

1-38-3740/4

REPORT

on the impact on trees

of proposals for development

at

3 Olivia Gardens, Harefield, UB9 6QF

(21st January 2020)



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



JOHN CROMAR'S
ARBORICULTURAL
COMPANY

LIMITED

The Old School
Titley
HR5 3RN
*at Wheatley, Oxford
& Harpenden, Herts.*

TEL 01582 80 80 20
FAX 01544 231 006
MOB 07860 453 072

admin@treescan.co.uk
www.treescan.co.uk

01

Introduction and Instructions

I am instructed by Chris Sawden to make an assessment of tree amenity value and condition of trees at 3 Olivia Gardens, Harefield, UB9 6QF and of the impact of a proposal for development (a dwelling) on such trees. Accordingly, I visited the property on 30th January, 2019 in order to carry out an inspection.

I note that a proposal for a dwelling was granted on 4th July 2017 at appeal, ref: APP/R5510/W/17/3167771.

I note further that pre-app comments include :

Plan Numbers: 1681/26 - received 26 Jul 2019
1681/L1 - received 26 Jul 2019
1681/2 Rev. A - received 26 Jul 2019
1681/3 - received 26 Jul 2019
1681/1 Rev. A - received 26 Jul 2019
1681/25 Rev. A - received 26 Jul 2019
Planning, Design and Access Statement - received 26 Jul 2019
Tree Report - received 26 Jul 2019

5. Other

Trees/Landscaping

There are no trees of merit on the site, however, there is an oak close to the side boundary on adjacent land. There are no TPO's affecting the site, however, the site lies within the Harefield Village Conservation Area, a designation which protects trees. The site has been the subject of a number of applications. The current proposal is to re-site the detached garage and build a detached house with a relatively large footprint. A tree report by John Cromar has identified and assessed the condition of the oak, T1 on the schedule, and an ash. The off-site oak has been graded 'B' (fair) whose condition and value make it worthy of retention in terms of development, with a predicted useful life expectancy of 40(+) years. The on-site ash, T2, is a category 'C' tree of poorer quality and no particular merit. The report, dated March 2019, concludes that it will be feasible to construct the house, without damaging the roots or health of the oak, subject to adherence to the prescribed tree protection. The tree protection methodology in chapter 6 includes the recommendation that an arboriculturist be appointed to oversee the the contract at key points in the construction process. **It should be noted that this is recommended only, not confirmed.** While there is no objection to the

assessment and tree protection described, the cross-section diagram in 5.07 confirms that the canopy of the oak will oversail the proposed roofline from day 1. At 5.05 the author considers the perception of trees in relation to the building and considers that it will only cause morning shading at certain times of year and that the layout of the house should minimise the inconvenience due to shading. In the short-term the tree will be likely to require trimming back to accommodate a <3 metre zone around the edge of the building to accommodate access and scaffolding during the construction phase. The assessment of perception fails to address the fact that future occupants of the house are unlikely to tolerate a large tree oversailing the roof of their property. At best the roof and gutters are likely to be regularly affected by leaf and acorn fall with occasional pieces of deadwood. Furthermore, the tree may continue to put on extension growth over its 40(+) year expected life which will exacerbate the situation. In short, the relationship of the existing oak and the proposed building is unsustainable and, if permitted, will result in regular pressure trim back, or remove, a fine tree. For the reasons above, this application is unacceptable as it fails to safeguard a 'B' grade oak within a Conservation Area, which is contrary to policies BE23, BE38 and BE39.

The above are cited for reasons of general consideration in terms of their principles insofar as these may be considered to apply to the current proposal.

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

1-38-3740/P1 gives an approximate representation (in plan) of actual crown form. On this occasion my client has obtained via his architect a 360° laser survey of the tree and this accuracy has facilitated an adjustment to the canopy of the tree as shown on the above plan.

It 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

1-38-3740/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 :

Edge Architecture drg. nos.: 1911 104, 1911 105, 1911 106

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. One tree, oak 1 is of considerable strictly local amenity value to owners / users of the site, and to those of adjoining properties and there may well be partial views of the tree from further afield. It has however been heavily reduced on at least two occasions, and has been pruned very heavily on the north east side (the opposite side to the site).

