Unless after professional assessment permits pruning, roots in excess of 25mm Ø are to be retained in-situ by manually clearing around (with compressed air for example), wrapping with non-woven geotextile (e.g.Terram), covering with a void former e.g. split, rigid polythene piping.
v) Unless after professional assessment permits pruning, retention of roots 50mm Ø or more will be by the use of void-formers (see **Appendix 5**).

vi) Roots <25mm Ø will be pruned using sharp pruning tools ensuring that no splits or tears occur and that the pruning wound is made as small as possible. Roots will be pruned back to a side shoot where possible or to a suitable position.

Fig. 2 Root exposure and treatment – manual working, sharp tools and clean cuts

NOTE: THE APPOINTED ARBORICULTURAL SUPERVISOR IS TO BE CONSULTED BEFORE ANY WORK, EITHER SCHEDULED OR UNSCHEDULED, IS CONSIDERED WITHIN THE EXCLUSION ZONE OR ROOT PROTECTION AREAS OF ANY RETAINED TREE. FAILURE TO DO SO MAY LEAD TO ENFORCEMENT ACTION BY THE LPA.

3.4 In order to ensure that the tree protection measures are implemented effectively, a site monitoring exercise will be undertaken to confirm:

i) The efficacy and accuracy of the fencing and ground protection
ii) The root inspection and treatment exercise

An example of a site record (tree protection) is provided at **Appendix 4**. In this case, the form will be used as confirmation that all practical precautions have been undertaken in accordance with this method statement.

3.5 A copy of this method statement is to be retained on site for the duration of the build process together with a scaled, colour copy of the Tree Protection Plan.

3.6 The details pertaining to tree protection as set out in this method statement, specifically include:

i) erection of tree protection barriers:

ii) the installation of ground protection;

iii) lines of communication and incident reporting,

are to be explained to the Site Agent at the pre-commencement site meeting. It will be the responsibility of the Site Agent to ensure that all personnel working on site are aware to the tree protection measures processes. A copy of this method statement is to be retained on site for the duration of the build process together with a scaled, colour copy of the Tree Protection Plan.

3.7 Key times for site supervision include:

1. Completion of agreed/necessary tree works
2. Erection of tree protection fencing
3. Installation of ground protection
4. Works within RPAs of retained trees
5. Hard and soft landscaping

3.8 Effective site monitoring will be undertaken from the outset of the project and at agreed intervals thereafter. The frequency of monitoring may well decrease following the proper installation of all tree protection measures. Below is a recommended programme of arboricultural supervision. (This programme may alter dependent upon site circumstances or by agreement.)

3.9 The process for recording the tree protection measures will involve:

i) Site Agent to contact Arboricultural Supervisor with a minimum of 5 days' notice of any site work commencement.
ii) Arboricultural Supervisor to monitor site to agree tree protection fencing
iii) When all tree protection is installed in accordance with the tree protection plan, the Arboricultural Supervisor is to arrange with LPA tree officer and relevant contractors **the pre-commencement site meeting** in order to agree the tree protection and subsequent works within RPAs of retained trees and importantly the lines of communication between the on-site contractors, the Arboricultural Supervisor and the LPA tree officer and incident reporting,
iv)Arboricultural Supervisor to record all site visits and distribute reports to LPA tree officer and contractors for their records
v)Subsequent to completion, Arboricultural Supervisor to sign-off and complete.
vi) Any incidents resulting in potential tree damage are to be reported in line with the 'Incident Reporting Flow Chart in **Appendix 4**.

Table 3 Preliminary site supervision schedule

Stage	Action	Arboricultural Supervisor (AS) (Required – Y/N)	Notes
1	Pre-commencement meeting*	Y	Site Agent(SA) and LPA tree officer, contractor to attend
2	Tree works	Y	Following completion of tree works
3	Installation of tree protection and ground protection	Y	PRIOR to ground/demolition works
4	Manual dig exercise along proposed limits of excavations	Y	SA to advise AS prior to commencement
5	Construction phases	Y	AS to monitor tree protection at agreed and suitable intervals
6	Remove tree protection fencing/ground protection	N	No tree protection to be removed without prior agreement with the AS
7	Tree planting/landscaping	Y	Brief landscape company & sign off

3.9 The frequency of tree protection monitoring depends upon the nature of the project. In this case, it will be appropriate for the SA to organise with the AS monitoring visits to be twice in the initial 28 days from commencement and thereafter once every 28 days for two months and then by agreement.

