1-38-3710

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R E P O R T

on the impact on trees

of proposals for development

at

1 Ardwick Road, London, NW2 2BX

(16th March 2015)

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01
Introduction and Instructions

I am instructed by Metropolitan Development Consultancy Ltd to make an assessment of tree amenity value and condition of trees at 1 Ardwick Road, London, NW2 2BX and of the impact of a proposal for development on such trees. Accordingly, I visited the property on 27th February, 2015 in order to carry out an inspection.

02
Copyright

02.01

03
Notes

03.01
PLANS

1-38-3710/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 British Standard 5837:2012 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
1-38-3710/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.
MDC Ltd. drgs. 7852/11 Rev. A, 7852/21C & 22D.

05
Appraisal

05.01
AMENITY / SCREENING BY TREES AND SHRUBS
The site is a prominent one in full view of an extremely busy arterial road junction. Trees on the perimeter are of some general public amenity value, as they are visible from the roads adjacent. Most of the trees however are of poor form with low life expectancy, and some are net detractors in terms of amenity.

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, - a revision of APN 1, 1996, published 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, 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.

No encroachment on the RPA (or SRP) of any retained tree is entailed. 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
The majority of the proposed trees are located mainly to the E, and most of the retained trees (mainly of small stature) are to the S of the of the proposed extended building. The proposed extended dwelling is in a closely similar position to the existing structure : the existing structure's position in relation to the existing trees has generated some obvious requirement to prune the existing Leyland and Lawson cypresses. Proposed tree planting choices address this factor. The proposed basement will be partly or fully artificially lit. In view of the above I conclude that shading by and perception of trees has been considered (as sections 5.3.4 and 5.6.2.6 of BS 5837:2012 recommend) and appear not to be negative factors.

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 will occur.

05.08
TREE REMOVAL APPRAISAL and REPLACEMENT PLANTING
Please see section 08 for comments on the individual trees proposed for removal. Overall, appropriate replacement tree planting will play an important role in providing for future public and local amenity. The British Geological Survey information for the area indicates that the underlying sub-soil is clay, silt and fine-grained sand. This is typically an excellent medium for tree planting. places no significant constraint on species selection for tree and other planting. See plan for locations:

A= oriental thorn *Crataegus orientalis* 3m , 15L pot
B= evergreen magnolia *Magnolia grandiflora* 'Gallissonniere' 18-20cm girth, 200L pot
C= mulberry (*Morus alba* 'Platanifolia') 14-16cm girth 85 L 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 any trees of significant public amenity value and good form to be removed. Any tree losses will be satisfactorily addressed by proposed planting.

06
<u>Tree Protection Proposals</u>

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 1-7
PLEASE READ WITH PLAN REFERENCE 1-38-3710/P2, APPENDED.
The Methods shall be implemented in the order given unless it is stated to the contrary.

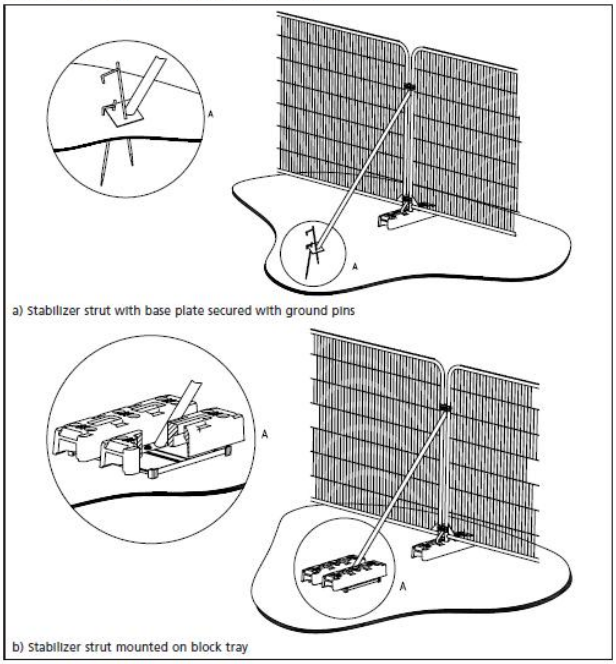
Method 1 : Supervision by an arboriculturist shall take place at key points in the construction process, and additionally whenever required by the architect or LPA. These key stages are :

1) **At site possession by contractor, outline all tree protection measures with site agent and resolve any issues arising. Ensure tree work is carried out to specification and sign off. Ensure protective fencing and hoarding 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) **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 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.

