Trees and Construction

BS5837 Tree Survey Assessment

Site: 15 & 15A Torriano Cottages, London, NW5 2TA

Ref: 241884/A1

Client: Jez Butterworth

(Mail) 2nd Floor | 1 Hunters Walk | Canal Street | Chester | CH1 4EB

0333 123 7080 | info@indigosurveys.co.uk

www.IndigoSurveys.co.uk

Arboricultural Consultant (Author):	Arboricultural Consultant (Checked by):
Tony Banner *TechCert (ArborA), TechArborA*	Andrew Turnbull *FDSc MArborA*

- October 2024 -

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(Mail) 2nd Floor | 1 Hunters Walk | Canal Street | Chester | CH1 4EB
e: info@indigosurveys.co.uk | t: 0333 123 7080

1. INTRODUCTION

1.1 **Instruction:** This advice has been prepared for Jez Butterworth (hereafter; client) and is in respect of the tree related planning considerations at 15 & 15A Torriano Cottages, London, NW5 2TA (hereafter; site).

As the proposal relates to development works at site, the advice herein is produced in accordance with the British Standard 5837 : 2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations'* (hereafter; BS5837).

1.2 **BS5837:** The scope of BS5837 is to provide guidance on how trees and other vegetation can be integrated into construction and development design schemes. The overall aim is to ensure the protection of amenity by trees which are appropriate for retention.

1.3 **Scope of this advice:** This advice has been produced in accordance with BS5837 and is intended to demonstrate the site's realistic arboricultural constraints and assist with the design process. The objective is to systematically assess the site and provide suitable recommendations regarding the proposal's potential impact on trees and vice versa.

1.4 Following instruction the consultant surveyed the site on the 16th October 2024 where a site walkover and BS5837 tree survey were carried out; all trees on site and around the application boundary were surveyed from ground level and plotted as either an individual or a tree group.

1.5 This advice is subject to caveat at Appendix I, outlines relevant terms and definitions at Appendix II and constitutes the findings of the preliminary site assessment and associated arboricultural recommendations.

1.6 The survey data and site observations use the supplied topographical survey to illustrate the surveyed trees in plan format as a 'Tree Constraints Plan' (hereafter; TCP); the TCP and the tree survey data table are at Appendix III.

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2. SITE INFORMATION & TREE ASSESSMENT

2.1 The site currently comprises a residential property with associated structures, access and gardens.

2.2 **Proposal:** It is understood that the site is being considered for development. As such, the considerations herein surround the principal of development in respect of trees and tree retention / protection recommendations.

2.3 The site requires consideration from an arboricultural perspective due to the presence of trees on and around the site; these trees are deemed to be within impacting distance of the existing structures and potential construction area.

2.4 <u>The trees</u> -

2.4.1 The tree survey and assessment resulted in the BS5837 quality/retention categories of 'B - moderate' and 'C - low' being attributed to trees/tree groups as well as one dead tree categorised as 'U' which needs to be removed.

2.4.2 The BS5837 tree survey is a means of objective assessment and reflects the trees' condition, quality contribution, remaining life expectancy and spatial considerations (stem, crown and roots). On this basis and in order to consider the trees' accurate constraints, the survey data has the crown extents for north, east, south and west, the stem diameter measurement, and the calculated root protection areas (hereafter; RPAs). Hereafter, the trees are therefore reviewed and considered on their own merits and in line with the guidance of BS5837.

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3. FINDINGS & RECOMMENDATIONS

3.1 The following information, as with the prior contents of this report, should be read with the appended tree data table and tree constraints plan (241884/TCP/01).

3.2 General Considerations for Tree Retention / Removal

3.2.1 Due to the poor condition of T4, this is categorised as 'U'. It is recommended that T4 be removed as part of health and safety tree risk management.

3.2.2 There are smaller scale trees and those with defects or limitations on the current amenity contribution or useful remaining life expectancy, these are categorised as 'C - low'.

These 'C' category trees should not constrain nor significantly guide a scheme, although protection may be preferable to retain landscape function and maturity. For any proposed tree removals, mitigation tree planting is recommended as part of a landscape scheme and can suitably replace and enhance the initial loss of canopy cover.

3.2.3 The moderate quality 'B' category trees are noted as such due to their future potential and current amenity contribution. It is therefore recommended that they be retained and protected, where possible, as part of the site's development.

Where tree removals are proposed or deemed necessary, mitigation tree planting is recommended which should be designed and integrated as part of a considered landscape scheme for the site.

3.3 Tree Protection

3.3.1 The design and layout of the site is to incorporate the essential components of retained trees (crown and rooting area) and provide a suitable level of clearance to allow for their long term safe retention, i.e. RPA protection and crown clearance as well as for any new tree(s) being planted.

