S640-J2-IA-1

REPORT

regarding the impact on trees of proposals for development

(a crossover) at

44 Ickenham Road Ruislip HA4 7DQ

JOHN CROMAR'S
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View of site from the west

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AA Registered CONSULTANT trees.org.uk

Company Registration No. 5195523. Registered in England and Wales. Registered Office: The Old School, Titley, HR5 3RN

Contents

1 Instructions

I am instructed by Towers Associates on behalf of clients to make an assessment of tree amenity value and condition of trees at 44 Ickenham Road Ruislip HA4 7DQ and of the impact of a proposal for development (a crossover and associated driveway) on such trees, and to supply an arboricultural methods statement and tree protection plan. The design and access statement / design summary submitted by [[Towers Associates]] describes the scheme.

2 Executive summary

The impact on trees of the extension and refurbishment scheme proposed, will require no trees to be removed. All retained trees will be easily protected from harm during the project.

3 Introduction

3.1 The environmental role of Local Planning Authorities

Local planning authorities (LPAs below) play an important part in the almost continual balancing act that is part and parcel of a modern democracy. They regulate development in the interests of the community. Increasingly, the environment plays a role in our lives, and strongly affects our health, both mental and physical. This is typically recognised in planning policy determined by LPAs, and the formal planning guidance published by them. LPAs process planning applications in line with this policy and guidance.

3.2 British Standards

These continue to play a significant role in the quality of our lives in the UK, by defining minimum standards for many products, and making recommendations where precise, exhaustive specifications are not absolutely possible, for example with services.

3.3 British Standard 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

BS 5837:2012 (the Standard, below) is the fourth version in a series, the first being in 1980. This Standard provides a framework for the valuation, in ornamental terms, of trees, and gives recommendations for their protection on building sites.

3.4 How the Standard is used by an arboriculturist

It is used as a tool by an arboriculturist, who for the purposes of this type of professional activity, is someone who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction. This is the profession which is concerned, in a wider sense, with the care and cultivation of trees for amenity (all the benefits). An arboriculturist, then, uses the Standard:

a) to assess the value, in terms of amenity, of the trees on and adjoining a particular site, whether such trees are formally protected or not, for example by reason of being in a Conservation Area or because they are scheduled within a Tree Preservation Order. (Both of these provisions are part of the Town and Country Planning Act 1990, part VIII.);
b) secondly, to help assess the impact upon the trees of the proposal for development;
c) lastly, to give ways of protecting retained trees during construction, should the proposal receive planning consent.

3.5 How the arboriculturist prepares tree protection methods

In practice, as advances in materials and techniques are rapid, the arboriculturist does not necessarily specify a precise commercial product, but defines the essential components of methods of demolition and construction which often make use of specialized materials. These may be termed 'tree-friendly' methods, meaning that they have as their focus the well-being of the tree. These appear on the tree protection plan(s) appended, typically titled: 'Tree Retention and Tree Protection Measures', and within the text below.

3.6 Classification of trees

The Standard recommends a way of classifying trees when assessing their potential value in relation to proposed development. Value means (mainly) *visual* value to the general public. It also allows for other values to be considered such as historic or conservation value. Some surveys may not find any trees of one or more categories.

Table 1 describes, as: 'U', a low-value tree; denoted by a dark red outline on plans, the shape of the edge of the tree's crown typically more or less concentric to the trunk position.

It also shows 'A', 'B' and 'C', in descending merit:

- 'A' category, green crown outline, are trees of high vitality or good form, or of particular visual importance.
- 'B' category, blue crown outline, are good trees but may be of slightly poorer form or be not sited as importantly as 'A' category trees.
- 'C' category, grey crown outline are trees of no particular merit, but in adequate condition for retention.

A minimum expected safe useful life is also assessed. Please note that a low value tree may have a very long life expectancy. The two factors are only linked in that, for example, a very high value tree cannot also have a very low life expectancy.

3.7 Root protection area

This is abbreviated to RPA below. The RPA is a zone around the trunk of the tree, in which protective measures must be used in order to prevent significant damage to trees.

3.8 Use of appended plans

The appended plans have different applications:

- Plan reference no. S640-J2-P1, shows the spread of the crowns (the upper, leaf-bearing part of trees), and is intended to indicate the relationship of any neighbouring trees to each other. This plan gives a quick reference assessment of value as per section 4, table 1, page 9 of the Standard.

- S640-J2-P2 is the 'tree protection plan' referred to in the Standard (section 3.11). It is colour-coded to indicate where tree-friendly methods are proposed during the overall construction process, which may involve demolition, main construction and landscaping phases.

4 Observations

4.1 Site visit

I visited the property on 2nd September 2021 in order to carry out an inspection. Weather conditions were fair; they permitted adequate inspection.