Figure 3 **Examples of above-ground stabilizing systems**



a) Stabilizer strut with base plate secured with ground pins

b) Stabilizer strut mounted on block tray

Below the crowns of tree/shrub S3, in order to avoid unnecessary pruning, hoarding consisting of manufactured boards at least 11mm thick (hoarding), shall be 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.

Method 4 : 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 5 : DWARF WALL REFURBISHMENT/CONSTRUCTION
This method shall apply in cyan fill zone on plan. In refurbishing/constructing (dwarf) walls for the planter, existing footings shall be used wherever possible. New footings shall be confined to isolated pads, dug initially to trial positions. Only hand tools shall be used. No roots over 20mm diameter shall be cut. Concentrations of 3 or more roots of 10mm to 20mm diameter within 150mm shall be deemed to be inviolate and shall entail the moving of the trial pit to a different location. Trial pits to determine suitable locations shall be taken to 0.6m below ground level. Pre-cast concrete lintels or modern railway sleepers shall be placed with underside no lower than existing ground level or no lower than any existing root-free sub-base. Brick slips may be affixed to a rebate in any concrete lintel if a decorative brick finish is required. An impermeable membrane shall be placed in any excavation for pads to protect root-bearing soil during concrete casting.

Method 6 : GROUND PREPARATION FOR TREE PLANTING AREAS
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 7 : 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
<u>General</u>

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.

16th March 2015
Signed:

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

APPENDICES

08
Tree Data

Tree number	Tree type	Height range (m)	Height	Stem diameters	Radius of RPA if circle (mm)	RPA (m^2)	Comments	Life expectancy (years)	Assessed BS5837 value category
1	Lawson cypress	5–10	7	150	1800	10		20+	C1
2	*Elaeagnus*			150	1800	10		10+	C1
S3	*Pittosporum*	<5	4	130	1560	8	Small tree	20+	B1
4	Lawson cypress	<5	4	150	1800	10	As for 5	<10	U
5	Lawson cypress	<5	4	180	2160	15	Truncated in decline	<10	U
6	Lawson cypress	<5	4	200	2400	18	In decline	<10	U
G7	Lawson cypress		9	180	2160	15		20+	C1
8	Leyland cypress	5–10	9	550	6600	137	Some screening value but heavily reduced and of poor form	20+	B1
9	Lawson cypress		7	200	2400	18		10+	C1
10	Lawson cypress	5–10	7	160, 180	2889	26	Suppressed	10+	C1
11	Lawson cypress	5–10	7	240	2880	26	Truncated	10+	C1
12	Lawson cypress	5–10	7	200, 200	3394	36	Truncated	10+	C1
13	Lawson cypress		9	320	3840	46	Some screening/softening value but conflicts directly with proposed wall.	20+	B1

Tree number	Tree type	Height range (m)	Height	Stem diameters	Radius of RPA if circle (mm)	RPA (m^2)	Comments	Life expectancy (years)	Assessed BS5837 value category
14	*Magnolia*		6	180	2160	15		40+	C1
15	Lawson cypress		6	250, 150, 120	3783	45		20+	C1
16	false acacia	5–10	6	120	1440	7		40+	C1

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

09
Schedule

Trees at 1 Ardwick Road, London, NW2 2BX

Please read in conjunction with plan 1-38-3710/P2.