3.3.2 Depending on the level of tree retention/removal, the protection methods for the retained trees is likely to vary. However, it is likely that a combination of construction restrictions be used with protective barrier fencing (to protect RPAs).

The process of site operations will be an important aspect to confirm by way of a construction layout plan, i.e. showing storage areas, parking, delivery area, access routes etc., all outside of RPAs or with a provision for ground protection. As a basis for tree protection the following points will need to be considered:

(Mail) 2nd Floor | 1 Hunters Walk | Canal Street | Chester | CH1 4EB
e: info@indigosurveys.co.uk | t: 0333 123 7080

- Removal of all agreed trees and any agreed pruning works prior to works commencing by a suitably qualified arboricultural contractor;
- Induction of construction personnel regarding the exclusion of works (including access and storage) from the retained trees' RPAs;
- Secure temporary barrier fencing around the site to exclude the retained tree's crowns and RPAs from the working site;
- The storage of materials clear of all retained trees and conditions to ensure no contamination/run-off into soils in proximity to trees or on higher ground; and
- For the removal of existing structures and/or hard surfaces from RPAs the works to be undertaken separate to construction, manually and sensitively.

3.4 General Overview

3.4.1 The considerations for trees which are to be retained as part of the proposal need to be addressed in order to ensure their protection. This is to account for the potential impact on retained trees and their growing environment from the proposed development and vice versa (these follow).

Tree Works

Any trees which are to be removed should be well indicated to ensure that the retained trees are suitably protected. Hence, all trees which are to be removed are to be marked by a suitably qualified person [spraying the stems with a cross] prior to tree works.

Tree Crowns

Consideration is required for both existing and newly planted trees whereby the proposed construction should take account of trees reaching their full growth potential. It is always prudent to provide adequate clearance from a tree's current crown for future growth, i.e. to allow a tree adequate space to reach maturity without conflicts with new structures.

Root Protection Areas (RPA)

As a minimum it would be suitable to consider the outer extents of retained trees' RPAs as construction exclusion zones and be protected.

As above, it is *sometimes* possible to undertake construction activities within the rooting areas of retained trees which requires greater attention to tree protection, foundation designs, phasing of works etc. If it is proposed to undertake works within these areas, more specific advice should be sought from a qualified arboriculturalist with a view to assessing the feasibility of said proposal and forming a suitable method statement.

(Mail) 2nd Floor | 1 Hunters Walk | Canal Street | Chester | CH1 4EB
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Demolition/Excavation Works

Any removal of existing built structures (including stairways, small outbuildings, retaining walls etc.) or hard surfacing will need to be undertaken with great care where this occurs within or near to the anticipated rooting areas of retained trees.

Said works should adhere to the RPA restrictions, be undertaken manually with hand held non mechanical tools and ensure that existing ground levels are retained.

Hard Landscape Works

As with previously mentioned arboricultural restrictions to demolition/construction, the proposed works should avoid retained trees' RPAs. However, where ground works are proposed within RPAs, construction methods [for hard surfacing, walls etc.] should retain the existing ground levels, be undertaken sensitively and using a no dig design.

Conversion of soft surfaced areas within RPAs to hard surfaced walkways, parking areas etc., will need to utilise a no-dig product to ensure no negative impact on the tree roots and/or growing conditions.

3.4.2 For any proportion of tree removal, new tree planting is to be integrated into a landscape scheme. The new trees should be of a suitable volume, species, scale, in suitably prepared planting locations with adequate space for future growth and development and enhance the site's long term amenity contribution.

3.5 Additional Details

3.5.1 The surveyed trees have been subject to a detailed inspection and the arboricultural considerations detailed within this advice. The advice herein is intended to guide a suitable design in consideration for the site's valuable amenity assets.

3.5.2 Further to the above, the finer details of layout, design detail to accommodate trees and any proposed new tree planting are to be illustrated within a landscape plan. This is to include the exact details of hard and soft landscape works, RPA sections (where surface works are proposed) and details of new tree planting location, species, stock selection, installation and maintenance; to be undertaken by the appointed landscape architect with the full support of the arboricultural consultant (where required).

3.5.3 Hence, further to the supply of the proposed site plan for the planning application, this will be reviewed as an arboricultural impact assessment (AIA) to inform AMS 'consideration'. Where this advice is accounted for, this will enable the arboricultural constraints to be managed effectively, i.e., phased works, tree protection fences etc.

This concludes our advice.