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
1	oak	454.20	20.98	4.62	Proposed dwelling
1	oak	454.20	2.33	0.51	Proposed garage

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. 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 arboricentric methods as proposed below to reduce impacts on the root system of the principal retained tree, oak 1.

05.05

PERCEPTION OF TREES

Tree 1 is located to the E of the dwelling. This is typically an unproblematic orientation, entailing only some morning shading at certain times of the year. It is clear that the internal layout of the proposed dwelling has been designed so as to generate minimum shading inconvenience. The kitchen/dining area – the closest habitable room to the oak – is triple-lit (a total of 9 windows are proposed on three elevations). Similarly, above this room, on the first floor, a dual-lit bedroom is proposed, with no window facing the tree.

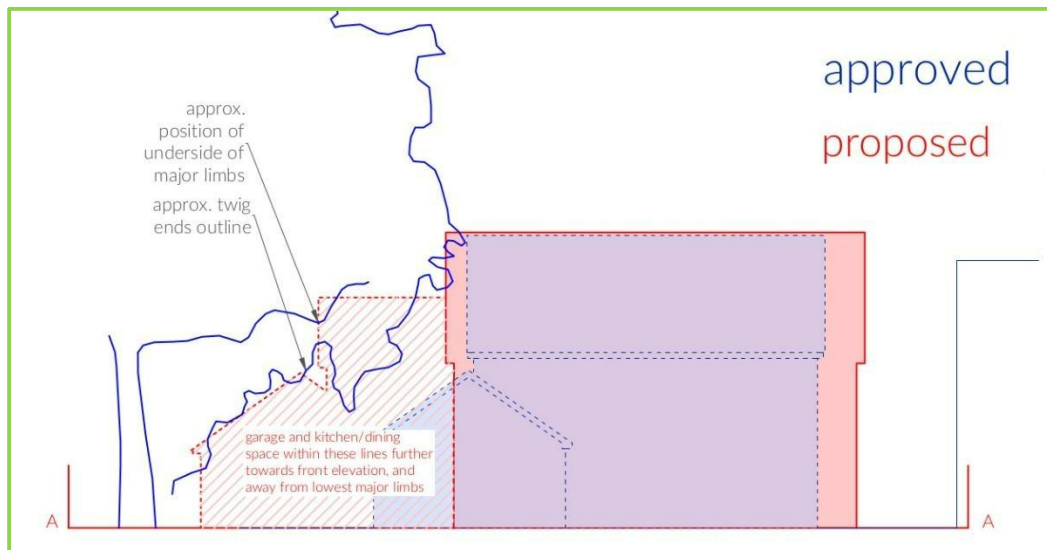
05.06

TREE PRUNING

As can be seen from the appended plan, the proposal dwelling does not to any meaningful degree lie under the tree's crown, nor does the position of the dwelling encroach materially on the RPA. The appeal decision giving consent for a previous scheme noted :

could safeguard the health of the oak during construction. The appeal scheme would bring residential development in a closer relationship with the oak tree. However, the proposed dwelling would be adequately separated from the oak tree, and I saw that the oak's crown spread and height would leave considerable proportions of the appeal scheme's garden free from its shade or leaf drop. I thus consider that the proposed development would not lead to significant additional pressure for major pruning or other works to the tree to an extent that would undermine its contribution to the wider leafy character of the area.

This observation I assert continues to be valid in this proposal, the proposed



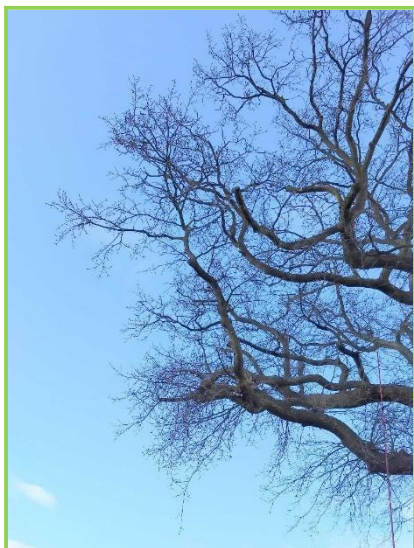
(compared above) being slightly closer to the tree, albeit not to any significant degree.

