1-38-4293

R E P O R T

on the impact on trees

of proposals for garden works

at

11 Redington Road, London, NW3 7QX

(25th May 2017)

JOHN CROMAR'S ARBORICULTURAL COMPANY LIMITED

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01
Introduction and Instructions

I am instructed by Marek Wojciechowski Architects Ltd on behalf of clients to make an assessment of tree amenity value and condition of trees at 11 Redington Road, London, NW3 7QX and of the impact of a proposal to raise the level of the rear lawn on such trees. The trees stand in the Redington Frognal Conservation Area : this report is in support of notification to Camden Council of intent to treat trees in a Conservation Area. Accordingly, I visited the property on 9th May, 2017 in order to carry out an inspection.

02
Copyright

02.01

03
Notes

03.01
PLANS

1-38-4293/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 'Trees in relation to design, demolition and construction - Recommendations'. Assessment of value in the TREE DETAILS table appended is, in accordance with this British Standard 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
1-38-4293/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 :
MOBILE CAD DRG. NO.: 1938-02 GROUND FLOOR PLAN
MAREK WOJCIECHOWSKI ARCHITECTS DRG. NO.: 17017 PROP 02 GROUND FLOOR PLAN

05
Appraisal

05.01
AMENITY / SCREENING BY TREES AND SHRUBS
The trees surveyed are mainly of local amenity value, providing screening and softening between properties. One tree may have glimpse or partial / skyline presence as viewed from more distant public viewpoints.

05.02
TREES AND LAYOUT - POTENTIAL FOR CONFLICT WITH ROOTS
(Details appear in the tree detail table appended.) The figures in columns 5 and 6 in the Tree data table appended indicate the root protection area ('RPA' below), 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, - a revision of APN 1, 1996, published originally by AAIS / Tree Advice Trust). 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 such as location of structures, 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. Encroachment on the RPA of retained trees is entailed, which is addressed by arboricentric methods proposed below that preserve gaseous exchange pathways.

Note : the underlying slope will serve to draw in oxygen-rich air through the uphill tubes, and naturally evacuate carbon dioxide-rich air via the porous substrate and disperse it to the atmosphere at the toe of the slope via the unsealed timber retaining wall.

In the writer's now extensive experience gained over more than a third of a century in arboriculture, controlled, limited-extent, vertical root cutting is of little or no significance to tree health. (N.B. - no root cutting is proposed here). 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.

In view of the above I conclude that all trees to be retained can be adequately protected by exclusion fencing and arboricentric methods as proposed below to reduce impacts on root systems of retained trees.

BS 5837:2012 7.4.2.3 restricts permanent impermeable hard surfacing of any existing unsurfaced ground within the RPA of trees to be retained to 20% of the RPA.

05.05
SUPERVISION
Supervision by and regular communication with an arboriculturist is a nigh-essential element of site management where trees are present and to be retained. 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.

05.06
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."

05.07
The above advice appears to have been considered in formulating proposals for development.

05.08
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 any trees to be removed.

06
Tree Protection Proposals

06.01
TREE PROTECTION – GENERAL OVERVIEW
It is highly important to tree health and vitality that construction activities are carried out strictly in accordance with the tree protection methods specified below. It is widely not understood that a single traverse of a root protection area by a mechanical excavator can cause SIGNIFICANT and PERMANENT (albeit temporarily invisible) damage to trees. Any such machinery, including, for example, tracked piling rigs, shall be kept at ALL times outside the root protection areas (RPAs) as indicated in the Tree data table appended, and/or shall be subject to ARBORICENTRIC 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 – ARBORICENTRIC METHODS 1 - 5

OVERVIEW

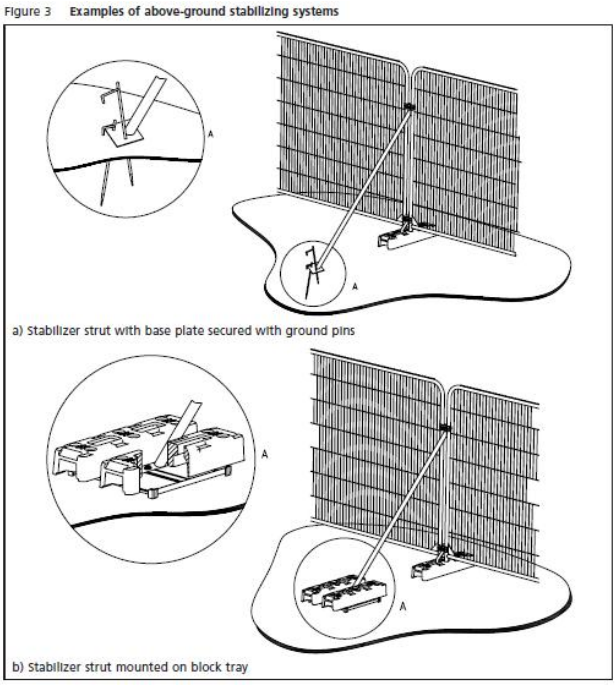
Method 1 : Supervision by an arboriculturist shall take place at key points in the construction process, and additionally whenever required by the architect, client or LPA. These key stages are :