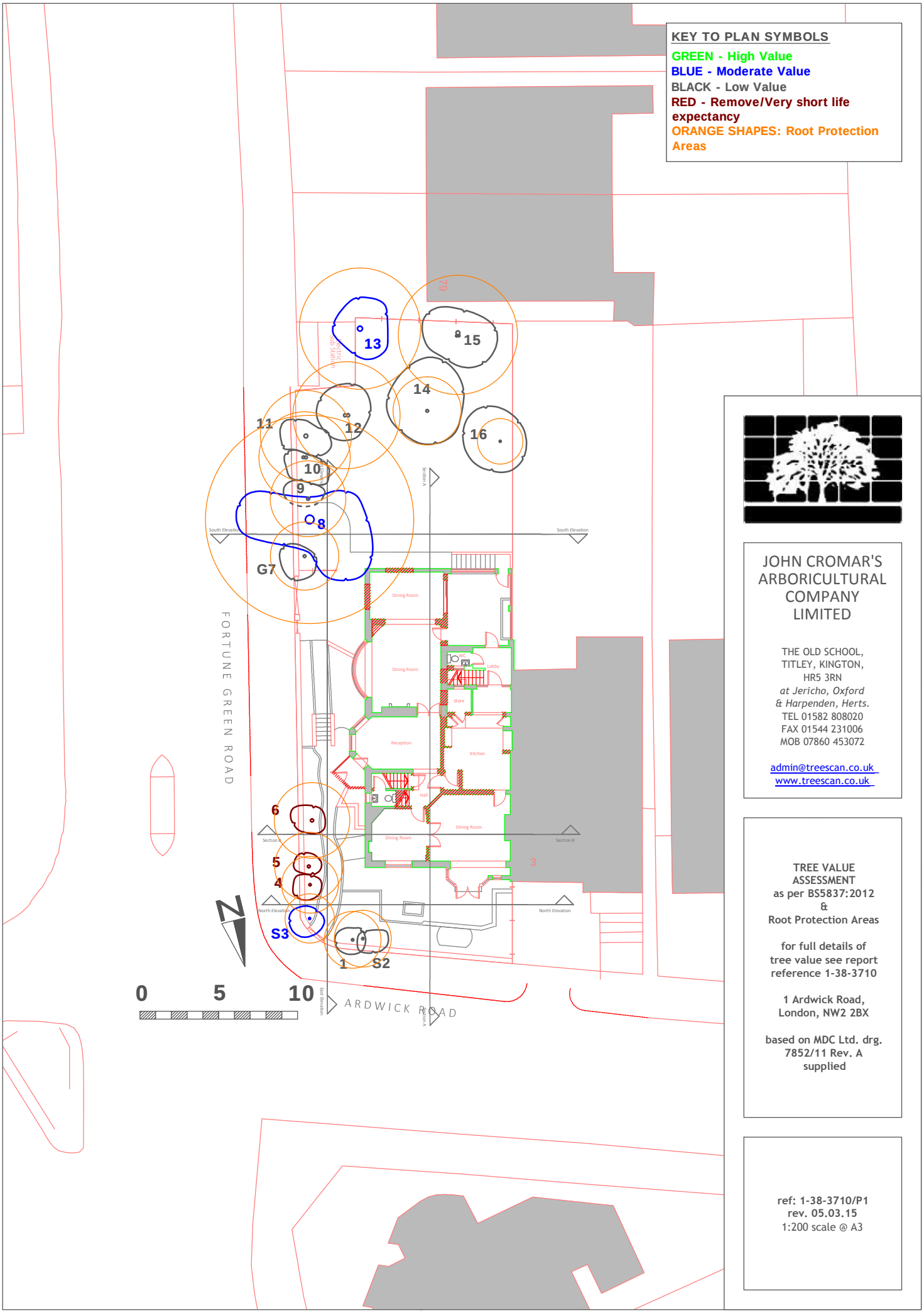
Tree number	Tree type	Height	Stem diameters	Comments
4	Lawson cypress	4	150	Remove including stumps.
5	Lawson cypress	4	180	
6	Lawson cypress	4	200	
G7	Lawson cypress	9	180	
8	Leyland cypress	9	550	
9	Lawson cypress	7	200	
10	Lawson cypress	7	160, 180	
11	Lawson cypress	7	240	
12	Lawson cypress	7	200, 200	
13	Lawson cypress	9	320	