05.07

SUPERSTRUCTURE AND TREE APPRAISAL - TREE PRUNING

It should further be noted carefully that the tree has historically been reduced in spread. Branches have been completely removed on the NE side of the tree, above the rear garden of 14, Wickham Close and a much less extensive reduction has been carried out above the proposal site.

In this respect it is fair to note that in 2001 the Inspector in refusing the Appeal, made a *non sequitur*. The fact that the oak tree had been pruned ("lopped.. on the eastern side") does not lead to a necessity for space for "allowance for future growth" over the site especially as the most severe pruning had been carried out on the NE side, (not over the site) but to a requirement, for safety reasons, for a *continuation of the pruning regime*, i.e. periodic pruning to near the reduction points all round the tree (see photo below). This would also typically include removal or stabilisation of dead wood.



Periodic pruning is thus very clearly established as required in perpetuity *for safety reasons*, as branches growing from the cut ends of the major branches (see left) on all sides of the tree will tend to be insecurely attached to the tree and thus if these become large they can fail under wind loading. This will tend to keep the tree, for reasons unconnected with the proposed development to around the present dimensions, i.e., hardly overhanging the house. In view of all 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.

An assertion is also made in the pre-application comments listed above,

viz:-

minimise the inconvenience due to shading. In the short-term the tree will be likely to require trimming back to accommodate a <3 metre zone around the edge of the building to accommodate access and scaffolding during the construction phase. The assessment of

to the effect that the tree will require short-term cutting back to accommodate a (less than?) 3m zone around the edge of the building to accommodate access. The wording is somewhat obscure, as a typical zone for scaffolding is no more than 1.2m wide, and there is no requirement in this proposal for pruning any branches to accommodate access at ground level, this being in any case specifically excluded by the methods proposed and shown on the plan 1-38-3740/P2. These methods do not place any significant constraint on practical construction operations : site access does not need to include the zone below the tree.

05.08

I note further:

perception fails to address the fact that future occupants of the house are unlikely to tolerate a large tree oversailing the roof of their property. At best the roof and gutters are likely to be regularly affected by leaf and acorn fall with occasional pieces of deadwood. Furthermore,

Yet it is a matter of record that Inspector G I Fort, in allowing the 2017 Appeal, stated:

'The appeal scheme would bring residential development in a closer relationship with the oak tree. However, the proposed dwelling would be adequately separated from the oak tree, **and I saw that the oak's crown spread and height would leave considerable proportions of the appeal scheme's garden free from its shade or leaf drop.** I thus consider that the proposed development would not lead to significant additional pressure for major pruning or other works to the tree to an extent that would undermine its contribution to the wider leafy character of the area.

I assert that this remains an accurate and reasonable observation when applied to the current proposal. It is somewhat surprising that on the practicalities of gutters becoming 'affected by leaf and acorn fall' tree officers quite regularly fail to give adequate weight to the very simple precautions that can be taken to prevent this ever becoming a significant irritation, for example gutter guards or 'gutter hedgehogs'. Furthermore, any property requires maintenance, and as any homeowner will know, annual clearing of the gutters turns up leaves that have blown from perhaps over half a mile or more away.

It is certainly time given the changed circumstances in which not only this borough but the entire planet finds itself, for these minor inconveniences of residential development near trees to be set aside, and more thoroughly 'talked down'. In any case, a responsible local authority such as this one

would rightly refuse to give consent for inappropriate pruning that was generated only by such minor concerns.