1) **At site possession by contractor, outline tree protection measures with site agent and resolve any issues arising.**
2) **Ensure protective fencing is erected and completed as proposed. Ensure any site cabins, mixing sites for mortars, disposal-to-skip sites, etc., are located appropriately, and sign off.**
3) **Approve any removal or adjustment of protective fencing and sign off.**

PLEASE READ WITH PLAN REFERENCE 1-38-4293/P2, APPENDED.
The Methods shall be implemented in the order given unless it is stated to the contrary.

Method 2 : TREE PROTECTION FENCING

Tree protection fencing shall be erected, consisting of 'Heras' type fencing (weld-mesh panels), each section securely attached to uprights 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; that is, pinned to the substrate with re-bar.

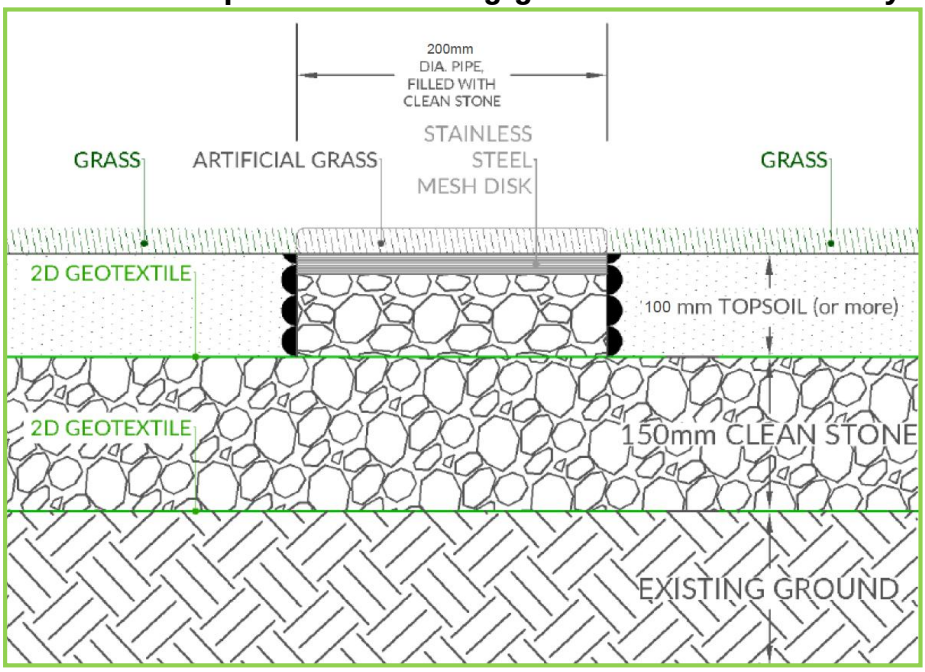


Method 3 : EDGE RESTRAINT / DWARF RETAINING WALLS

This method shall apply in zones of cyan fill on plan on plan. Structures shall be formed of permanent tanalised timber such as modern railway sleepers laid flat or on edge; where required in combination, pegged or pinned - e.g. with re-bar - to the substrate. The re-bar shall be driven below the upper face of the timber and the hole sealed with a hardwood peg and glued and trimmed flush.

