

1-38-3060

R E P O R T

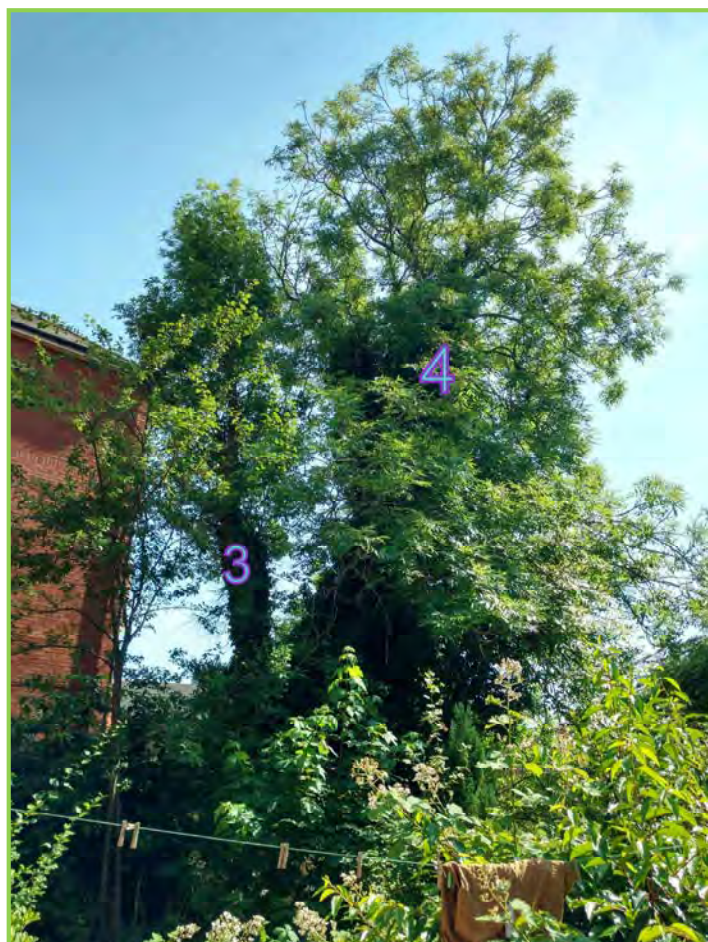
on the impact on trees

of proposals for development

at

34 Alexandra Road, Hemel Hempstead, HP2 5BS

(6th July 2017)



Registered Consultant of the Arboricultural Association
John Cromar, Dip. Arb. (RFS), F.Arbor A.



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01

Instructions and Background

01.01

I am instructed by Bill Cleeve to make an assessment of tree amenity value and condition of trees at 34 Alexandra Road, Hemel Hempstead, HP2 5BS and of the impact of a proposal for development on such trees. Accordingly, I visited the property on 19th June, 2017 in order to carry out an inspection.

01.02

I note :

From: Andrew Parrish [mailto:Andrew.Parrish@dacorum.gov.uk]

Sent: 03 May 2017 18:00

To: Jonathan Tucker

Subject: 34 Alexandra Road, HH - 4/00749/17/FUL

Dear Jonathan,

I refer to your recent application in connection with the above.

The Tree Officer and I visited the site today.

There are 2 mature trees both situated on adjacent properties that would be affected by this development. A mature ash situated in Albion House and a mature yew situated in Alex Court. Without detailed information about site levels and any proposed changes to the existing levels, it would be difficult to fully assess the impact of the proposed development on these trees. The Tree Officer therefore recommends that you should provide the following documents:

- A tree survey to include Root protection Areas of trees to be retained, a tree protection plan and an Arboricultural Method Statement. These should identify any negative impact on the above trees and their RPA and should include details of protective measures. The Tree Survey should be carried out in accordance with the British Standard 5837:2012, Trees in relation to Design, Demolition and Construction Recommendations.
- We note that car parking is proposed within the rear garden area. However, it is unclear how this will be accommodated without impacting on tree roots as there is a substantial level change to the garden which would appear likely to need built up ground to accommodate, therefore harmful to tree roots. A plan / section showing existing / proposed levels should be provided.