(Mail) 2nd Floor | 1 Hunters Walk | Canal Street | Chester | CH1 4EB
e: info@indigosurveys.co.uk | t: 0333 123 7080

Caveat

Any and all information supplied to Indigo Surveys Ltd by/on behalf of the client is assumed to be accurate unless otherwise informed. | This advice is limited to the observations made on the date of inspection as detailed herein and any deletion, editing or alteration will result in the advice being null and void in its entirety. | This advice in its entirety may be deemed null and void if remedial works are undertaken on any area of the site, on or after the date of the survey. | No liability is assumed by the author or by Indigo Surveys Ltd for any misuse, misinterpretation or misrepresentation of this advice. | This advice is not valid in adverse or unpredictable weather conditions or for any failure due to 'force majeure' or unpredictable events. | No responsibility is assumed either by the author of this advice or by Indigo Surveys Ltd for any legal matters that may arise as a consequence. | Neither the author nor Indigo Surveys Ltd will be required to attend court or give testimony as part of this agreement. | The responsibility for any works undertaken on the basis of the recommendations of this advice does not form part of this agreement.

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Appendix II

Terms and Definitions

"Arboriculturist" - person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.

"Competent Person" - person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached.

"Topographical survey" - an accurately measured land survey undertaken to show all relevant existing site features. *A method of carrying out topographical surveys is given in RICS specification* Surveys of land buildings and utility services at scales of 1:500 and larger.

"BS5837 Tree survey" - should be undertaken by an arboriculturist to record information about the trees on or adjacent to a site. The results of the tree survey, including material constraints arising from existing trees that merit retention, should be used (along with any other relevant baseline data) to inform feasibility studies and design options. For this reason, the tree survey should be completed and made available to designers prior to and/or independently of any specific proposals for development.

"Tree categorisation method" - trees should be categorised in accordance with the BS5837 cascade chart by an arboriculturist. This is to identify the quality and value (in a non-fiscal sense) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained in the event of development occurring.

"Root protection area (RPA)" - layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority, shown as an arboricultural constraint in m^2. The radius is calculated using the BS5837 calculation method. An arboriculturist may change the shape of an RPA but not reduce its area.

"Arboricultural implications assessment" - a study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

"Arboricultural method statement" - methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.

"Tree protection plan" - a scale drawing, informed by descriptive text where necessary, based upon the finalised proposals, showing trees for retention and illustrating the tree and landscape protection measures.

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Appendix III

Data Table: As appended (BS5837 Tree Survey Key & Table)

Tree Constraints Plan: As appended (241884/TCP/01)

(Mail) 2nd Floor | 1 Hunters Walk | Canal Street | Chester | CH1 4EB
e: info@indigosurveys.co.uk | t: 0333 123 7080

TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'

CLIENT: Jez Butterworth ***PROJECT REF:*** 241884/A1 ***SITE:*** 15 & 15A Torriano Cottages, London, NW5 2TA

CONTACT: / ***SURVEY DATE:*** 16 October 2024 ***ARB CONSULTANT:*** Andrew Turnbull *FDSc MArborA*

TREE REF. #	SPECIES	AGE	HEIGHT (in m)	CANOPY (in m) N - S - E - W				STEM (in mm)	RPA (in m)	CLEARANCE (in m)	1st BRANCH (in m)	VITALITY	LIFE EXPEC.	NOTES	BS CAT.		MANAGEMENT
T1	Sweet Chestnut; Aesculus, Aesculaceae	SM / M	18	4	5	4	6	380	4.6	1.5	5m - all round	Fair	40 +	Central to courtyard, previously reduced, some encroachment from epidermis and branch growth on railings and building, deadwood.	B	1	H&S tree risk management works recommended: • Remove reaction growth from stem to above building gutter heights; • Branch pruning to provide 1m+ clearance from railings and building; • Remove deadwood.
T2	Olive; Olea ssp.	M	6	1.5	1.5	2	1	120	1.4	2.5	1m - to union	Fair	40 +	Co-dominant union at 1m+, topped and leggy growth, good upper extension growth but lacking form.	C	2	If retained: crown reduce no further than the previous point of reduction, close to 1-2 buds from previous pruning.
T3	Apple; Malus, Rosaceae	M	6	2.5	2.5	2	1.5	140	1.7	1	1m - North	Fair	10 - 20	Lapsed growth, 3m+ regrowth from past crown reduction, good framework for future pruning if retained.	C	2	If retained: crown reduce no further than the previous point of reduction, close to 1-2 buds from previous pruning.
T4	Dead Tree	M	7	2	2	2	2	400 *	4.8	2	2m - to union	Dead	N / A	Dead tree, Ganoderma brackets, suckering and sapling growth in garden <75mm stems.	U		Fell to ground level.
T5	Cherry; Prunus, Rosaceae	SM	4	1	3.5	1	3.5	120	1.4	1.5	2.5m - all round	Fair	10 - 20	Unbalanced crown, leader removed from main stem union, lacking form, normal extension growth.	C	2	Consider tree's removal as a preventative measure, due to poor form and past pruning, with resulting limited remaining dafe and functional life.
T6	Judas Tree; Cercis ssp.	M	6	1.5	5.5	4	1	135	1.6	1	2m - all round	Fair	10 - 20	2x stems (90, 100mm), co-dominant base, one stem braised South, heavy end weight to south.	C	2	H&S tree risk management works recommended: • Reduce Southern elongating limb to reduce branch end weight and discourage additional Southern growth extension and risk of failure.
T7	Weeping Willow; Salix, Salicaceae	M	16	6	8	5	6	690	8.3	0.5	3m - to union	Fair	20 - 40	Topped / heavy pollard to upper crown, co-dominant union at 2.5-3m, cavities and hollows to stem and structure.	B	2	H&S tree risk management works recommended: • Consider reduction of laterals back from the building's front elevation to provide 1m+ clearance; • Consider crown lift to provide ground level clearance for garden access; • Thin to remove ⅔ reaction growth from pollard points, leaving the most dominant regrowth, and then reduce regrowth to encourage form and structure suitable for future repeat pruning, or pollard regime by removal of all growth every 'say' 5 years.
T8	Magnolia, Magnoliaceae	LM	16	6	7	6	2	429	5.1	2.5	3m - all round	Normal	20 - 40	3x stems (190, 240, 300mm), multipole stem union <0.5m, close to wall, encroaches neighbour's house and front elevation.	B	2	H&S tree risk management works recommended: • Consider reduction of laterals back from the neighbour's building to provide 1m+ clearance.