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

1-38-3710/P1
1-38-3710/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
13
15
14
16
12
11
10
9
8
G7
6
5
4
S3
1
S2
3
FORTUNE GREEN ROAD
ARDWICK ROAD
0
5
10
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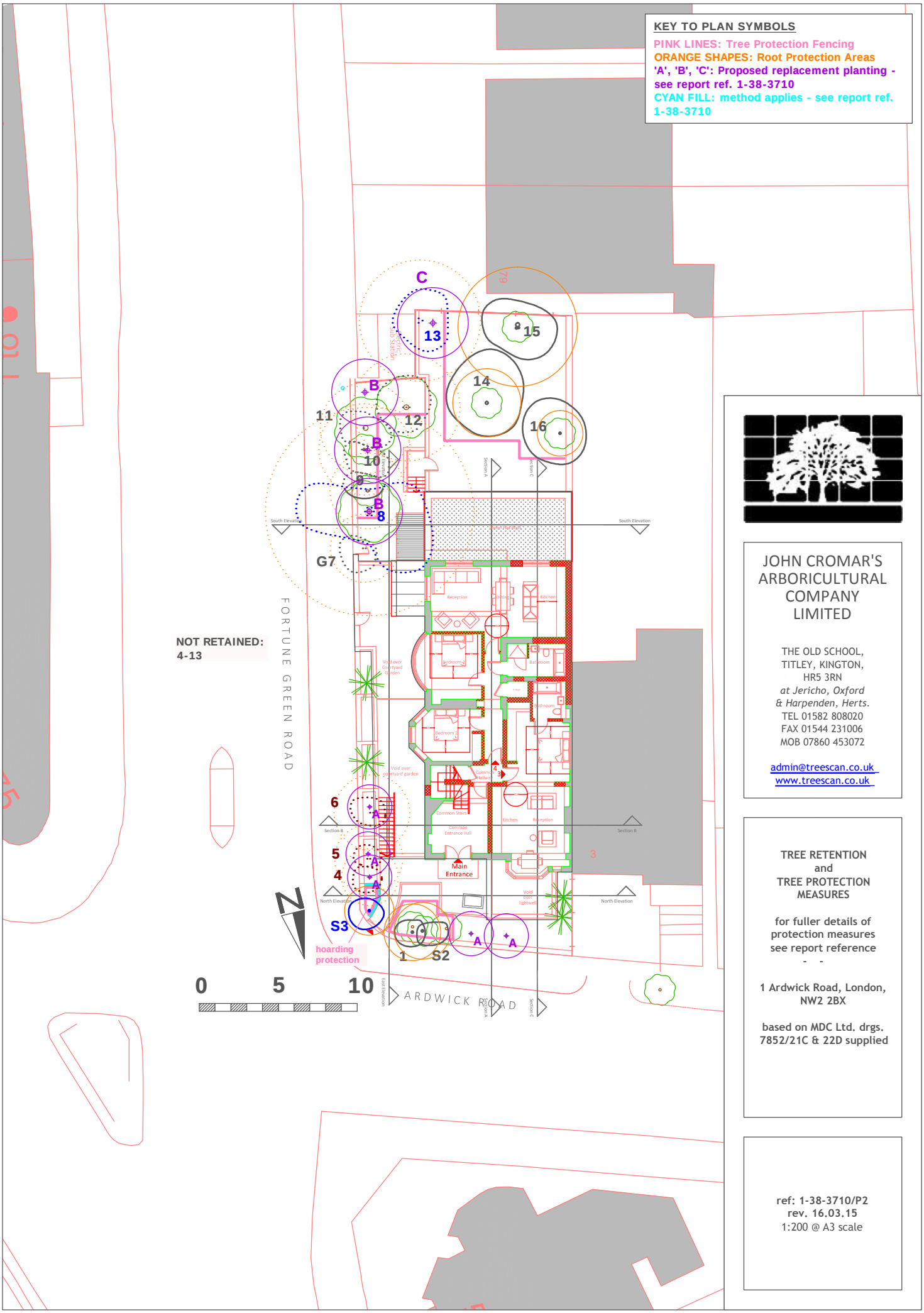
TREE VALUE ASSESSMENT
as per BS5837:2012
&
Root Protection Areas
for full details of
tree value see report
reference 1-38-3710
1 Ardwick Road,
London, NW2 2BX
based on MDC Ltd. drg.
7852/11 Rev. A
supplied
ref: 1-38-3710/P1
rev. 05.03.15
1:200 scale @ A3


KEY TO PLAN SYMBOLS
PINK LINES: Tree Protection Fencing
ORANGE SHAPES: Root Protection Areas
'A', 'B', 'C': Proposed replacement planting - see report ref. 1-38-3710
CYAN FILL: method applies - see report ref. 1-38-3710
C
13
15
14
16
B
11
12
10
9
8
G7
NOT RETAINED:
4-13
FORTUNE GREEN ROAD
6
5
4
S3
hoarding protection
1
S2
A
0
5
10
ARDWICK ROAD
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TREE RETENTION
and
TREE PROTECTION
MEASURES
for fuller details of protection measures see report reference
- -
1 Ardwick Road, London, NW2 2BX
based on MDC Ltd. drgs. 7852/21C & 22D supplied
ref: 1-38-3710/P2
rev. 16.03.15
1:200 @ A3 scale