05.09

PLANTING

It should also be noted in this application that no trees are here proposed for removal. The British Geological Survey information for the area indicates that the underlying sub-soil is gravel. This places no significant constraint on species selection for tree and other planting. See plan for proposed locations:

A = mixed native hedging – English privet (*Ligustrum vulgare*), smooth leaved holly (*Ilex aquifolium* 'JC van Tol'), native barberry (*Berberis vulgare*), (*Lonicera periclymenum*) hedging whips 90-120cm - 3 per linear metre

B = Judas tree – (*Cercis siliquastrum*) 12-14cm girth, 85 L pot.

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 to be removed.

05.13

SUPERVISION

Supervision by and regular communication with an arboriculturist is typically an 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 **OVERVIEW** below.

05.14

Note to LPA : if the Authority is minded to grant consent, it is invited to consider:

- a) the incorporation of the specific *order of implementation* of the arboricentric methods below into any Conditions applied.
- b) to specify in a Condition that any Construction Management Plan incorporates all the arboricentric methods herein.

Such measures are likely to maximise tree protection.

06

TREE PROTECTION

06.01

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.

Supervision by an arboriculturist appointed directly by the client (**not the main contractor**) should take place at key points in the construction process, and additionally whenever required by the architect, client, main contractor or LPA. These key stages are :

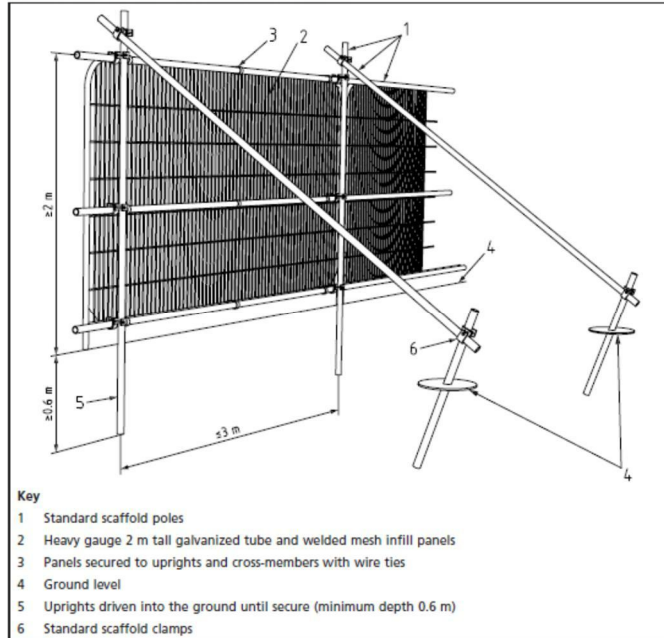
- 1) **At site possession by contractor, outline all tree protection measures with site agent and resolve any issues arising.**
- 2) **Ensure remedial tree work including any minor accommodatory tree work required for erection of scaffolding near trees is carried out to specification and sign off. Ensure 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 lifting of hard surfacing near trees.**
- 4) **Supervise laying of temporary or permanent geotextile combination ground protection and sign off.**
- 5) **Attend as required to supervise digging for and the laying of lighting cable ducts or services.**
- 6) **Approve any removal or adjustment of tree protection and sign off.**

PREPARATION / DEMOLITION

PLEASE READ WITH PLAN REFERENCE 1-38-3740/P2, APPENDED.

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

Figure 2 Default specification for protective barrier



Method 1 : TREE PROTECTION FENCING

This method shall apply where indicated by **pink** lines. Tree protection fencing shall be erected, in accordance with the heavy-duty specification - BS5837:2012 section 6.2.2.2., Figure 2 : No ground levels reduction or excavation shall take place within (=the tree side of) the fence lines.

No fires shall be made on any part of the site, or within 20m of any tree to be retained. No storage of materials shall be made within the protective fences.

Method 2 : 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 only. A 2D geotextile membrane, such as 'Ekotex' 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. Any scaffold erection shall take its bearing directly off the ground surface via spreader plates/scaffold boards.

CONSTRUCTION

Method 3 : ROOT PRUNING

This method shall apply within only the RPA (**orange** circle) of tree 1. The excavation shall be made with hand tools only. 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 /

taping as required. Concrete casting shall take place without disturbing this protective layer.