Method 4 : LAWN LEVEL AUGMENTATION METHOD

This method shall apply in the brown hatch zone where fill is to exceed 150mm in depth over existing ground level within any RPA (orange circles) where fill is proposed. Maximum depth of formation to be 600mm. The vertical pipes shall extend to the surface of the fill. 150mm of 40-60mm, CLEAN STONE – NO FINES (typically sold as 'track ballast') shall be laid. At spacings of



approximately 2.5m, short vertical sections of twinwall drainage pipe 200mm diameter shall be placed vertically (see section above), and each backfilled with 40-60mm, CLEAN STONE. A 2D geotextile layer such as 'Treetex T300' type shall be laid over the 150mm layer of 40-60mm clean stone and cut to fit snugly around and over the vertical pipe sections. A stainless steel (10mm mesh) disk shall be bonded to the side walls of the vertical tube, and cosmetic disk of artificial grass placed in neck of tube. Backfilling with topsoil to BS3882 : 2015 - topsoil shall take place overhand : delivery plant shall stand outside the RPA or stand only on a minimum of 150mm of clean stone over 2D geotextile. Topsoil shall be loose-tipped and graded by hand or graded overhand only by plant. No mechanical consolidation shall take place. To allow for natural settlement of fill, any trimming of the vertical sections of pipe to below grass level should take place a minimum of 3 months after installation.

Method 5 : 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.

06.05
Note to LPA : if the Authority is minded to grant consent, it is invited to consider the incorporation of the specific *order of implementation* of the arboricentric methods above into any Conditions applied. Such a measure is likely to maximise tree protection.

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.

25th May 2017
Signed:

John C. M. Cromar, **Dip.Arb.(RFS) F.Arbor A.** **01582 808020 / 07860 453072**

APPENDICES

08
Tree Data

Tree number	Tree type	Height	Stem diameters	Radius of RPA if circle (mm)	RPA (m^2)	Comments	Life expectancy (years)	Assessed BS5837 value category
1	common walnut	12	450	5400	91.6	Very heavily ivy infested; preventing proposer inspection. Cut ivy at base and treat to prevent growth. Tree has been reduced to reasonably good standard. Stem defect at 4.5m +GL.	20+	C1
2	common beech	7	200	2400	18.1	Truncated. Ivy infested. Dominated by 8	10+	C1
3	common beech	7	250	3000	28.3	Truncated. Ivy infested. Dominated by 8	10+	C1
4	common beech	11	450	5400	91.6	Truncated. Ivy infested. Dominated by 8. Strong lean. Beech bark disease. Scrub trunk with hand brush and mild diluted detergent.	20+	C1
5	common beech	12	550	6600	136.8	Truncated. Ivy infested.	20+	C1
6	common beech	12	450	5400	91.6	Truncated. Ivy infested. Dominated by 5	20+	C1
7	bay	8.5	220, 150, 150, 150, 100, 100, 100	4399	60.8	Multi stemmed form, partially topiarized. Some value as local evergreen screen	20+	C1
8	horse chestnut	15	1100	13200	547.4	No access. Large and locally prominent tree with possible skyline presence.	20+	B1

In all cases, in the absence of negative comment on vitality and structure, normal systemic and physiological condition should be considered to apply.

Dependent on time of year of survey, deciduous trees may not have been in leaf at the time of inspection. This may have limited precise identification.

09
Schedule

Trees at 11 Redington Road, London, NW3 7QX

Please read in conjunction with plan 1-38-4293/P2.

Tree number	Tree type	Height	Stem diameters	Radius of RPA if circle (mm)	RPA (m^2)	Comments
1	common walnut	12	450	5400	91.6	Cut ivy at base and treat ivy stumps to prevent growth. Remove ivy outside bird-nesting season (See note below *)
4	common beech	11	450	5400	91.6	Beech bark disease. Scrub trunk with hand brush and mild diluted detergent to reduce infestation.