The matters raised above are considered below.

02

Copyright

02.01

Copyright is retained by the writer. This is a report for the sole use of the client(s) named above. It may be copied and used by the client in connection with the above instruction only. Its reproduction or use in whole or in part by anyone else without the written consent of the writer is expressly forbidden. The appended schedule of tree work, and the plan, may, without the written consent of the writer, be reproduced to contractors for the sole purpose of tendering.

03

Notes

03.01

PLANS

1-38-3060/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

1-38-3060/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 :

MK SURVEYS DRG. NO.: 21268 rev. 1

NETT ASSETS DRG. NO.: 1488-block 200617

05

Appraisal

05.01

AMENITY / SCREENING BY TREES AND SHRUBS

No trees on or adjacent to the site are of any significant general public amenity value, as they are not visible from any truly public viewpoint. Certain trees are of considerable strictly local amenity value to owners / users of the site, and to those of adjoining properties.

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. 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
4	ash	141.88	6.27	4.42	Proposed footprint
G5	yew	115.98	9.02	7.78	Proposed parking

In the writer's now extensive experience gained over more than 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. N.B. - no root cutting is proposed here in connection with G5. Please note that build-up of levels is not automatically damaging to trees : it is a matter of degree and of constitution of

the fill, as recognized in BS 5837:2012 section 7.4.2.3, which restricts permanent impermeable hard surfacing of any existing unsurfaced ground within the RPA of trees to be retained to 20% of the RPA.



The condition of tree 4 reasonably precludes it being a constraint on development ; the area of proposed encroachment is also very modest and of no consequence to tree health or vitality. 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 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 arboricentric methods as proposed below (e.g. Method 8) to reduce impacts on root systems of retained trees.

05.05

PERCEPTION OF TREES

The majority of the significantly-sized retained trees are located mainly to the SE of the proposed building.

Room use on relevant elevation	Comments
Bedrooms on 4 th Floor	
Study / living rooms 3 rd floor	Study to unit 8 dual lit
Bedrooms. Living / dining on 1 st and 2 nd	Living / dining on 1st and 2nd are dual lit
	Ground floor = parking

In my view the internal layout of the proposed dwelling has been designed so as to generate minimum shading inconvenience. Tree 4 outside the curtilage and considered of short safe useful life expectancy is thus not a constraint on development and reduction in height or removal of this tree is, reasonably, anticipated. 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

SUPERSTRUCTURE AND TREE APPRAISAL - TREE PRUNING

I note from the elevation drawings supplied that some minor encroachment on the crown of retained tree 4 will occur. It is of note however that the form of the trees is such that the defining branch structure is well above or clear of the proposed building line. The tree does not, for the purposes of the development require major pruning, and the species involved responds well to pruning. As noted above the tree is however suspected to be decayed and may be dangerous. This may require more severe pruning or removal. The minor pruning required is of no importance to the health or appearance of the retained items – trees – , and can easily be addressed by tree surgery in accordance with BS5837:2012 5.3.4 (c) NOTE 2, 7.7.3, etc., and is within the bounds of good arboricultural practice / British Standard 3998:2010 'Tree work – Recommendations'.

Tree surgery is proposed to be to British Standard 3998:2010 'Tree work – Recommendations'. A schedule for the use of a contractor appears below.

05.07

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 some role in providing for future public and local amenity. The British Geological Survey information for the area indicates that the underlying sub-soil is chalk. This places no significant constraint on species selection for tree and other planting. See plan for locations:

A = hornbeam (*Carpinus betulus* 'Frans Fontaine') 16-18cm girth 85L pot

B = field maple (*Acer campestre* 'Elegant') 16-18cm girth 85L pot

05.08

SUPERVISION

Supervision by and regular communication with an arboriculturist is a high-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.