Contact List (to be completed **PRIOR** to commencement)

Interested Party	Name	Company/LPA	Contact Number(s)	Comment/ Responsibilities
Site Agent	TBA			Day to day site management; co-ordination of timings; **contact with project Arboriculturist**
Main Contractor	TBA			Legal and administrative running of the project; finance; appointment of and liaison with all project consultants
Arb. Supervisor	TBA			Tree protection and management; dissemination of tree-related information
LPA Tree Officer	Mr N Bell	L B Camden	020 7974 4816	Tree protection and enforcement
Site Engineers	TBA			Technical advice and design
Architects	Mr D Stoyanov	AS Studio	02077941625	Design

TBA – to be advised

***Pre-commencement means i) before any works including tree felling or pruning and ii) before any ground works or demolition commences and upon completion of the initial installation of the tree protection, including ground protection.**

4.0 Precautions during Landscape Work

4.1 The following steps (both general and site specific), are advisable in relation to implementing any landscape works, which may have the potential to affect retained and or protected trees:

1. Advise arboricultural supervisor of intended time frame of landscape work in advance of commencement.
2. Re-locate existing tree protection fencing/ground protection to enable landscape work to proceed.
3. With bio-degradable spray paint or site pins with plastic tape, mark out the position of the relevant tree root protection areas (RPA) as per the tree protection plan.
4. Within the RPAs, avoid using any mechanical tools or vehicles (e.g. tracked or wheeled machinery).
5. Spread any mulch or top soil manually, with the use of wheel barrows and hand tools. It will be acceptable to use of the back actor of a tracked excavator to spread piled top soil or mulch into the RPAs of protected trees provided the bucket does not come in contact with the ground and that the power unit is positioned outside of the RPAs at all times.
6. Any planting pits are to be excavated manually within the RPAs of any retained trees.
7. Multiple passes within the RPAs along one route, pedestrian and with wheel barrows will require some ground protection to be installed prior to working. Ground protection can be scaffold boards over wood chip for example.
8. A record of the landscape working method is to be made and provided to the Council for their file.
9. Hard landscaping features will be constructed under supervision within the RPA of retained trees and will avoid, where possible, the re-grading of soil.

5.0 General site care (trees)

5.1 No fires will be lit on site.

5.2 No access will be permitted to within the fenced or otherwise protected areas (unless for site accommodation or Authorised agreement) at any stage during construction.

5.3 No materials, equipment or debris will be stored within the fenced areas unless agreed with the arboricultural supervisor.

5.4 Areas for mixing are to be located beyond RPAs of trees and contained to prevent leaching into the soil.

5.5 A copy of this report and the Tree Protection Plan is to remain on site at all times.

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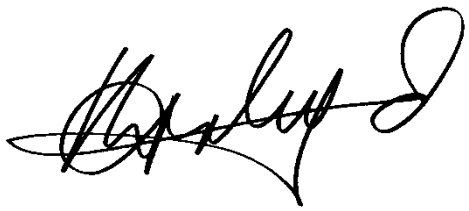
Please note that all relevant planning approvals and approval to planning conditions must first have been issued by the relevant planning authority in order for this report to become effective. We strongly advise that you consult your planning advisors before implementing any recommendations set out in this report.



Hal Appleyard
Date: 16th March 2017

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APPENDIX 1

ACS (Trees) Consulting
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Tree Survey Schedule

Site: 1 Lyndhurst Gardens, NW3

Surveyor:H. Appleyard

Date: 7th February 2017

Ref:ts1/1lyndhurstgdns

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
T1	Birch, Silver	18	4 4 4 4	2/W2	Mature	500	12	6.0	Normal	Good	Medium	B	1,2	20-40	A tree with insignificant structural or physiological defects; inherent limited life expectancy Dominant tree feature in rear garden
T2	Beech, Common	18	6 7 6 6	3/E3	Mature	800e	12	9.6	Normal	Good	Medium	B	1,2	>40	Off-site tree; large for location Suppressed canopy form

Notes:

1. Height describes the approximate height of the tree in meters from ground level.
2. The Crown Spread refers to the crown radius in meters from the stem centre and is shown above on each of the four compass points (i.e. N, E, S, W) clockwise.
3. Ground Clearance is the height in meters of crown clearance above adjacent ground level together with the height and direction of the lowest branch
4. Stem Diameter is the diameter of the stem measured in millimetres at 1.5m from ground level. The diameter may be estimated (e), where access is restricted. An average (a) may be taken for tree groups. A full inspection is always recommended.
5. Protection Multiplier is 12 for single-stemmed trees; for multi-stemmed a cross-sectional area is calculated to derive the DBH, which in turn is multiplied by 12.
6. Protection Radius is a radial distance measured from the trunk centre and is used to calculate the BS RPA.
7. Growth Vitality - Normal growth, Moderate (below normal), Poor (sparse/weak), Dead (dead or dying tree).
8. Structural Condition - Good (no or only minor defects), Fair (remediable defects), Poor - Major defects present or suspected.
9. Landscape Contribution - High (prominent landscape feature), Medium (visible in landscape), Low (secluded/among other trees).
10. B.S. Cat. refers to British Standard 5837:2012 Table 1 category and refers to tree/group quality and value; 'A' - High, 'B' - Moderate, 'C' - Low, 'U' - Remove or very poor quality.
11. Sub Cat refers to the retention criteria values where 1 is Arboricultural, 2 is Landscape and 3 is Cultural including Conservation/ecological, historic and commemorative.
12. Useful Life is the tree's estimated remaining effective contribution in years.

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 **4.5.7**.*			See Table 2
	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)	See Table 2
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	See Table 2
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	See Table 2

APPENDIX 2

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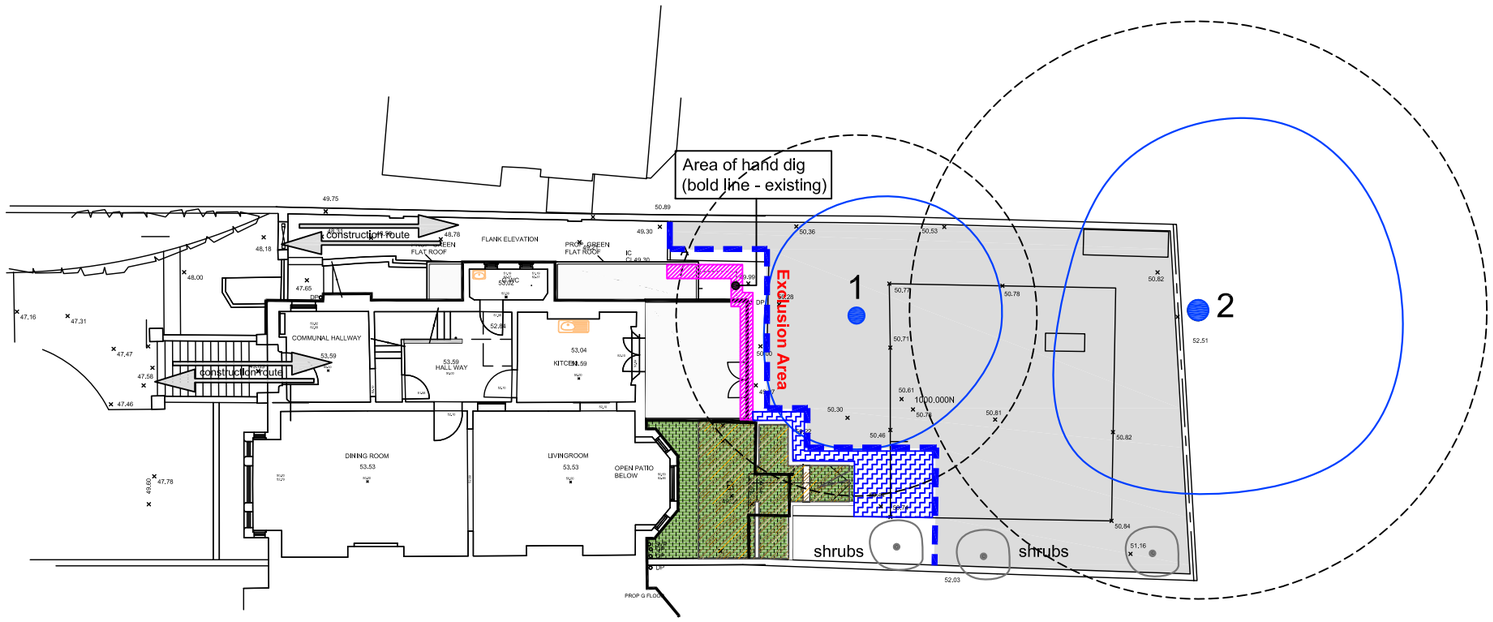
LYNDHURST ROAD