4.2 Survey method

I used a tree mallet, spade, diameter tape, laser rangefinder, pocket retractable tape, binoculars, scaling pole, tree data recording software, pen, pencil and paper. No trees were climbed: inspection was from ground level.

4.3 Appraisal identification

My appraisals of observations, discussions and other data are italicised below, in each relevant section and paragraph. This emphasises the clear separation between data and opinion to assist the end-users: client, architect and LPA case and tree officers.

4.4 Amenity / Screening by trees and shrubs

The site is in the administrative area of the London Borough of Hillingdon. It is not in a Conservation Area. All trees listed in the table below are situated on the council-maintained verge of Ickenham Road.

Certain trees listed are of significant general public amenity value. (See cover photo / photos below).

4.5 Soil assessment

The British Geological Survey (BGS) information for the area indicates that the underlying sub-soil is London Clay Formation - Clay, silt and sand.

Topsoil within the site appears to derive from the underlying subsoil. I saw no evidence of soil-stripping, trenching, or level-alteration in the recent past, nor did I observe any apparent compaction or drainage problems.

4.6 Measurements on site

Tree heights estimated by scaling pole.

Tree diameters measured as per the Standard, Annex C.

Tree spreads on the plans below are approximately to scale, determined on site, typically by laser rangefinder, direct measurement, pacing, sighting in relation to site features and architect-supplied plan data.

4.7 Tree data table

The figures in columns 5 and 6 below indicate the RPA. The edge of this is typically the basic tree protection fence position.

In all cases, in the absence of negative comment on health/vitality and structure, normal physiological (health) and structural condition applies.

Tree number	Tree type	Height	Stem diameters (mm)	Radius of RPA if circle (mm)	RPA (m^2)	Comments	Life expectancy (years)	Assessed BS5837 value category
1	Japanese cherry	8	472	5664	100.8	Makes a fairly significant contribution to the street scene.	20+	B1
2	Japanese cherry	8	405	4860	74.2	Rather thin in the crown. Makes a fairly significant contribution to the street scene. Only minor twigs extend to 1.8 metres above ground level over the verge.	20+	B1
3	hawthorn	8	170, 170, 120	3224	32.7	Slightly obstructing footpath. No significant contribution to the street scene.	20+	C1
4	black walnut	9	418	5016	79.0	Form not ideal, forks rather low. Makes a significant contribution to the street scene. Only minor twigs extend to 1.8 metres above ground level over the verge.	40+	B1
5	silver lime	10	533	6396	128.5	Rather one-sided. Makes a significant contribution to the street scene.	40+	B1

4.8 Photos

View of site from Ickenham Road

View along the existing footway from the west

5 Arboricultural impact assessment (AIA)

5.1 RPAs – modifications to shape

I carried out an assessment as per the Standard (section 4.6.2) in connection with the plotting of the RPAs of all trees. This section requires that site conditions such as location of various structures, the internal support mechanisms of various trees, etc., are taken into account in determining the likely position of roots. Where applicable, the modified-shape RPA, of equivalent area, has been plotted on the plans appended (shown as shapes bounded by an orange line). The subsoil is likely to be clay, silt and sand, typically a somewhat shrinkable medium.

This factor is of little overall relevance in connection with this site. The shapes of the root systems of trees have probably not been affected by subsoil type. The roadway construction has probably not in this case significantly affected the shape of the root systems of trees.

5.2 Roots and the design

It is usual for discussions between the arboriculturist and architect to take place at an early stage following the arboriculturist's site survey. Modifications, minor or major, to the proposals as first received are typically discussed, with a view to promoting tree retention and health. I discussed with the architect certain features of the scheme in this case. The outcome of these discussions (modification to the position of the proposed driveways) is incorporated in the proposal considered here.

5.3 The static root plate (SRP) compared with RPA

SRP is an abbreviation for static root plate, (Mattheck, 1991, etc.) and means the structurally significant roots nearest the trunk: the principal roots that hold the tree upright. This is derived from a radial dimension based on trunk diameter near ground level. The RPA is a guide to where physiologically significant roots, those necessary for, primarily, water uptake, are likely to be located. No encroachment on the RPA (or SRP) of any retained tree is entailed.

5.4 Assessment of SRP/RPA encroachment

No encroachment on the SRP of any retained tree is entailed. Some encroachment on the unsurfaced area of the RPAs of certain retained trees is entailed, as analysed in the table below:

Tree no.	Tree	RPA area (m^2) (unsurfaced)	Area affected (m^2)	% affected	Notes
2	Japanese cherry	46.61	8.90	19.09%	driveway & crossover
4	black walnut	46.67	10.16	21.77%	driveway & crossover

In view of the above I conclude that special driveway construction methods are needed from the arboricultural perspective. In this case all trees to be retained can be adequately protected by tree-friendly methods as proposed below to reduce impacts on root systems of retained trees.