05.09

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."

05.10

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

05.11

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 to be removed. Any tree losses will be satisfactorily addressed by proposed planting.

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 1-10

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 all tree protection measures with site agent and resolve any issues arising.
- 2) 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 any site cabins, mixing sites for mortars, disposal-to-skip sites, etc., are located appropriately, and sign off.
- 3) Supervise laying of temporary or permanent 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 any removal or adjustment of protective fencing and sign off.

PREPARATION / DEMOLITION

PLEASE READ WITH PLAN REFERENCE 1-38-3060/P2, APPENDED.

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

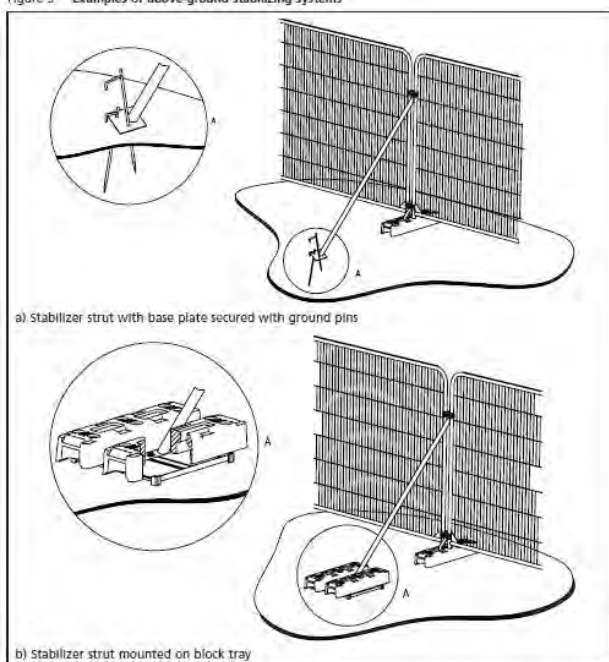
Method 2 : TREE WORK

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; that is, pinned to the substrate with re-bar. 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

Figure 3 Examples of above-ground stabilizing systems



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 planting is proposed.

Method 4 : GROUND SURFACE HANDLING and PROTECTION

This method shall apply in the zones hatched **blue** on plan. No 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 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 shall be used for pedestrian access

only. Scaffold erection shall take its bearing directly off the ground surface via spreader plates/scaffold boards.

Method 5 : DEMOLITION

This method shall apply generally. Demolition shall be by 'top down, sides in' method. Arisings shall be removed for disposal off site. Any contaminated soil shall be removed with hand tools only and removed from site.

CONSTRUCTION

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. Services shall be worked under/over/around/ between roots so as not to cut or damage any larger than 20mm diameter. Roots 20mm or more in diameter unearthed shall be temporarily protected with bubble-wrap and insulating or gaffer tape.

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 : ROOT PRUNING

This method shall apply within any RPA (orange circles). Any roots encountered shall be trimmed to the edge of excavation using a sharp edge tool such as handsaw or secateurs; the cuts shall be made at right angles to the long axis of the root, and in accordance with BS3998:2010, 8.6. An HDPE membrane shall be placed between any root-bearing soil and any wet concrete to be poured. Impermeable sheeting (to exclude wet concrete) shall be laid and secured locally by temporary weighting as required. Concrete casting shall take place without disturbing this protective layer.