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Indicative

BS Root Protection Area, (RPA) shown uniform (above left) but site features such as roadways, retaining walls and foundations, may modify root patterns and therefore the RPA shape.

A grade trees

C grade trees

B grade trees

U grade trees

Position of planting barriers; denotes construction exclusion zone for the duration of the project.

Area for effective ground protection suitable for the project

Tree Management Methods to be adopted on site.

1. Undertake pre-commencement site meeting to agree tree protection methods and timings.
2. Carry out any permitted tree works - ask before beginning.
3. Identify a tree protection area with barriers (see Appendix 3).
4. Undertake all ground works including manual dig exercise.
5. Construction phase.
6. Remove of all tree protection and carry out landscaping.

0 5 m 10 m 20 m

Scale: 1:200

Cllent : -

Project : 1 Lyndhurst Gardens London NW3

Title : Tree Protection Plan

Scale : 1: 200 A3

Date : Mar. 2017

Dwg No : TPP1_LG

Rev : -

Do not scale from this drawing. Any discrepancies are to be reported to ACS (Trees) Consulting.
This drawing is to be used when printed to scale & in colour.

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Urban & rural tree management

APPENDIX 3

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Tree Protection Fencing

Specifications (specifically identified by outline box)

2.4m Hoarding

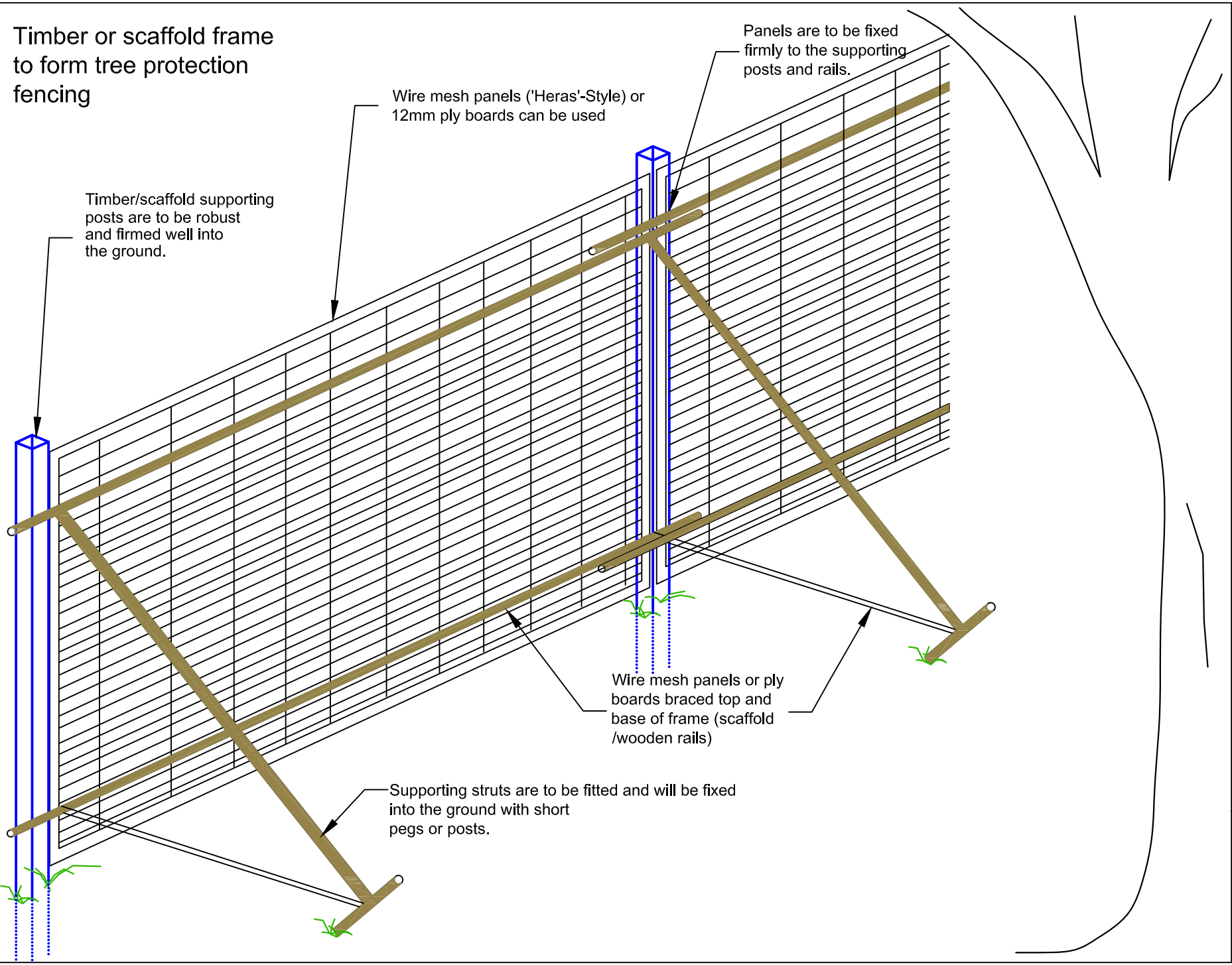
3.0m 100 X 100mm square wooden posts
3 X 38 X 87mm wooden rails affixed to posts
2.4m X 1200 outside grade ply panels (12mm) affixed to rails.
50 X 100mm angled supporting struts affixed internally (quantity as required).

