

1-38-3544

# REPORT

on the impact on trees

of proposals for development

at

27 Aberdare Gardens, London, NW6 3AJ

(27<sup>th</sup> January 2015)



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## 01

### Introduction and Instructions

I am instructed by Metropolitan Development Consultancy on behalf of Marcus Cooper Group to make an assessment of tree amenity value and condition of trees at 27 Aberdare Gardens, London, NW6 3AJ and of the impact of a proposal for development on such trees. Accordingly, I visited the property on 29<sup>th</sup> October, 2014 in order to carry out an inspection.

## 02

### Copyright

#### 02.01

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## 03

### Notes

#### 03.01

##### PLANS

1-38-3544/P1 gives an approximate representation (in plan) of actual crown form, and is intended to indicate the relationship of neighbouring trees to each other, and should be read with the comments on crown shape and tree value in TREE DETAILS appended. The plan gives a quick reference assessment of value as per section 4, table 1, of BS 5837:2012. Assessment of value in the TREE DETAILS table appended is, in accordance with British Standard 5837:2012 'Trees in relation to design, demolition and construction - Recommendations' related mainly but not exclusively to the criterion of *visual value to the general public*. The Standard recommends a way of classifying trees when assessing their potential value in relation to proposed development. Some surveys may not include any trees of one or more categories. Table 1 suggests categories 'U', 'C', 'B' and 'A', in ascending merit. 'U' (RED crown outline on plan) category trees are dangerous \ low value trees that could require removal for safety or arboricultural reasons. 'C' (GREY or black/uncoloured crown outline on plan) category trees are of no particular merit, but in adequate condition for retention. 'A' category trees (GREEN crown outline on plan) are trees of high vitality or good form, or of particular visual importance: 'B' (BLUE crown outline on plan) category are good trees but may be of slightly poorer form or be not sited as importantly as 'A' category trees. See TREE DETAILS appended. Category Assessment appears in column 10. This standard also provides a way of determining an area (see TREE DETAILS column 7) – the RPA – root protection area - around the trunk of the tree in which protective measures should be used in order to prevent significant damage to trees. There are various ways of achieving this. A simple way is to use exclusion fencing, but other methods have been shown by established use to be very effective.

### 03.02

1-38-3544/P2 shows proposed retained trees and is colour-coded to indicate where arboricentric methods are proposed during the construction process.

## 04

### Sources and Documents

Ground level inspection.

Supplied plans refs:

Metropolitan Development Consultancy 7393/20, 7393/22A (Existing & Proposed Site Plans)

## 05

### Appraisal

#### 05.01

##### AMENITY / SCREENING BY TREES AND SHRUBS

Certain trees are of some general public amenity value, as they are visible from Aberdare Gardens and from the rear of properties adjoining at rear.

#### 05.02

##### TREES AND LAYOUT - POTENTIAL FOR CONFLICT WITH ROOTS

(Details appear in the tree detail table appended.) The figures in columns 6 and 7 in the tree details table appended indicate the root protection area ('RPA'), and typically the basic exclusion fence position. New materials and methods have been developed and continue to be developed that assist in promoting the successful retention of trees in association with constructed features. It should be noted that BS 5837:2012 (section 7.4.2) supports 'up and over' methods of construction where appropriate. The design principle of this method is outlined within Arboricultural Practice Note 12 (Through the Trees to Development). This method has been used for many years on the recommendation of John Cromar's Arboricultural Co. Ltd. and has successfully allowed the retention of mature trees very close to construction activities.

#### 05.03

An assessment as per BS5837:2012 section 4.6.2 has been carried out in connection with all trees to be retained. (This section requires that site conditions, tree mechanics, etc., are taken into account in determining the likely position of roots.)

#### 05.04

##### ROOTS and DESIGN

SRP is an acronym for *static root plate*, (after *Mattheck*, 1991, etc.) a radial dimension derived from trunk diameter based on studies of wind-thrown trees and thus a guide to where structurally significant roots are likely to be located. RPA is an acronym used in BS5837:2012 and signifying the *root protection area*. The RPA is a guide to where systemically significant roots are likely to be located.