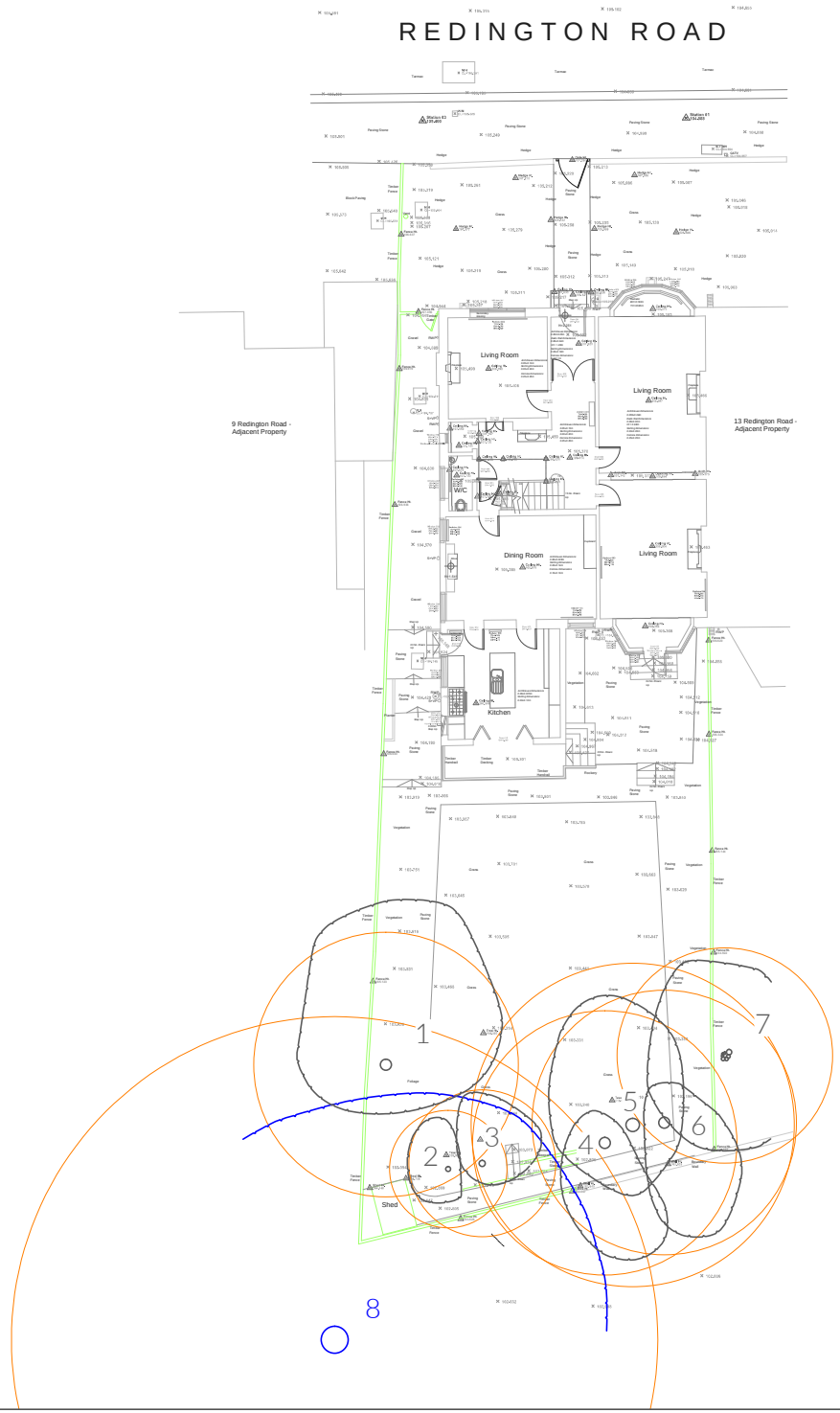
NOTES:
This schedule notifies the LPA, where such notification is required, of intention to prune or remove trees in accordance with TCP Act 1990 Section 211. 42 days after notification should be allowed before proceeding with the work, during which time (and after) the LPA may place a Tree Preservation Order on the tree(s), thus requiring a formal application for any works to living wood.

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

1-38-4293/P1
1-38-4293/P2



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KEY TO COLOURS/LINETYPES USED IN RELATION TO TREES

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

TOOTHED LINE: Tree spread line

DASHED LINE: Understorey spread line

DOTTED LINE: Removed tree spread

NOTES

Do not use for setting out purposes.
All dimensions to be checked on site.