(Supporting posts fixed into position using concrete. All post holes to be hand excavated. Post holes to be no larger than 300 X 300mm.)

Heras Fencing

Heras fencing describes the 2.4m galvanised steel mesh panelled fencing normally supplied with pre-cast concrete bases. **Bases are to be replaced with a fixed frame to which panels are clamped/ firmly fixed.** For extra stability, scaffold poles/4x4 wooden posts are to be firmed into the ground as supporting posts and supporting struts are to be attached at a 45 degree angle on the 'tree-side' of the fencing and fixed into the ground. Supporting posts will be braced at the top and base for added support.

Timber or scaffold frame to form tree protection fencing



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Title:

Example of Tree Protection Fencing

Note:

Steel scaffold or timber can be used to support boards or wire mesh panels

Date: Jan. 07

Ref:

Note: Sketch Plan Only - Not to Scale

Tree Protection Fencing

Scaffold Framework supporting ‘Heras’ type panels with signs attached.

Wooden Framework with ‘Heras’ type panels attached.

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Fig. 1 Ground protection – hoarding over sharp sand and wood chip

Installing heavy-duty OSB boarding over a depth (min. 50mm) of sharp sand and/or wood chip between the tree protection fencing and the foundation line of new development is effective in protecting roots, which grow in the soil beyond the position of the fencing.

Ground Protection using heavy-duty ground plates.

(Courtesy of Eve Trackway UK – Tel: 08700 767676)

Robust aluminum, interlocking plates deflect heavy loads and prevent soil compaction beneath.

Effective use of X Trackpanel for site access.

Suitable for

- Heavy Duty Roadway
- Medium Duty Roadway
- Light Duty Roadway
- Walkway
- Eve Install

Specification

- Width: 3m
- Length: 2.5m
- Height: 50mm
- Weight: 254kg

1. Lay min. 75m depth of sharp sand/wood chip over identified ground area
2. Lay 15mm aluminium road plates over sand/wood chip
3. Fix ground protection cover into place with road pins or similar
4. Erect protection fence as per BS grade.
5. Monitor condition and efficacy and maintain as appropriate.
6. Remove ground protection upon completion/landscaping only.