5.5 Hard surfacing

The Standard (section 7.4.2.3) recommends that permanent hard surfacing of any existing unsurfaced ground within the RPA of trees to be retained be limited to 20% of the unsurfaced portion of the RPA. However, it is fair and reasonable to note that this percentage is an arbitrary one; it is not supported by any published research. The proposed changes are limited to the uppermost soil horizons in the RPA around trees 2 and 4 (- see

tree-friendly methods below). I propose the RPA is managed during demolition and construction and any changes controlled by methods proposed below. 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 the Standard (section 7.4.2) supports 'up and over' methods of construction where appropriate. The principle and practice of this method is outlined in 'The Use of Cellular Confinement Systems Near Trees: A Guide To Good Practice', Arboricultural Association Guidance Note 12 (September 2020). I have developed and used similar methods for many years within my company, engaging with the manufacturers and designers of the materials as these became available. This has facilitated the retention of mature trees very close to construction activities.

As the changes do not involve significant root cutting, and porous material allowing roots to respire is specified in methods below, and amelioration of the rootzone of adjacent trees can take place via soil improvement, vertical mulching with biochar, earthworm introduction, etc., I see no basis to conclude that the trees will suffer harm, if the methods proposed below in detail are followed carefully.

5.6 Perception of trees by building users

The proposals are for a crossover and driveway and not a continuously habited structure.

In view of the above I conclude that shading by and perception of trees has been considered (as the Standard (sections 5.3.4 and 5.6.2.6) recommends) and are not negative factors.

5.7 Access clearance

I note from my site visit and the plans received that no retained tree conflicts with pedestrians nor construction traffic, nor end-user vehicles. I consider the proposal to lightly prune some twig tips of tree 4 to be appropriate. It is locally ornamental and functions to provide some softening of the view of the structures to the south-east. It will in my view continue to do so after the proposed minor pruning. The species involved responds well to pruning. The pruning required can easily be addressed by tree surgery in accordance with the Standard (section 5.3.4 (c) NOTE 2, section 7.7.3, etc.), *and is within the bounds of good arboricultural practice.*

5.8 Statutory constraints

The site does not stand within a Conservation Area and no trees on or adjacent to the site are covered by a Tree Preservation Order.

5.9 Policy compliance

I note LPA documents: 'A VISION FOR 2026 Local Plan: Part 1 Strategic Policies', Tree and Landscaping Objectives of UDP saved Policy BE38, and Hillingdon Design and Access Statement, Supplementary Planning Document: Residential Extensions (SPD). No trees are proposed removed. It is considered that the proposals in this report if observed, and the tree protection methods, if implemented, will facilitate fair compliance with any such policies.

6 Conclusion

6.1 Summary

I conclude that the impact on trees of the scheme proposed, subject to implementation of the arboricultural method statement's contents, will, overall be negligible.

6.2 Note to LPA

I invite the LPA to consider, if it is minded to grant consent, the incorporation of the specific *order of implementation* of the **Arboricultural method statement** below into any Conditions applied. Such measures are likely to maximise tree protection.

7 Sources and relevant documents used

- Ground-level inspection
- Supplied plans:
    - Towers Associates drg. no.: 3276-02

8 Copyright

9 Arboricultural method statement (AMS)

9.1 Overview

The methods required involve not only physical arrangements on site but effective administration prior to implementation. Trees that have been the recipients of careful handling during construction add considerably to the appeal and value of the finished development. If conflicts between any part of a tree and the building(s) arise in the course of building works these can often be resolved quickly and at little cost if an arboriculturist is consulted promptly. Lack of such care is often apparent quickly and decline and death of such trees can wreck design aims. It can of course also affect saleability, and reflects poorly on the construction and design personnel involved.

I propose that arboricultural administration takes place as outlined below.

9.2 Administration

A. Identification of key personnel in order of responsibility for tree protection on site

Role	*Name*	*Company*	*E-mail*	*Mobile*	*Landline*
site manager	TBC	TBC	TBC	TBC	TBC
main contractor	TBC	TBC	TBC	TBC	TBC
architect	Peter Norman	Towers Associates	peter@towersdrawings.com	TBC	01895 812 822
arboriculturist	John Cromar	JCAC Ltd.	johncromar@treescan.co.uk	07860 453072	01582 808020

B. Induction and personnel awareness of arboricultural matters

Prior to commencement a meeting will be held on site between the arboriculturist and the site manager (who will be required to sign the awareness document) and during which meeting all the tree protection methods, materials, order and integration with the build programme will be considered. This document, confirming awareness on the part of personnel of the various items, will be retained for the LPA.