Minor encroachment on the RPA of certain retained trees is entailed, as analysed in the table below :

No.	Tree	RPA in sq.m.	Area sq.m affected	% affected	Notes
1	wild cherry	41.53	1.44	3.47	Proposed basement
11	pear	73.68	2.79	3.79	Proposed home office

In the writer's now extensive experience gained over nearly a third of a century in arboriculture, controlled, limited-extent, vertical root cutting of this kind is of little or no significance to tree health. The actually damaging operations are those that degrade or compact the ground surface within the RPA, for example by uncontrolled access by mechanical excavators, dumpers, etc. It should be noted that the very limited root cutting entailed in this proposal is, by an order of magnitude, far less than that entailed in the commercial moving of maturing and even mature trees, which has been practised successfully for centuries.

In view of the above I conclude that no special footings are needed from the arboricultural perspective. In this case all trees to be retained can be adequately protected by exclusion fencing and other measures as indicated. Methods are proposed below to reduce impacts on root systems of retained trees.

#### 05.05

##### PERCEPTION OF TREES

A retained tree 1 lies to the S of the proposed building. Tree 11 lies to the N, and to the far rear of the rear garden. The proposed dwelling is in a closely similar position to the existing structure : the existing structure's position in relation to the existing trees has not generated any obvious or reported requirement to prune trees inappropriately. The proposed basement will be partly artificially lit, with one rear lightwell proposed. Tree 1 lies outside the proposed curtilage, and therefore can reasonably be viewed as secure from proposals to fell or reduce. In view of the above I conclude that shading by trees has been considered (as section 5.6.2.6 of BS 5837:2012 recommends) and appears not significant.

#### 05.06

Processing by the LPA of any due application from future owners for permission to carry out tree work will no doubt be carried out with due regard for good arboricultural practice and according to British Standard 3998:2010 'Tree Work – Recommendations'. In any appeal that might arise against refusal of LPA consent to reduce inappropriately, or fell trees, common arboricultural criteria to those of the LPA would be used by any specialist tree inspectors of the Planning Inspectorate, and thus the trees would in my view be thus protected against inappropriate work. I consider that any such notional issues are very likely to be dealt with appropriately as no doubt in the past they have been within the Borough, as such tree/building juxtapositions are far from rare.

#### **05.07**

##### **SUPERSTRUCTURE AND TREE APPRAISAL - TREE PRUNING**

I note from the elevation drawings supplied that no encroachment on the crowns of retained trees by the proposal will occur.

#### **05.08**

##### **TREE REMOVAL APPRAISAL and REPLACEMENT PLANTING**

Please see section 08 for comments on the individual trees proposed for removal. Overall, 9 trees are proposed for removal, most of negligible amenity value. It is mainly to address the loss of deodar 10 that key replacement tree planting is here proposed to provide for local amenity. The location and species proposed is a distinct improvement on existing conditions from the medium to long term stance necessary in order to plan successful treescapes. The existing tree is poorly sited (and indeed a poor selection) for a narrow private town garden : deodars typically grow to 20m in spread. See plan for location:

A = dawn redwood (*Metasequoia glyptostroboides*) 16-18cm girth 85L pot

#### **05.09**

##### **SUPERVISION**

Supervision by an arboriculturist is a desirable (but not always essential) element of site development where trees are present and to be retained. Good communication between site agent and arboriculturist can reduce the need for such a measure. I propose that this takes place at key points in the construction process, and additionally whenever required by the architect or LPA. These key stages are as per method 1 in section 06.02 below.

#### **05.10**

##### **PUBLISHED GUIDANCE IN RELATION TO TREES AND DEVELOPMENT**

In conserving trees on development sites, expected best practice is as in B.S. 5837 : 2012. Section 5.1.1 notes :

**“Certain trees are of such importance and sensitivity as to be major constraints on development or to justify its substantial modification : attempts to retain too many or unsuitable trees on a site can result in excessive pressure on the trees during demolition or construction work, or post-completion demands for their removal.”**

#### **05.11**

The above advice appears to have been considered in formulating proposals for development.

#### **05.12**

##### **CONCLUSION**

I conclude that the construction proposed, subject to precautionary measures as outlined above and as per the recommendations outlined below, will not be injurious to trees to be retained, nor will require unreasonable numbers of trees to be removed.

## 06

### Tree Protection Proposals

#### 06.01

##### TREE PROTECTION - GENERAL

It is highly important to tree health and vitality that construction activities are carried out strictly in accordance with the tree protection methods specified. A single traverse of a root protection area by a mechanical excavator can cause SIGNIFICANT and PERMANENT (albeit temporarily invisible) damage to trees. Such machinery, including piling rigs, shall be kept at ALL times outside the root protection areas as indicated in the tree details table appended, and/or shall be subject to SPECIAL METHODS below. Fences to protect trees shall be respected as TOTAL EXCLUSION fences. Hence, before any site activity, including demolition, the fence lines shall be complete. Protective fencing and any temporary protection of ground surfaces will have to be removed in due course to allow finishing of landscaping, paving, etc., but this shall not take place until all need for vehicular access to the site has passed, and shall be agreed with arboriculturist / planners on site during progress of works.