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 the RPA of tree 1 (orange circle).

1) The trench shall be opened with an air-spade to required depth. 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. Services shall be worked under/over/around/ between roots so as not to cut or damage any larger than 20mm diameter.

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. Services shall be worked under/over/around/ between roots so as not to cut or damage any larger than 20mm diameter.

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.

LATE CONSTRUCTION and LANDSCAPING PHASE

Method 5 : REMEDIAL ROOT TREATMENT

This method shall apply in the zone of **green roundels**. Holes in the ground shall be made on a 1m x 1m spacing with a pinch bar to a depth of 20 cm and width of 40mm. 40g (exactly) of sucrose (sugar) shall be dissolved in 1 litre of water and poured into each hole. Treatments should be applied as soon as possible after root cutting but only once in one growing season (March to October). The solution shall be applied gradually to prevent overflow.

Method 6 : PERMANENT END-USER FENCING

Where any such fencing is proposed within root protection areas (**orange** circles), post holes 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. Roots 20mm or more in diameter unearthed shall be temporarily protected with bubble-wrap and insulating or gaffer tape while rest of hole is dug. It should be borne in mind that the presence of large numbers of roots >20mm in diameter may effectively prevent completion of post hole, and this would be sufficient reason to terminate the operation and move post hole to a different location. If a root >20mm is inadvertently damaged, it shall be retained *in situ* for appraisal by the arboriculturist.

Method 7 : GROUND PREPARATION FOR TREE PLANTING AREAS

This method shall apply after completion of main build only. Ground preparation for tree and hedge planting areas shall entail removal of any residual 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) with biochar (such as <https://www.soilfixer.co.uk/biochar-article>) max 5% of the topsoil volume. This equates to about 20 kgs of product per cubic metre of topsoil (to BS3882 : 2015 topsoil) to a maximum 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. Any 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 8 : LANDSCAPING PREPARATION IN ROOT PROTECTION AREAS

This method shall apply after completion of main build only. Operations 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. Ground preparation within root protection areas shall entail removal of perennial shrubs, climbers, ground covering plants by the use of hand tools only. The ground surface shall be thoroughly hand-forked over to one spit's depth (250mm). Care shall be taken not to damage tree roots greater than 20mm diameter. Weed treatment if required shall be via BASIS qualified operatives. Surface debris shall be removed by hand to barrow and disposed of off-site. No wheeled or tracked plant shall be used : hand-held power tools such as clearing saws and strimmers may be used. (Outside root protection areas, mechanical cultivation shall be permitted.) The ground surface shall be worked to a fine tilth with hand tools prior to planting. Any dressing with topsoil (to BS3882 : 2015 topsoil) shall be restricted to a maximum of 100mm in depth. Earthworm Inoculation Units shall be placed 150mm below ground level at 5m intervals in all soil build-up areas. Turfing may take place after levelling and minimal consolidation and which shall be by hand tools / foot and board only, or naturally. No mechanical compaction whatever shall be used.

Method 9 : MAINTENANCE

Maintenance shall consist of the regular moderate watering of any plant the subject of the planting proposal during the first season (April 15 to October 15) after planting and thereafter in the following four years if drought conditions occur. Hedges shall be trimmed twice yearly to a height of no less than 1.3m and no less than 0.5m thickness (cross sectional). Mulch shall be topped up after natural depletion to a maximum depth of 100mm.

Method 10 : REPLACEMENT

If within five years of issue of certificate of completion any plant the subject of the planting proposal dies or in the opinion of the LPA becomes seriously damaged or diseased, the same shall be replaced according to the above methods.

(All design subject to engineering approval, but used on other sites and known to be practicable and reliable).

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.

21st January 2020

Signed:

A handwritten signature in black ink, appearing to read 'John Cromar', with a stylized flourish extending from the end.