C. Inspection of and supervision schedule for tree protection measures, frequency and methods of site visiting and record keeping

At site possession, the tree protection measures applicable to the works, as detailed in this report will be inspected by the arboriculturist and signed off if compliant. An initial inspection will take place; a monthly inspection will take place routinely; unannounced site inspection may also be carried out. Additionally, the arboriculturist shall attend site as required by architect, or site agent, or the LPA. *All reports on site visits will be copied to the LPA within 5 days of site visit*. These reports will be compiled and an end of project summary produced, together with any recommendations for future action.

D. Procedures for dealing with variations and incidents

As C above. Additionally, the architect shall inform the arboriculturist of any design variations or variation intention of tree protection; also, the site manager shall inform the arboriculturist if he intends to vary or deviate from the agreed tree protection

methods or timing. Action in response to incidents will be commensurate with and appropriate to the nature of any such incident.

E. The order of work on the site, including demolition, clearance and building

As per tree protection methods below

F. How problems will be reported and solved

Any breaches of tree protection measures shall constitute a Tree-Related Incident ('TRI'), a report on which will be copied to architect, client and LPA. A remedial action notice will be served by the arboriculturist, copied to all parties and timescales for remediation completion monitored. *All reports on site visits will be copied to the LPA within 5 days of site visit.* Action in response to incidents will be commensurate with and appropriate to the nature of any such incident. Any breach of the stipulated timescale for remediation will trigger a further TRI report.

G. How accidents and emergencies involving trees will be dealt with

Dependent on nature of incident; as above; an e-mail with photographic inclusion will be sent by the site agent. The arboriculturist or staff will attend site to appraise the situation and determine remedial action. A TRI report will be issued, as above.

9.3 Implementation on site

It is proposed that the methods specified below are followed in their entirety. Please note that the methods are referenced by various colours, lines and hatches on the tree protection plans appended. The scale of the plans is dependent on the paper size on which any hardcopy is produced.

It is highly important to tree health and vitality that construction activities are carried out strictly in accordance with the tree-friendly construction methods below. It is widely not understood outside the arboricultural profession, for example, that a single traverse of a root protection area by a mechanical excavator can cause significant and permanent damage to trees, even if this is not visible immediately afterward.

N.b. The methods below are intended to be read not only by the instructing client, but also by all others concerned with processing and determining of the application. Following planning approval, the methods are finally intended for full implementation on site by the main contractor or in some cases by a DIY builder. A degree of familiarity with the language of basic building techniques is assumed. I will of course explain any unfamiliar term – see contact details on cover page, and at the end of the report.

9.4 Tree-friendly construction methods and awareness document

(To be read and duly completed.) I the undersigned builder / site agent / main contractor have been given a copy of the tree protection measures reproduced below and the plans S640-J2-P1 v1, S640-J2-P2 v1 with which they are to be read. I have studied these tree protection measures on site with the arboriculturist. I have asked questions if I have been unsure about the practicability or safety of any measure. Any queries arising have been resolved. I see no reason why the tree protection should not be implemented as outlined below and undertake to take all reasonable steps within my remit to promote their installation and retention for the duration required, as outlined below. Section 9.4 including

all the methods below should be printed out; the plans to full scale, and kept readily to hand on site.

There are 6no. methods in this set, to be implemented in the order given unless stated otherwise.

PREPARATION / DEMOLITION

Please read with tree protection plan reference S640-J2-P2, appended.

Method 1: *SCHEDULE OF TREE WORK*
Tree work shall be in accordance with the schedule below, and to BS 3998:2010 'Tree Work - Recommendations', and in accord with spread line marked on plan. Heights are in metres; diameters are in millimetres.

Tree number	Tree type	Height	Stem diameters (mm)	Radius of RPA if circle (mm)	RPA (m^2)	Comments
2	Japanese cherry	8	405	4860	74.2	Prune twig tips where these currently extend to 1.8 metres above ground level over the verge, to about 2.5m above verge.
4	black walnut	9	418	5016	79.0	

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. (No sign of bat occupation was noted.)

Arisings shall be chipped and removed from site. No arboricultural contractors' vehicles shall stand or operate in any of the RPAs of retained trees. Any traversing of RPAs shall be preceded by laying of temporary trackway, such as TuffTrak® Euromat ground guards or similar appropriate temporary trackway sections. The temporary trackways shall be fixed together with manufacturers' approved fixings. This protective layer shall stay in place throughout arboricultural site preparation phase.