#### 06.02

##### TREE PROTECTION – SPECIAL METHODS 1-8

PLEASE READ WITH PLAN REFERENCE 1-38-3544/P2, APPENDED.

The Methods shall be implemented in the order given unless it is stated to the contrary.

**Method 1 : Supervision by an arboriculturist shall take place at key points in the construction process, and additionally whenever required by the architect or LPA. These key stages are :**

- 1) At site possession by contractor, outline all tree protection measures with site agent and resolve any issues arising. Ensure remedial tree work including any minor accommodatory tree work required for erection of scaffolding near trees is carried out to specification and sign off. Ensure protective fencing is erected and completed as proposed. Ensure site huts, mixing sites for mortars, disposal-to-skip sites, etc., are located appropriately, and sign off.
- 2) Supervise lifting of hard surfacing near trees.
- 3) Supervise laying of geotextile combination ground protection and sign off.
- 4) Attend as required to supervise digging for and the laying of lighting cable ducts or services.
- 5) Approve timing of removal of protective fencing (post main phase) and sign off.

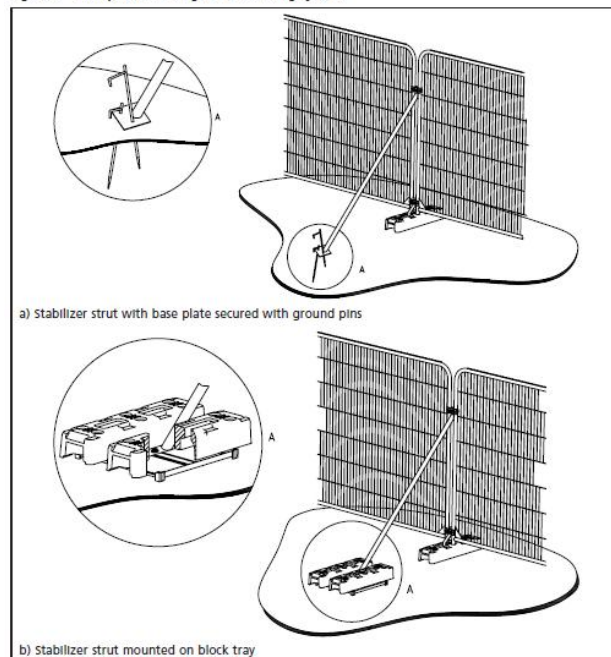
##### **Method 2 : TREE WORK**

Tree work shall be in accordance with the provided specification and good arboricultural practice, and to BS 3998:2010 'Tree Work - Recommendations'.

### Method 3 : TREE PROTECTION FENCING

Tree protection fencing shall be erected, consisting of 'Heras' type fencing (weld-mesh panels), each section securely attached to uprights

Figure 3 Examples of above-ground stabilizing systems



driven at least 0.6m into ground, as per the layout as shown on the plan (pink lines). No ground levels reduction or excavation shall take place within (=the tree side of) the fence lines. The standard rubber supports ('elephant's feet') shall if used, be as per BS 5837:2012 section 6, figure 3, left.

Below the crowns of trees with branches extending to less than 2m above ground level, in order to avoid unnecessary pruning, it is permissible to replace sections with manufactured boards at least 11mm thick (hoarding), attached securely to timber uprights driven at least 0.6m into

the ground, providing the finished fence stands at least 1.5m above ground level. The fencing shall include, as indicated on plan, the protection of an area where tree planting is proposed.

### Method 4 : GROUND SURFACE HANDLING and PROTECTION

This method shall apply in the zone hatched blue on plan. NO levels reduction shall take place. This includes no 'scraping up' with a mechanical excavator or otherwise. Any existing hard surfacing, any existing surface debris, light vegetation, etc., that lies within the zone shall be removed using hand tools or hand-held power tools only. A 2D geotextile membrane, such as 'Treetex T300' type shall be laid; 100mm of green-source woodchip; continuously abutted scaffold boards or manufactured boards so as to completely cover this area. This area may be used for pedestrian access. Scaffold erection shall take its bearing directly off the ground surface via spreader plates/scaffold boards.