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

01582 808020 / 07860 453072

APPENDICES

08

Tree Data

Tree number	Tree type	Height	Height to lowest major branch	Stem diameters	Radius of RPA if circle (mm)	RPA (m ²)	Comments	Life expectancy (years)	Assessed BS5837 value category
1	English oak	17.5	5.5	1002	12.02	454.2	The tree was noted to be in good shape with normal to good extension growth throughout the crown; no increase in dead wood since last inspected. Minor scattered dead fragments; one substantial dead stub noted which dates from some years back. The tree would tolerate some minor reduction over the garden. I see no reason to conclude that this would result in overall decline or dieback of the tree.	40+	B1
2	common ash	7	2	220	2640	21.9	Unimportant in landscape.	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.

09 Schedule

Trees at 3 Olivia Gardens, Harefield, UB9 6QF

Please read in conjunction with plan 1-38-3740/P2. Trees outside the curtilage of the property are 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.

Tree number	Tree type	Height	Height to lowest major branch	Stem diameters	Comments
1	English oak	17.5	5.5	1002	1) Crown clean over the site. 2) Prune twig tips and low-order branchlets only, on SW side of crown only, and only in the zone between 2m+GL and 7.5m +GL, so as to clear scaffold zone and therefore to no less than a 7m radius from trunk centre. Maximum pruning cut size for operation 2) to be 40mm diameter.

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.

'Crown cleaning' – an umbrella term now covered by several separate sections in BS3998:2010 - should be understood to mean : removal of foreign objects (section 7.13),; removal of ivy to the extent needed to facilitate inspection (section 7.12), typically 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 seen sufficiently. Dead wood can be an important ecological feature. Treatment of dead wood under 'crown cleaning' shall mean (section 7.3.2) shorten and retain if safe to do so, thus retaining some resource for invertebrates, etc.

10

Plans

1-38-3740/P1 v10

1-38-3740/P2 v11



JOHN CROMAR'S
ARBORICULTURAL
COMPANY
LIMITED

THE OLD SCHOOL,
TITLEY KINGTON,
HR5 3RN,
at Wheatley, Oxford
& Harpenden, Herts.

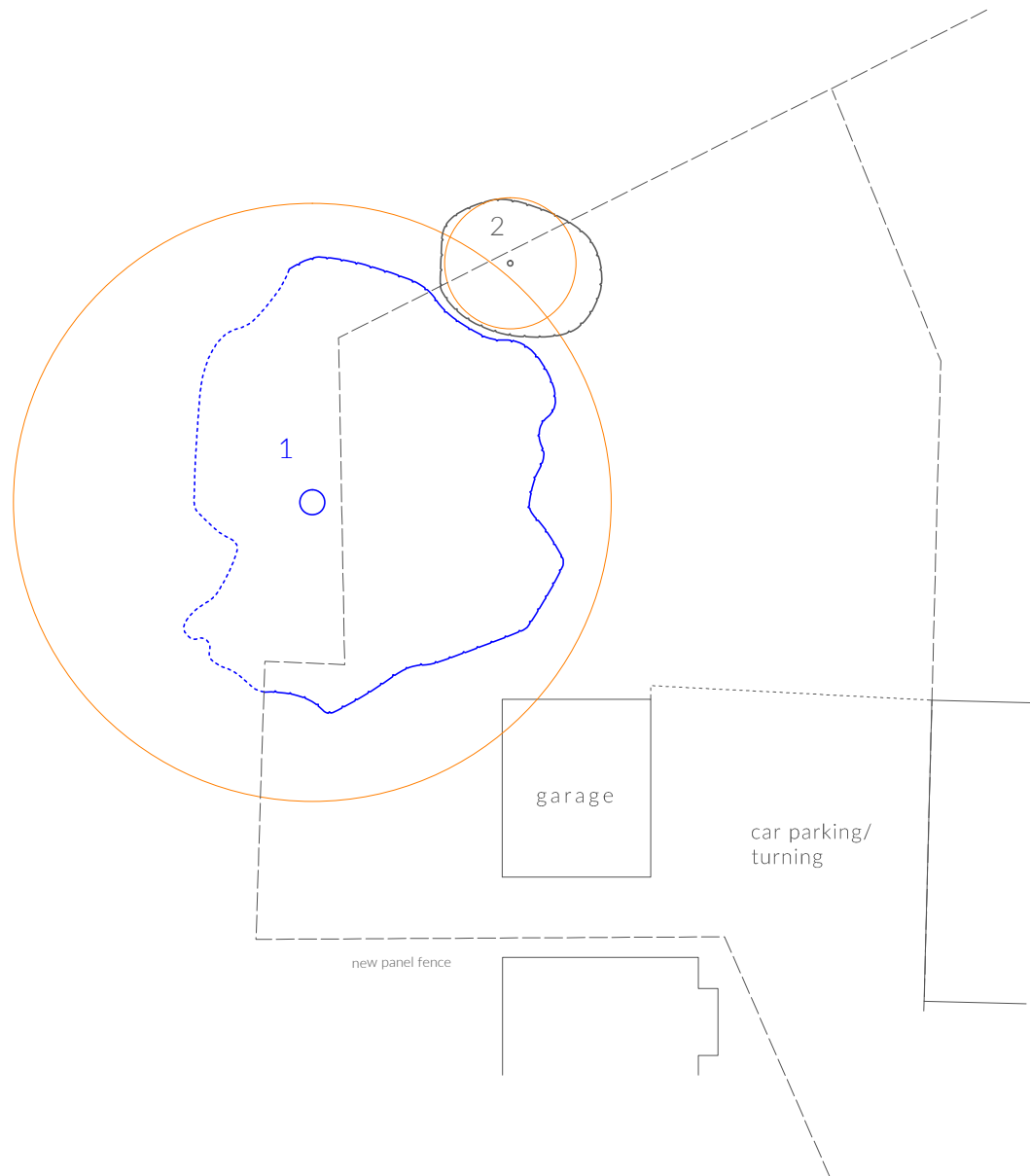
TEL 01582 808020
FAX 01544 231006
MOB 07860 453072
admin@treescan.co.uk
www.treescan.co.uk