DRG. NAME
TREE VALUE ASSESSMENT AS PER BS 5837:2012 & ROOT PROTECTION AREAS

TEXT
FOR FULL DETAILS OF TREE VALUE PLEASE SEE REPORT REF. 1-38-4293

BASED ON
MOBILE CAD DRG. NO.: 1938-02 GROUND FLOOR PLAN SUPPLIED

SITE ADDRESS
11 Redington Road, London, NW3 7QX

DRG. REF. 1-38-4293/P1
REV. NO. v1
SCALE & SIZE 1:100 @ A1
DATE 9-May-17

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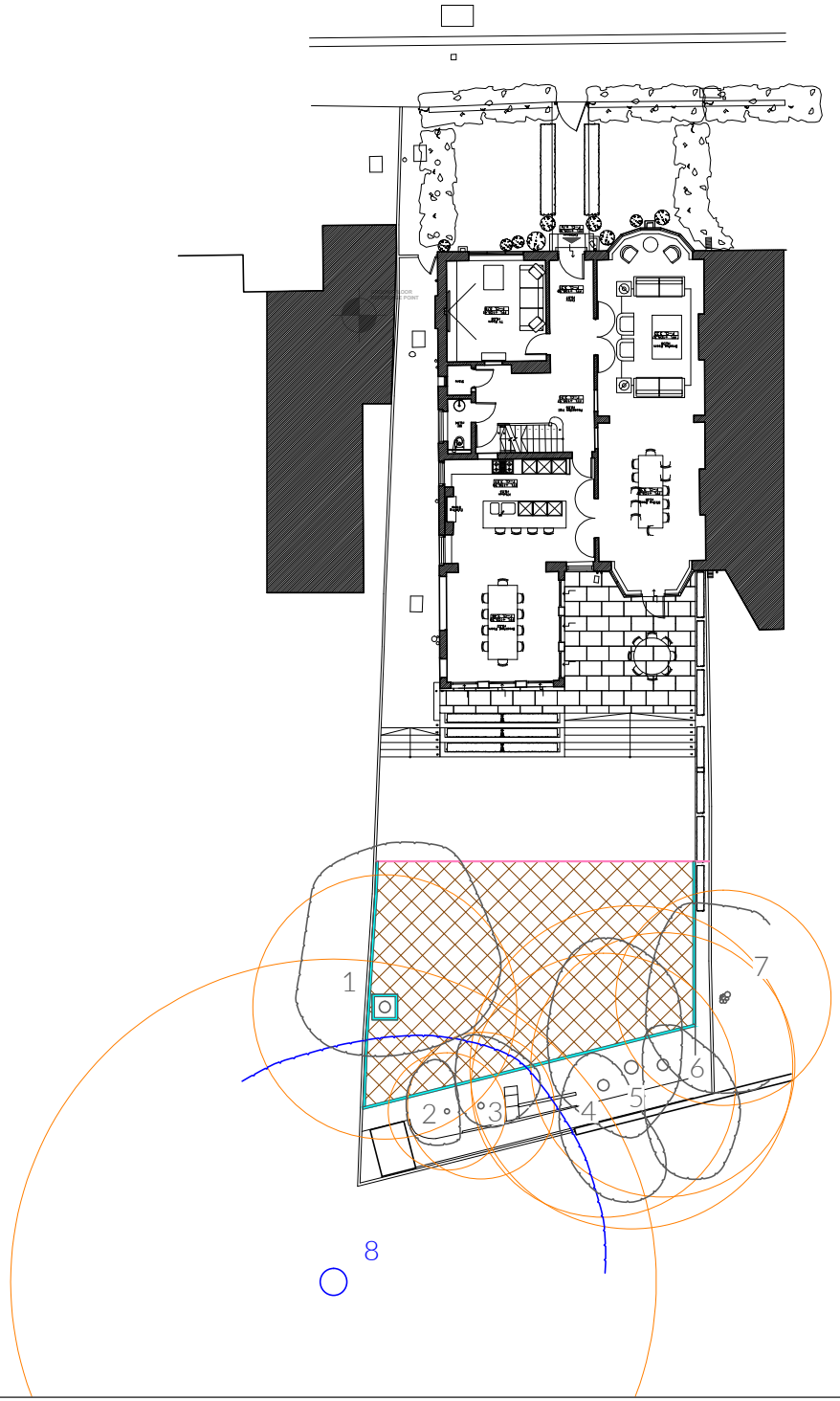

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KEY TO PLAN SYMBOLS/COLOURS USED IN RELATION TO TREES

PINK LINES: Tree Protection Fencing

ORANGE SHAPES: Root Protection Areas

BROWN GRID: method applies

CYAN FILL: method applies

NOTES
Do not use for setting out purposes.
All dimensions to be checked on site.

DRG. NAME
TREE RETENTION & TREE PROTECTION MEASURES (Site Preparation Phase) (Construction Phase)

TEXT
FOR FULL METHOD DETAILS PLEASE SEE REPORT REF. 1-38-4293

BASED ON
MAREK WOJCIECHOWSKI ARCHITECTS DRG. NO.: 17017 PROP 02 GROUND FLOOR PLAN SUPPLIED

SITE ADDRESS
11 Redington Road, London, NW3 7QX

DRG. REF.
1-38-4293/P2

REV. NO.
v3

SCALE & SIZE
1:100 @ A1

DATE
25-May-17

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