### Method 5 : CONTIGUOUS PILE WALL – FACILITATION TRENCH

This method shall apply in the zone solid cyan on plan. An access trench shall be opened with hand tools only (in the position indicated on plan), to a depth of 600mm below ground level. Roots shall be trimmed to the side of the trench closest to the tree with a sharp edge tool or sharp hand saw. Chainsaws shall not be used. The roots shall be trimmed at right angles to the long axis of the root. No paint or other treatment shall be applied to the cut ends. An HDPE membrane shall be applied vertically to the exposed soil face closest to the tree, retained in position by vertically placed manufactured board extending the full depth and width of the vertical face of the trench. The boards shall be 22mm thickness and shall be retained in position during the piling



operations by timber pegs or held with wing nuts on tie rods passed diagonally through the sheeting into the soil face.

#### **Method 6 : SERVICE TRENCHES**

**N.B. -This applies to ALL services : Electricity, gas, water, etc. Existing services shall be utilised wherever possible.**

**These methods shall apply generally within any RPA (orange circles).**

**1) The trench shall be opened with an air-spade to required depth.**

**OR**

**2) The trench shall be dug with hand tools only. Probes such as screwdrivers or steel rod <10mm diameter to determine root presence ahead of digging shall be used. The work shall proceed cautiously. No roots over 20mm diameter shall be cut. Roots 20mm or more in diameter unearthed shall be temporarily protected with bubble-wrap and insulating or gaffer tape while rest of trench is dug.**

**OR**

**3) Services shall be thrust-bored using trenchless techniques (compressed air-driven 'mole') at a depth of 700mm or more below ground level, entailing no surface excavation. Starter pits for rams shall be outside any RPA, or reception/starter pits shall be opened according to 1) or 2) above.**

**Method 7 : This method shall apply after completion of main build only. Ground preparation for tree planting areas shall entail removal of hard surfacing using hand tools or hand-held power tools only, the removal of degraded or compacted or contaminated soil to a depth of at least 0.6m below finished surrounding ground level. The base and sides of the pit shall be forked over to at least one hand fork's spit in depth. Screened topsoil (to BS3882 : 2007- multi-purpose topsoil) shall be laid to replace soil volume removed and to a minimum depth of 0.6m within 1.3m of the trunk location of each tree to be planted. Soil handling of any kind shall take place only after a minimum of 3 days after heavy rain, and shall where possible be carried out 7 days or more after such rainfall. Tree planting shall be in accordance with British Standard 8545:2014 'Trees : from nursery to independence in the landscape - Recommendations'. This enshrines good arboricultural practice: the tree shall be planted so that the root collar lies at finished ground level, shall be short-staked and tied with proprietary tree tie. Any hedging whips shall be staked and protected with proprietary growing tube. The ground surface shall be mulched within 0.75m of the trunk location to a depth of 100mm with composted organic material or proprietary mulch mat.**

**Method 8 : In addition to the above, careful general operation and site handling shall be observed as outlined at 06.03 below.**



### 06.03

#### GENERAL TREE PROTECTION METHODS

- A) No fires shall be made on any part of the site, or within 20m of any tree to be retained.
- B) No spilling or free discharge of wet mortar, concrete, fuels, oils, solvents, or tar shall be made on any part of the site.
- C) No storage of wet materials shall be made within the protective fences.
- D) No breaching or moving of the protective fences shall take place without the approval of an arboriculturist.

### 06.04

It is recommended that acceptance of the recommendations in this report is demonstrated by, for example, the architect specifying in writing to the building contractor that tree care conditions apply in execution of the contract, and by an estimate or written undertaking from the contractor to the architect demonstrating that the practical aspects of observation of such recommendations have been priced in.

### 07

#### General

If conflicts between any part of a tree and the building(s) arise in the course of development these can often be resolved quickly and at little cost if a qualified arboriculturist is consulted promptly. Lack of such care is often apparent quickly and decline and death of such trees can spoil design aims and can of course affect saleability, and reflect poorly on the construction and design personnel involved. Trees that have been the recipients of careful handling during construction add considerably to the appeal and value of the finished development.

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Date: 27th January 2015

Signed:



John C. M. Cromar, Dip.Arb.(RFS) F.Arbor A.