Method 2: *TREE PROTECTION FENCING*

Tree protection fencing shall be erected, consisting of 'Heras' type fencing (weld-mesh panels), each section securely attached to uprights driven at least 0.6m into ground, as per the layout as shown on the plan (pink lines). No ground levels reduction or excavation shall take place within (=the tree side of) the fence lines. The standard rubber supports ('elephant's feet') shall if used, be as per BS 5837:2012 section 6.2.2, figure 3, below; 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 the ground, providing the finished fence stands at least 1.5m above ground level.

Figure 3 Examples of above-ground stabilizing systems

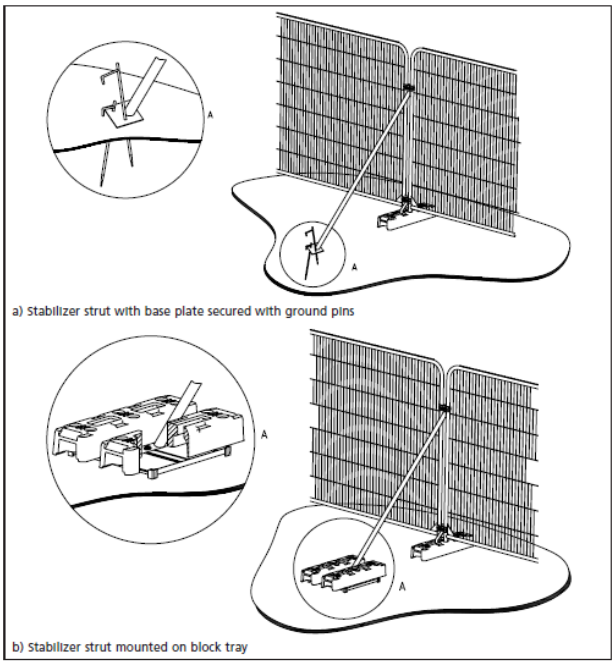

Figure 1 BS 5837:2012 section 6, figure 3

Where required to infill odd sections, tree protection fencing may be varied to >1.8m high hoarding of >11mm thick manufactured board and timber uprights >50mm x 100mm, no part of any of which is to be attached to any tree.

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. No breaching or moving of the protective fences shall take place without the approval of an arboriculturist.

Method 3: *GROUND SURFACE HANDLING and PROTECTION*

This method shall apply in the zones 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.

OR

To handle loads imposed by pedestrian-operated plant up to 1 tonne gross weight, a 2D geotextile membrane, such as 'Ekotex' shall be laid, and in sequence; 100mm of green-source woodchip; continuously abutted scaffold boards and a layer of manufactured board at least 25mm thick screwed to the underlying scaffold boards.

CONSTRUCTION

Method 4: *ROOT PRUNING*
This method shall apply within only the RPAs (orange circles) of trees nos. 2 and 4. 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.

Method 5: *DRIVEWAY and CROSSOVER (various finishes possible)*
This method shall apply in zones hatched red on plan. The existing asphalt and paving stone public footpaths shall be left intact if competent to support envisaged loads. If not, no 'scraping up' with a mechanical excavator shall be carried out. The existing hard surface shall be lifted by hand tools or hand-held power tools only. No wheeled or tracked machinery shall be used: construction shall be by means of hand tools. Edge restraint shall if required be formed from tanalised timber pinned to the substrate with tanalised timber pegs or similar.

POROUS TARMAC ZONE

A fine-mesh geogrid such as Tensar 'TriAx' shall be laid. The grid size shall be sufficiently small to retain the level correction/bedding layer stone to be laid. This shall be 'no fines', granite or other hard stone, such as 'track ballast'. Then a 3D pocket type geotextile 75mm deep, backfilled with 20-40mm CLEAN STONE – NO FINES (typically sold as 'track ballast'). A further fine-mesh geogrid such as Tensar 'TriAx' shall be laid. The grid size shall be sufficiently small to retain the tarmac to be laid. The porous tarmac layer shall then be applied. (Total thickness is proposed to be no more than 100 to 150mm.)

PAVING SLAB ZONE (IF RETAINED)

A fine-mesh geogrid such as Tensar 'TriAx' shall be laid. The grid size shall be sufficiently small to retain the level correction/bedding layer stone to be laid: granite chippings, NO FINES. Paving shall be laid open-jointed and the joints rammed with granite chippings.

LANDSCAPING PHASE

Method 6: *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 50mm auger to a depth of 600mm BGL. Screened topsoil (to BS3882:2015 topsoil) mixed with biochar (such as https://www.soilfixer.co.uk/biochar-article) - 5% of the topsoil volume (this equates to about 20 kgs of product per cubic metre of topsoil) shall be backfilled into the augered holes. Earthworm Inoculation Units shall be placed 150mm below ground level at 3m intervals.