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 - SHARP'S Root Protection Areas

 TOOTHED LINE: Tree spread line



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

BASED ON
EDGE ARCHITECTURE DRG. NOS.:
1911 104 & 1911 105

SITE ADDRESS
2-3 Olivia Gardens, Harefield, UB9 6QF

DRG. REF.	REV. NO.
1-38-3740/P1	v10
SCALE & SIZE	DATE
1:100 @ A1	17-Dec-19
0	5



PREPARATION / DEMOLITION

Method 1 : TREE PROTECTION FENCING
This method shall apply where indicated by pink lines. Tree protection fencing shall be erected, in accordance with the heavy-duty specification - BS5837:2012 section 6.2.2.2., Figure 2 : No ground levels reduction or excavation shall take place within (±the tree side of) the fence lines.
No fires shall be made on any part of the site, or within 20m of any tree to be retained. No storage of materials shall be made within the protective fences.

Method 2 : 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 'scrapping 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 'Ektex' shall be laid; 100mm of green-source woodchip; continuously abatted scaffold boards or manufactured boards so as to completely cover this area. This area shall be used for pedestrian access only. Any scaffold erection shall take its bearing directly off the ground surface via spreader plates/scaffold boards.

CONSTRUCTION

Method 3 : ROOT PRUNING
This method shall apply within only the RPA (orange circle) of tree 1.
The excavation shall be made with hand tools only. 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 / taping as required. Concrete casting shall take place without disturbing this protective layer.

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 the RPA of tree 1 (orange circle).

- 1) The trench shall be opened with an air-spade to required depth. 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. Services shall be worked under/over/around/ between roots so as not to cut or damage any larger than 20mm diameter.
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. Services shall be worked under/over/around/ between roots so as not to cut or damage any larger than 20mm diameter.
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.