Method 8 : PERMANENT POROUS CAR PARKING

This method shall apply in zone gridded green on plan. No conventional concrete kerb haunching shall be used. Edging shall be formed of kerb sections drilled and pinned through to the substrate with 20-25mm dia.

re-bar and the holes sealed. If edge restraint is of tanalised timber 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. (If edge restraints are required to be flush with adjacent ground levels, topsoil shall be loose-tipped and graded by hand to slope to existing levels. Peg holes shall be sealed with timber pegs and cut flush). A 2D geotextile such as 'Treetex T300' type, shall be laid directly on the ground surface, overlaid by a 3D 'CellWeb' type 100 or 150mm or 200mm deep (available from e.g., Geosynthetics Ltd. 01455 617139), depending on envisaged loads backfilled with 40-60mm CLEAN STONE – NO FINES (typically sold as 'track ballast'), and may also be augmented where required to function as a SUDS feature. A further 2D geotextile shall be laid. Levels can be finely corrected by use of granite chippings - NO FINES. Slabs or pavements shall be laid open-jointed and the joints rammed with granite chippings, or the surface dressed with shingle. For a resin-bound open-pore gravel finish a further 2D geotextile should be laid over the level-correction layer. (All design subject to engineering approval, but used on other sites and known to be practicable and reliable).

LANDSCAPING PHASE

Method 9 : 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 0.45m 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 : 2015 topsoil) shall be laid to replace soil volume removed and to a minimum depth of 0.45m 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. Whips shall similarly be planted so that the root collar lies at finished ground level, and shall be protected with proprietary growing tube (staked). 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 10 : 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.

6th July 2017

Signed:



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

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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	<i>Thuja</i> 'Rheingold'	1.8	75	900	2.5	Tiny tree	40+	C1
2	Japanese maple	2	100	1200	4.5	Attractive but only of limited public amenity value owing to scale; replaceable by planting	40+	C1
3	ash	13	360	4320	58.6	Heavily ivied; Etiolated and dominated by 4	40+	C1
4	ash	15	560	6720	141.9	Heavily ivied. Barkless zone extending at least 90 degrees around basal perimeter. Tap test for sonority indicated a decayed trunk base. Tree may be dangerous. Ivy prevented full inspection: outside site on adjoining land. Cannot reasonably be considered a constraint on development.	<10	U
G5	yew	8	400, 300, 80	6076	116.0	Outside site on adjoining land	20+	C2
6	damson	6	60, 60	1018	3.3	Very poor form	20+	C1

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.

Schedule***Trees at 34 Alexandra Road, Hemel Hempstead, HP2 5BS***

Please read in conjunction with plan 1-38-3060/P2. Trees outside the curtilage of the property may be included. Boundaries where marked should always be treated as notional, and no statement either implied or explicit as to the ownership of trees should be taken as definitive or precise. **As applicable, the consent to, or acquiescence to, and communication of the timing of the recommended remedial works, as far as the relevant owner is concerned, should be checked before any such trees are actually treated.**

Tree number	Tree type	Height	Stem diameters	Comments
1	<i>Thuja</i> 'Rheingold'	1.8	75	Remove including stumps
2	Japanese maple	2	100	
3	ash	13	360	Remove : grind out stump to 250mm below ground level.
4	ash	15	560	Prune to 6m radial spread on NW side only.
G5	yew	8	400, 300, 80	Prune to clear 2m above ground level where overhanging the site.
6	damson	6	60, 60	Remove including stump

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.

10

Plans

1-38-3060/P1

1-38-3060/P2



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GREEN - High Value
BLUE - Moderate Value
BLACK - Low Value
RED - Remove/Very short life expectancy
ORANGE SHAPES: Roof Protection, Bump