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

Name [print]:

For construction company:

Date:

Signature……

End of main body of report – plans appended.

Dated: 7th October 2021

Signature (for John Cromar's Arboricultural Co. Ltd.)

John Cromar

Dip. Arb. (RFS), FArborA, RCArborA

John Cromar's
Arboricultural
Company Ltd.

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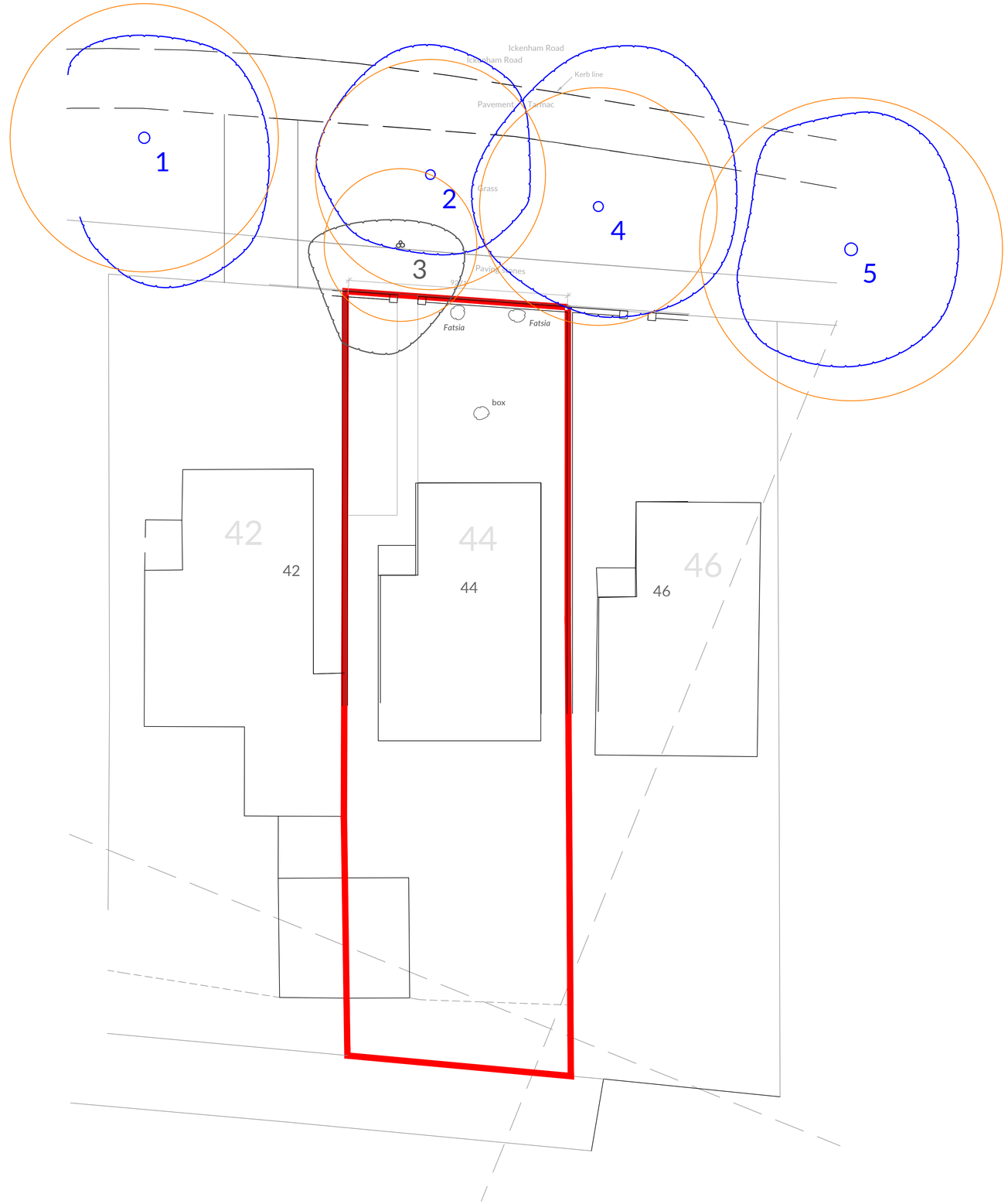
10 Plans

N.b. The scale of the plans is dependent on the paper size on which any hard copy is produced.

S640-J2-P1 v1

S640-J2-P2 v1



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KEY TO COLOURS / LINETYPES USED IN RELATION TO TREES

GREEN - High Value (A)
BLUE - Moderate Value (B)
BLACK - Low Value (C)
RED - Very short life expectancy (U)
ORANGE SHAPES: Root Protection Areas

Spread and trunk colours correspond directly to those used in British Standard 5837:2012, Table 2.