LATE CONSTRUCTION and LANDSCAPING PHASE

Method 5 : REMEDIAL ROOT TREATMENT
This method shall apply in the zone of green roundels. Holes in the ground shall be made on a 1m x 1m spacing with a pinch bar to a depth of 20 cm and width of 40mm. 40g (exactly) of sucrose (sugar) shall be dissolved in 1 litre of water and poured into each hole. Treatments should be applied as soon as possible after root cutting but only once in one growing season (March to October). The solution shall be applied gradually to prevent overflow.

Method 6 : PERMANENT END-USER FENCING
Where any such fencing is proposed within root protection areas (orange circles), post holes 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. Roots 20mm or more in diameter unearthed shall be temporarily protected with bubble-wrap and insulating or gaffer tape while rest of hole is dug. It should be borne in mind that the presence of large numbers of roots >20mm in diameter may effectively prevent completion of post hole, and this would be sufficient reason to terminate the operation and move post hole to a different location. If a root >20mm is inadvertently damaged, it shall be retained *in situ* for appraisal by the arboriculturist.

Method 7 : GROUND PREPARATION FOR TREE PLANTING AREAS
This method shall apply after completion of main build only. Ground preparation for tree and hedge planting areas shall entail removal of any residual 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) with biochar (such as <https://www.saffron.co.uk/biochar-articles>) max 5% of the topsoil volume. This equates to about 20 kg of product per cubic metre of topsoil (to BS3882 : 2015 topsoil) to a maximum 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 BS454:2014 '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 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 8 : LANDSCAPING PREPARATION IN ROOT PROTECTION AREAS
This method shall apply after completion of main build only. Operations 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. Ground preparation within root protection areas shall entail removal of perennial shrubs, climbers, ground covering plants by the use of hand tools only. The ground surface shall be thoroughly hand-forked over to one spit's depth (250mm). Care shall be taken not to damage tree roots greater than 20mm diameter. Weed treatment if required shall be via BASIS qualified operatives. Surface debris shall be removed by hand to barrow and disposed of off-site. No wheeled or tracked plant shall be used : hand-held power tools such as clearing saws and strimmers may be used. (Outside root protection areas, mechanical cultivation shall be permitted.) The ground surface shall be worked to a fine tilth with hand tools prior to planting. Any dressing with topsoil (to BS3882 : 2015 topsoil) shall be restricted to a maximum of 100mm in depth. Earthworm Inoculation Units shall be placed 150mm below ground level at 5m intervals in all soil build-up areas. Turfing may take place after levelling and minimal consolidation and which shall by hand tools / foot and board only, or naturally. No mechanical compaction whatever shall be used.

Method 9 : MAINTENANCE
Maintenance shall consist of the regular moderate watering of any plant the subject of the planting proposal during the first season (April 15 to October 15) after planting and thereafter in the following four years if drought conditions occur. Hedges shall be trimmed twice yearly to a height of no less than 1.3m and no less than 0.5m thickness (cross sectional). Mulch shall be topped up after natural depletion to a maximum depth of 100mm.

Method 10 : REPLACEMENT
If within five years of issue of certificate of completion any plant the subject of the planting proposal dies or in the opinion of the LPA becomes seriously damaged or diseased, the same shall be replaced according to the above methods.

(All design subject to engineering approval, but used on other sites and known to be practicable and reliable).

Section Line
A-A

approved
proposed

approx.
position of
underside of
major limbs

approx. twig
ends outline

garage and kitchen/dining
space within these lines further
towards front elevation, and
away from lowest major limbs



JOHN CROMAR'S
ARBORICULTURAL
COMPANY
LIMITED

THE OLD SCHOOL,
TITLEY KINGTON,
HR5 3RN.
at Wheatley, Oxford
& Harpenden, Herts.

TEL 01582 808020
FAX 01544 231006
MOB 07860 453072
admin@treescan.co.uk
www.treescan.co.uk



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

BASED ON
EDGE ARCHITECTURE DRG. NOS.
1911 104, 1911 105, and 1911 106

SITE ADDRESS
2-3 Olivia Gardens, Harefield, UB9 6QF

DRG. REF.	REV. NO.
1-38-3740/P2	v11
SCALE & SIZE	DATE
1:100 @ A1	21-Jan-20
0	5