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APPENDIX 4

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Arboricultural Site Supervision

ACS CONSULTING

Site: 1 Hyde Park, London
Inspected By: H .Appleyard
Client: RPC
Site Agent: Shaun Clark

Date of Inspection: 15/02/2007
Time of Inspection: 3:30pm

Tree Protective Fencing

Tree protection in correct location

Comments/Action
No action at this time

Effective fencing in position

Agreed Construction Exclusion Zone

No debris within construction exclusion zone

Comments/Action
No action at this time

Amendments to Documentation Required

No amendments required

Comments/Action
Building works outside scope of Method Statement

Fencing with signs

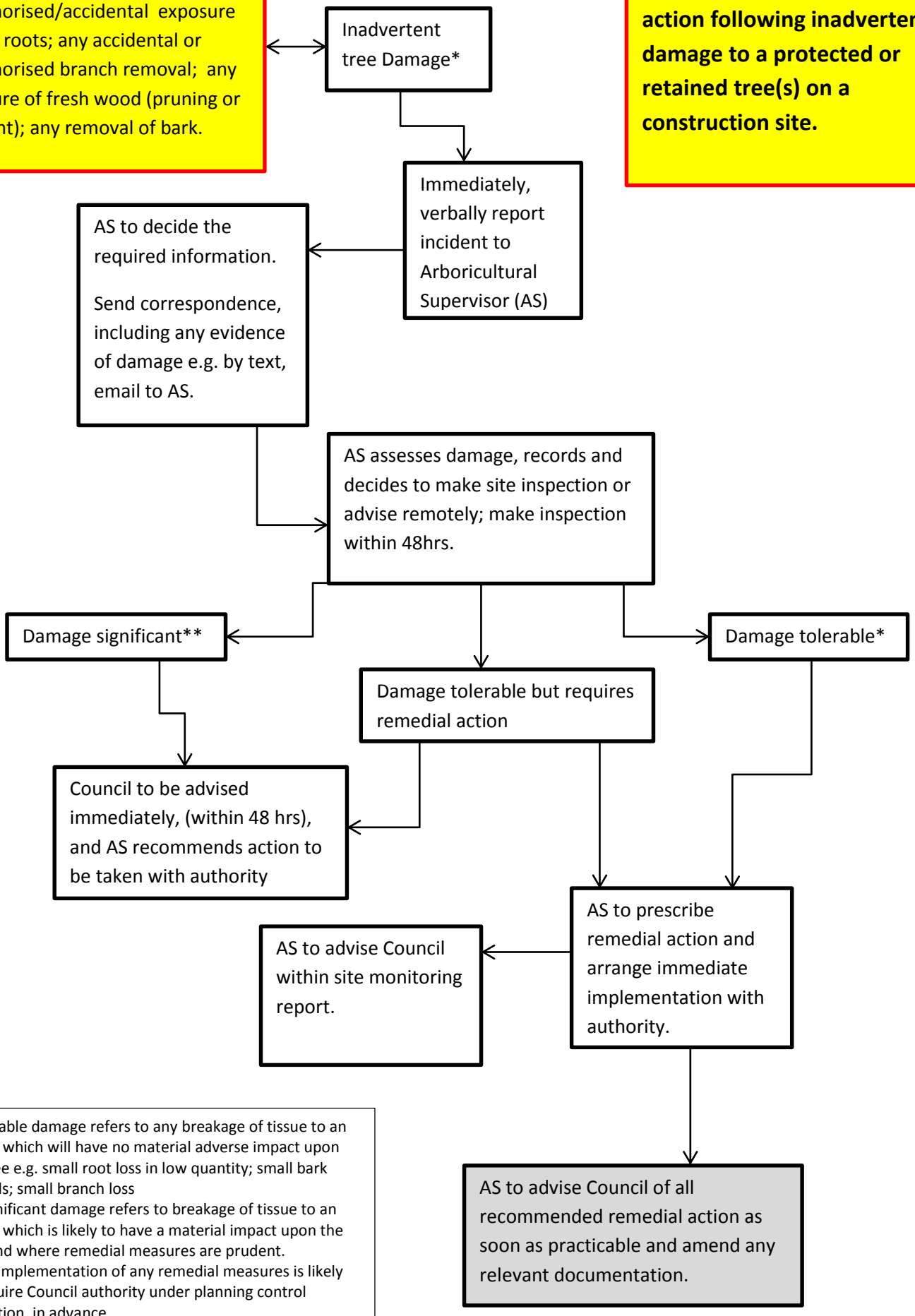
Remedial Works

General Comments

Tree protection and on-site supervsion effective and understood.