TOOTHED LINE: Tree spread line

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

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

1:100 scale applies **ONLY** when plan **printed at ISO A1 size.**

The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

TEXT
FOR FULL DETAILS OF TREE VALUE PLEASE SEE REPORT

BASED ON
TOWERS ASSOCIATES DRG. NO.: 3276-01 SUPPLIED

SITE ADDRESS
44 Ickenham Road, Ruislip, HA4 7DQ

DRG. REF.	REV. NO.
S640-J2-P1	v1
SCALE & SIZE	DATE
1:100 @ A1	5-Oct-21

0 5

The methods below typically each have a unique colour code and hatch or other reference to the plan, for example, pink lines indicate where fences to protect trees should be positioned.

PREPARATION / DEMOLITION

Method 1: ***SCHEDULE OF TREE WORK***

Tree work shall be in accordance with the schedule within report S640-J2-IA-1 and to BS 3998:2010 'Tree Work - Recommendations', and in accord with spread line(s) marked on plan.

Method 2: ***TREE PROTECTION FENCING***

Tree protection fencing shall be erected, consisting of 'Heras' type fencing (weld-mesh panels), each section securely attached to uprights driven at least 0.6m into ground, as per the layout as shown on the plan (pink lines). No ground levels reduction or excavation shall take place within (=the tree side of) the fence lines. The standard rubber supports ('elephant's feet') shall if used, be as per BS 5837:2012 section 6.2.2, figure 3,; 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 the ground, providing the finished fence stands at least 1.5m above ground level.

Where required to infill odd sections, tree protection fencing may be varied to >1.8m high hoarding of >11mm thick manufactured board and timber uprights >50mm x 100mm, no part of any of which is to be attached to any tree.

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. No breaching or moving of the protective fences shall take place without the approval of an arboriculturist.

Method 3: ***GROUND SURFACE HANDLING and PROTECTION***

This method shall apply in the zones 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.

OR

To handle loads imposed by pedestrian-operated plant up to 1 tonne gross weight, a 2D geotextile membrane, such as 'Ekotex' shall be laid, and in sequence; 100mm of green-source woodchip; continuously abutted scaffold boards and a layer of manufactured board at least 25mm thick screwed to the underlying scaffold boards.

CONSTRUCTION

Method 4: ***ROOT PRUNING***

This method shall apply within only the RPAs (orange circles) of trees nos. 2 and 4. 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.

Method 5: ***DRIVEWAY and CROSSOVER (various finishes possible)***

This method shall apply in zones hatched red on plan. The existing asphalt and paving stone public footpaths shall be left intact if competent to support envisaged loads. If not, no 'scraping up' with a mechanical excavator shall be carried out. The existing hard surface shall be lifted by hand tools or hand-held power tools only. No wheeled or tracked machinery shall be used: construction shall be by means of hand tools. Edge restraint shall if required be formed from tanalised timber pinned to the substrate with tanalised timber pegs or similar.

POROUS TARMAC ZONE

A fine-mesh geogrid such as Tensar 'TriAx' shall be laid. The grid size shall be sufficiently small to retain the level correction/bedding layer stone to be laid. This shall be 'no fines', granite or other hard stone, such as 'track ballast'. Then a 3D pocket type geotextile 75mm deep, backfilled with 20-40mm CLEAN STONE - NO FINES (typically sold as 'track ballast'). A further fine-mesh geogrid such as Tensar 'TriAx' shall be laid. The grid size shall be sufficiently small to retain the tarmac to be laid. The porous tarmac layer shall then be applied. (Total thickness is proposed to be no more than 100 to 150mm.)

PAVING SLAB ZONE (IF RETAINED)