TREE SURVEY 'KEY' - BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'

TPO/CA	-	On client request: presence of Tree Preservation Orders (TPO) / site location within a Conservation Area (CA) & date checked;
TREE REF. #	-	Tree reference number: tag or plan number (T - individual tree, G - group of trees/shrubs, H - hedge);
SPECIES	-	Genus, species and/or common name;
AGE	-	Age classification (NP - new planting, Y - young, EM - Early-Mature, SM - semi mature, M - mature, LM - late mature, OM - over mature);
HEIGHT (in m)	-	Approximate height of tree in metres;
CANOPY (in m) N - S - E - W	-	Approximate branch spread in metres of the four principal compass points;
STEM (in mm)	-	Stem diameter in millimetres: measured in accordance with s.4.6 of BS5837;
RPA (in m)	-	Circle radius of the Root Protection Area: calculated using the stem diameter (single/multiple stem variant, as outlined within BS5837);
CLEARANCE (in m)	-	Crown clearance in metres above the adjacent ground level;
IST BRANCH (in m)	-	Clearance in metres to first significant branch and direction of growth (where relevant);
VITALITY	-	Physiological condition typically gauged from canopy cover and annual extension growth (good, fair, poor, dead);
ESTIMATED REMAINING CONTRIBUTION	-	Approximate number of years a tree will continue to contribute without the need for oppressive arboricultural intervention, categorised in years as <10, 10-20, 20-40 and >40;
NOTES	-	Structural and physiological condition observations;
BS CAT.	-	BS5837 tree quality assessment category: resulting from structural/physiological condition and remaining contribution (approximate useful life expectancy); - Standard retention category **U**: in such a condition that any existing value would be lost within 10 years; - Standard retention category **A**: high quality and value, in such a condition as to be able to make substantial contribution of 40+ years; - Standard retention category **B**: moderate quality and value, in such a condition as to make a significant contribution of 20+ years; - Standard retention category **C**: low quality and value, currently in adequate condition to remain until new planting could be established 10+ years; - Standard retention sub-category, mainly due to: **1**- Arboricultural values, **2**- Landscape values, **3**- Cultural values, including conservation;
MANAGEMENT	-	Preliminary management recommendations (as appropriate);
' * '	-	Within the survey schedule denotes an estimate

KEY

Tree Crown Spread

Root Protection Area (RPA)

Tree Stem

T1 Tree No.

Tree Condition Category

A

B

C

U

The surveyed trees are illustrated on this Constraints Plan which is prepared in accordance with British Standard BS5837: 2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'

Tree Root Growth Restrictions – the circular RPAs are shown, however, the existing foundations may present a restriction to root growth.

T4:U

T3:C2

T5:C2

T2:C2

T6:C2

Dense shrub growth

T1:B1

T7:B2

T8:B2

Crab Apple <75mm stem

Dense shrub growth

Indicative

0 5m

DO NOT SCALE FROM DRAWING

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

REV.	DESCRIPTION	DWN	CHK'D	DATE

CLIENT

Jez Butterworth

PROJECT

241884/A1

15 & 15A Torriano Cottages, London, NW5 2TA

TITLE

Tree Constraints Plan

DWN	DATE	CHK'D	DATE	APP'D	DATE	SCALE
RCK	23/10/2024	TB	23/10/2024			1:200

Indigo Ltd Surveys

(Mail) Second Floor, 1 Hunter's Walk, Canal Street, Chester. CH1 4EB

Telephone: 0333 123 7080 www.indigosurveys.co.uk

Drawing Number

A3

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