*Tree Damage is defined as: any unauthorised/accidental exposure of tree roots; any accidental or unauthorised branch removal; any exposure of fresh wood (pruning or accident); any removal of bark.

Procedure for reporting and action following inadvertent damage to a protected or retained tree(s) on a construction site.



*Tolerable damage refers to any breakage of tissue to an extent which will have no material adverse impact upon the tree e.g. small root loss in low quantity; small bark wounds; small branch loss

** Significant damage refers to breakage of tissue to an extent which is likely to have a material impact upon the tree and where remedial measures are prudent.

Note: Implementation of any remedial measures is likely to require Council authority under planning control legislation, in advance.

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Also at: Office Eighty Five, 272 Kensington High Street, London W8 6ND | Tel: 0208 687 1214
E: hal@acstrees.co.uk | Partners: H.Appleyard and A. Appleyard

APPENDIX 5

ACS (Trees) Consulting
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Brief for Hand-excavated tree root investigation trial pits/trenches

1. Obtain any necessary licences/authorisation for excavation works from the appropriate agency or land owner.

2. Undertake Health and Safety risk assessments **before** proceeding.

3. Obtain details (plan) of exact dimensions and location of proposed trial pits, access details and existing surface types. Trial trenches to be no less than 1.0m deep unless otherwise agreed.

4. Subject to written agreement, arrange access and commence works

5. Mark out the area to be excavated with biodegradable spray paint and lay any ground protection (e.g. 25mm OSB boards over wood chip mulch).

6. Within the identified area, carefully lift existing surfaces and place stones, paving or flagstones, where possible in a retrievable location. Where turf or grass is the surface cut the turf for the entire trial pit area and store in a retrievable location for re-instatement when appropriate.

(Note: where it is necessary to remove concrete or other very hard surfaces, the use of light mechanical or hydraulic hand machinery would normally be acceptable. Provisions for making good of all hard and soft surfaces will be required and agreed prior to commencement).

7. With the use of hand tools in combination with specialised pneumatic tools (e.g. 'Air Spade' or 'Air Knife'), remove the soil, using industrial soil vacuum to expose roots to the agreed depth. Roots in excess in excess of **20mm** are to be retained.

8. Use a hand brush (or compressed air) or similar to clear soil away from encountered roots before proceeding to use spades or forks to remove further soil. **Note: Hand excavations must avoid, so far as reasonably practicable, damage to the root bark or root wood.**

9. Exposed roots are to be wrapped for identification with material. To prevent desiccation (drying out) of all roots, the sides of the trial pit should be covered with a damp material e.g. hessian or similar. No roots are to be left exposed for more than four hours. All exposed trial pits must be covered overnight.

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Fig. 1 Examples of Root exposure and root identification

10. All spoil is to be placed upon boards, paving or sheeting in an agreed location, ready for backfilling when appropriate.

11. Exposed trial pits are to be fenced off and covered for safety reasons. All site users are to be made aware of their precise location.

12. Following root exposure – obtain expert advice on any root treatments (e.g. pruning).

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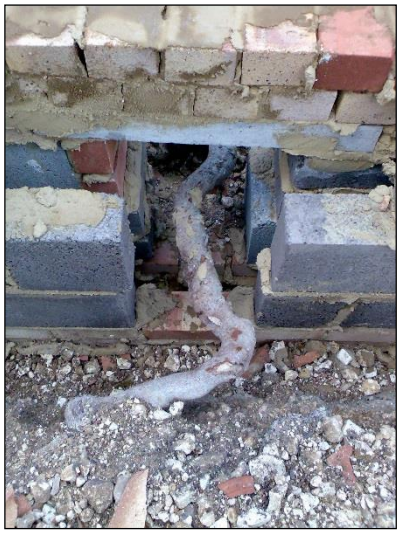

Examples of a constructed brickwork Void-Former surrounding a root in excess of 50mmØ.

Roots can be wrapped to protect the bark until the void former is complete.

Following root exposure and professional treatment/pruning where necessary, a void-former can be created from a split hard polythene pipe, affixed around a root wrapped in hessian.

The roots are exposed and wrapped. A void former is made to measure and the rots are protected before back-filling.

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