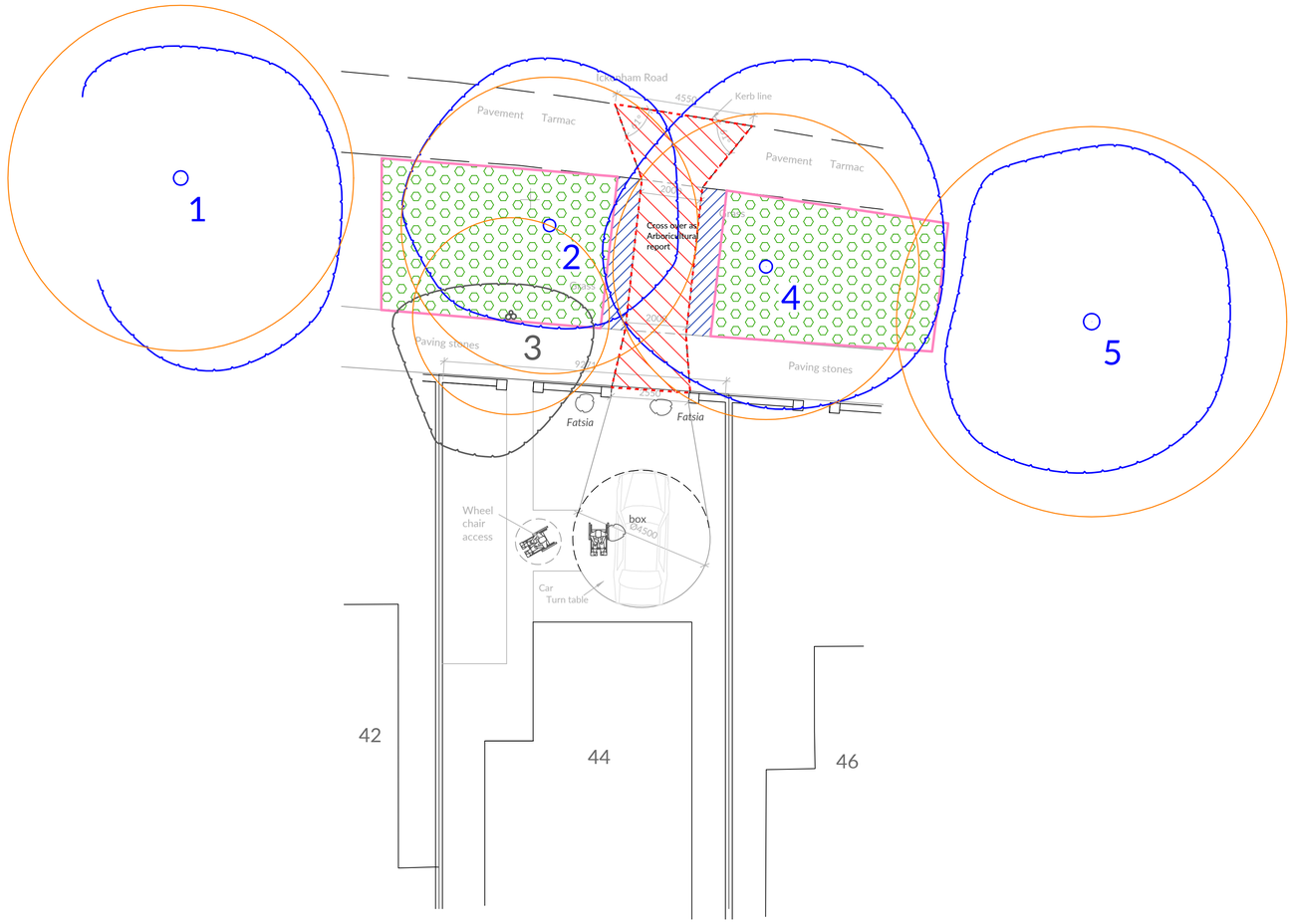
A fine-mesh geogrid such as Tensar 'TriAx' shall be laid. The grid size shall be sufficiently small to retain the level correction/bedding layer stone to be laid: granite chippings, NO FINES. Paving shall be laid open-jointed and the joints rammed with granite chippings.

LANDSCAPING PHASE

Method 6: ***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 50mm auger to a depth of 600mm BGL. Screened topsoil (to BS3882:2015 topsoil) mixed with biochar (such as https://www.soilfixer.co.uk/biochar-article) - 5% of the topsoil volume (this equates to about 20 kgs of product per cubic metre of topsoil) shall be backfilled into the augered holes. Earthworm Inoculation Units shall be placed 150mm below ground level at 3m intervals.

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



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KEY TO COLOURS / LINETYPES USED IN RELATION TO TREES

GREEN - High Value (A)
BLUE - Moderate Value (B)
BLACK - Low Value (C)
RED - Very short life expectancy (U)
ORANGE SHAPES: Root Protection Areas

Spread and trunk colours correspond directly to those used in British Standard 5837:2012, Table 2.

DRG. NAME
TREE RETENTION & TREE PROTECTION MEASURES

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

1:100 scale applies **ONLY** when plan **printed at ISO A1 size.**

The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

TEXT
FOR FULL METHOD DETAILS PLEASE SEE REPORT

BASED ON
TOWERS ASSOCIATES DRG. NO.: 3276-01 rev. A SUPPLIED

SITE ADDRESS
44 Ickenham Road, Ruislip, HA4 7DQ

DRG. REF.	REV. NO.
S640-J2-P2	v1
SCALE & SIZE	DATE
1:100 @ A1	5-Oct-21

0 5