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## APPENDICES

08

### Tree Data

Tree number prefix(es)	Tree number	Tree type	Height	Stem diameters	Radius of RPA if circle (mm)	RPA (m <sup>2</sup> )	Comments	Life expectancy (years)	Assessed BS5837 value category
	1	wild cherry	9	303	3636	42	Basal stem removed.	40+	B1
	2	Leyland cypress (hedged)	3	115	1380	6	Some screening function	40+	C1
H	3	Thuja hedge	2	<60	720	2	Screening potential.	40+	C2
H	4	privet hedge	1.7	<50	600	1		10+	C2
S	5	<i>Pyracantha</i>	3.5	130, 80	1831	11	Shrub	10+	C1
	6	apple	5	270	3240	33	Lean toward house.	20+	C1
	7	apple	4	140, 160	2551	20	strong lean	<10	U
	8	Lawson cypress	8	300	3600	41	Low branches. Some screening function.	20+	B1
	9	Lawson cypress 'Ellwoodii'	8	275	3300	34	Slow growing cultivar.	20+	C1
	10	deodar	18	495	5940	111	Good form : poorly sited for growth to maturity.	40+	B1
	11	pear	16	270, 300	4843	74		20+	B1
	12	<i>Yucca</i>	3	90	1080	4	Shrub	10+	C1
S	13	<i>Aucuba</i>	3	<30	360	0	Some screening function	10+	C1

09  
Schedule

*Trees at 27 Aberdare Gardens, London, NW6 3AJ*

Please read in conjunction with plan 1-38-3544/P2.

Tree number	Tree type	Height	Stem diameters	Comments
H3	Thuja hedge	2	<60	Remove including stumps
H4	privet hedge	1.7	<50	
S5	<i>Pyracantha</i>	3.5	130, 80	
6	apple	5	270	
7	apple	4	140, 160	
8	Lawson cypress	8	300	
9	Lawson cypress 'Ellwoodii'	8	275	
10	deodar	18	495	
12	<i>Yucca</i>	3	90	

NOTES:

All tree work should be carried out to BS 3998 : 2010 'Tree Work - Recommendations'. The Wildlife and Countryside Act 1981 protects with certain exceptions all birds and their nests. It is an offence to destroy such nests or take or injure such birds in the course of tree works operations. If a tree is a bat-roost, a licence to work on the tree must first be obtained from the relevant Statutory Nature Conservation Organization (in England : Natural England 0845 601 4523.) Acting without a licence is likely to be justifiable only in acute emergencies threatening human life and where all other legally available option such as footpath diversion, fencing and warning signs cannot be applied.

Ivy and dead wood can be important ecological features. Ivy where specified in the work schedule should be treated as per BS3998 section 7.12. In summary this means trimming back (e.g. with a hedge cutter or secateurs) to near the line of the trunk or branches, and/or removing selected stems so that the structure of the tree can be inspected. In practice this may need to be done outside the bird-nesting season. Treatment of dead wood shall be as per section 7.3.2 – essentially shorten if possible, thus retaining some resource for invertebrates, etc.