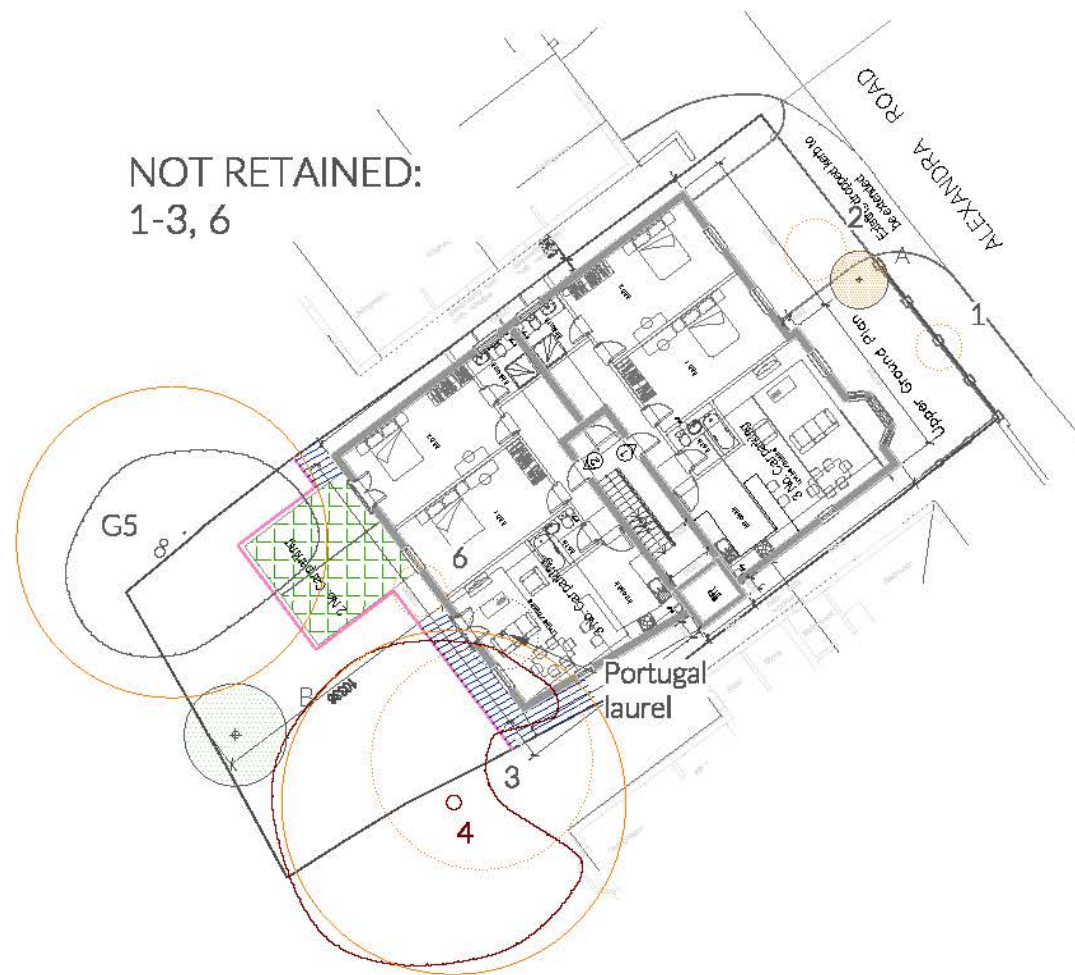


Donations for selling out papers.
All documents to be checked on the

BASED ON
MK SURVEYS DRG. NO.: 21268 rev. 1
SUPPLIED

DRG. REF.	REV. NO.
1-38-3060/P1	v2
SCALE & SIZE	DATE
1:100 @ A1	26-Jun-17
0	5





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KEY TO PLAN SYMBOLS/COLOURS
USED IN RELATION TO TREES

	PINK LINES: Tree Protection Reading
	ORANGE SHAPES: Root Protection Areas
	DARK BLUE HATCH: method applies
	GREEN HATCH: ground protection
	1) Proposed retention planting
	2) Proposed retention planting

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

DRG. NAME
TREE RETENTION & TREE
PROTECTION MEASURES

TEXT
FOR FULL METHOD DETAILS
PLEASE SEE REPORT REF. 1-38-3060

BASED ON
NETT ASSETS DRG. NO.: 1488-block
200617 SUPPLIED

SITE ADDRESS
34 Alexandra Road, Hemel Hempstead,
HP2 5BS

DRG. REF.	REV. NO.
1-38-3060/P2	v2
SCALE & SIZE	DATE
1:200 @ A1	6-Jul-17
0 5 10	