10

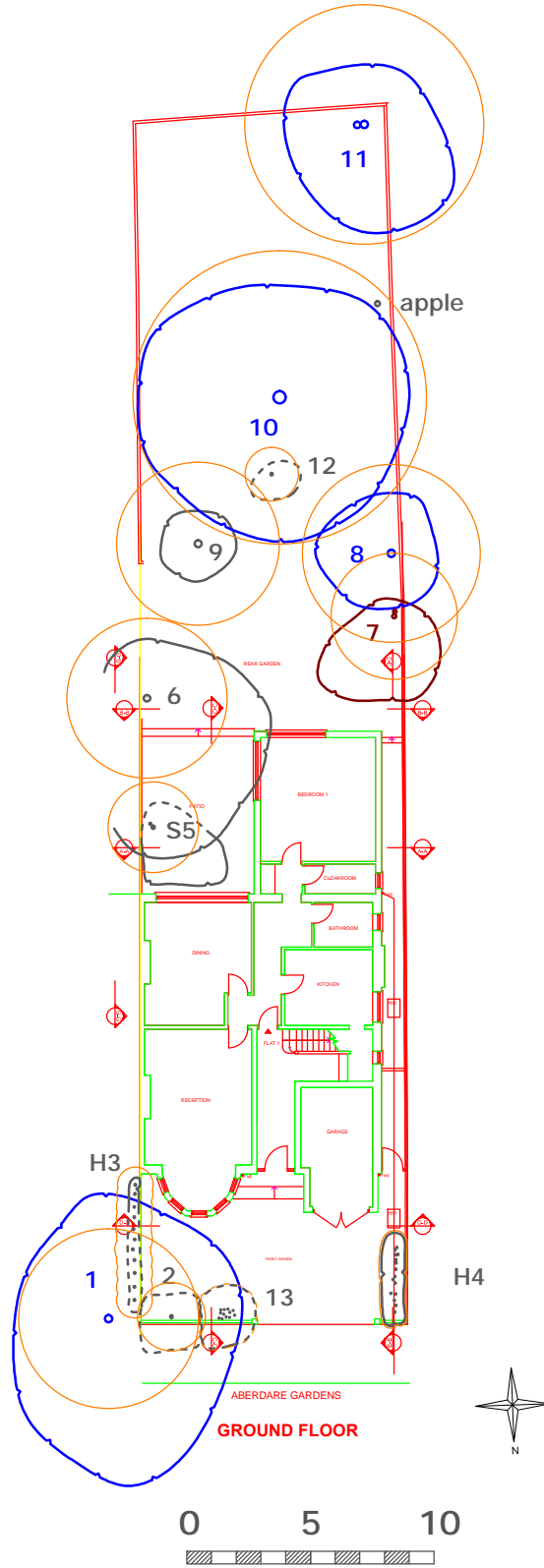
**Plans**

1-38-3544/P1

1-38-3544/P2

**KEY TO PLAN SYMBOLS**

- GREEN - High Value
- BLUE - Moderate Value
- BLACK - Low Value
- RED - Remove/Very short life expectancy
- ORANGE SHAPES: Root Protection Areas



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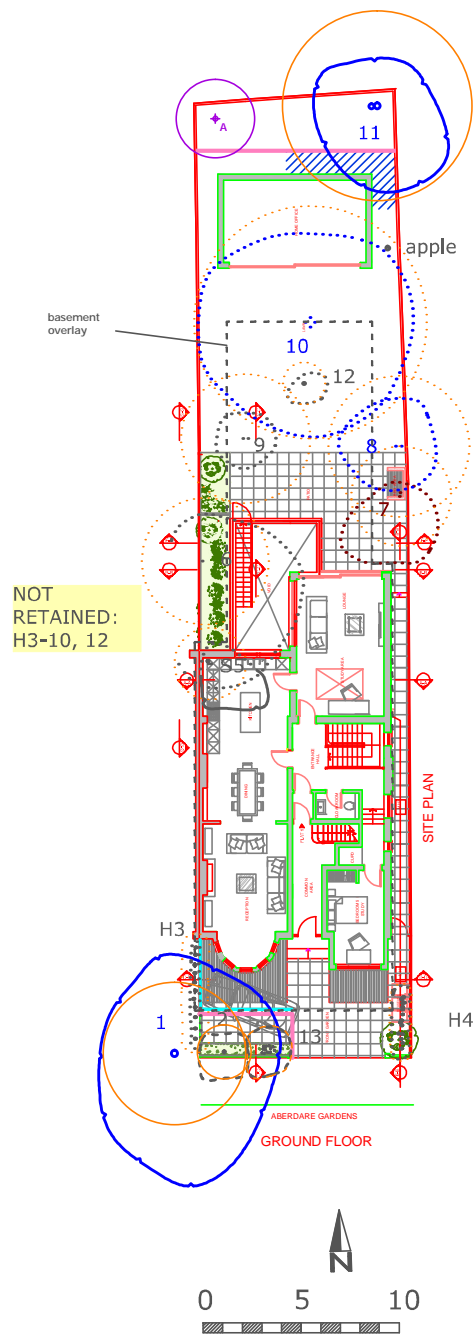
**TREE VALUE  
ASSESSMENT**  
as per BS5837:2012  
&  
**Root Protection Areas**

for full details of  
tree value see report  
reference 1-38-3544

27, Aberdare Gardens,  
London, NW6 3AJ

Based on MDC drg.  
7393/20 supplied

ref: 1-38-3544/P1  
1:200 scale @ A3  
rev. 27.01.15



**KEY TO PLAN SYMBOLS**  
 PINK LINES: Tree Protection Fencing  
 ORANGE SHAPES: Root Protection Areas  
 DARK BLUE HATCH: 'boarding out' method - see report ref. 1-38-3544  
 CYAN FILL: method applies - see report ref. 1-38-3544  
 'A' - Proposed replacement planting - see report ref. 1-38-3544



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**TREE RETENTION and TREE PROTECTION MEASURES**

for fuller details of protection measures see report reference - -

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