

Trees and Construction

BS5837 Arboricultural Method Statement

Site: Wisteria Court, Maesgwyn, Wrexham, LL11 2AJ

Ref: 220440.WC / A2_AMS

Client: Ellis Williams



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- June 2023 -

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Revision	Description	Date
/	/	/

1. INTRODUCTION

- 1.1 **Instruction:** This advice has been prepared for Ellis Williams (hereafter; client) and is in respect of the tree related planning considerations at Wisteria Court, Maesgwyn, Wrexham, LL11 2AJ (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 **Scope of this report:** This report has been produced in accordance with BS5837 and is intended to demonstrate how trees have been properly considered in relation to the approved scheme. The objective is to provide recommendations for tree protection relating to the scheme's potential impact on trees and vice versa.
- 1.3 Following instruction the consultant surveyed the site on the 5th April 2022 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.
- 1.4 The details herein are subject to caveat at Appendix I, outlines relevant terms and definitions at Appendix II and constitutes the findings of the preliminary site survey, the assessment of the accepted scheme and the tree related planning conditions.
- 1.5 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). This is used as a base layer with the approved scheme outline as an overlay to inform this advice as a Tree Protection Plan (hereafter; TPP); the survey table and TPP are at Appendix III.

2. SITE INFORMATION & TREE ASSESSMENT

2.1 The site currently comprises a residential block with associated access, walkways, parking and amenity space.

2.2 **Proposal:** A scheme has been granted planning permission for *'housing scheme to provide 26 independent living units and proposed ground floor extension'*.

The advice herein relates to tree protection considerations and recommendations for the approved scheme (ref: WROP/2022/0854).

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 property and construction area.

Also, the site requires consideration from an arboricultural perspective due as part of the approved layout and design as acknowledged by the council in the form of planning condition 7.

3. ARBORICULTURAL ASSESSMENT & METHOD STATEMENT

- 3.1 The following information, as with the prior contents of this report, is to be read in conjunction with the tree survey data table and the appended Tree Protection Plan (220440.WC/TPP/01).

Additionally, the recommendations of this Method Statement (hereafter; AMS) require approval by the local authority in accordance with the tree related planning condition 7 as illustrated on the corresponding Tree Protection Plan (hereafter; TPP).

3.2 Arboricultural Site Monitoring / Supervision

- 3.2.1 In accordance with the implemented planning conditions, the local authority require an AMS to be satisfactorily implemented in accordance with BS5837. This will require site inspections by a qualified arboriculturist to then be reported on to inform the client and advise the council during construction.
- 3.2.2 In this instance the retained trees are to be protected by sensitive measures, tree protection fencing and ground protection in conjunction with phased works and site management; this will be supplemented by the arboricultural supervision / inspection.
- 3.2.3 Based on the proximity of retained trees to the active construction area. It is necessary for *intermittent inspections* to ensure this advice is adhered to and the consultant is available for onsite tree queries.
- 3.2.4 A record of each site visit will be kept and a summary letter drafted for the client, the site manager and the local authority (to be sent to the local authority within five days of each site visit).

The arboricultural supervision/monitoring is therefore recommended thus:

- Pre-Commencement site meeting to confirm tree protection measures;
- Induction of site management regarding arboricultural considerations and the assignment of key personnel (site manager) responsible for maintaining the AMS;
- Half-way through the development;
- On construction completion, onsite guidance for the sensitive ground works for the terrace deck within the RPA;
- On construction completion, onsite observation/guidance regarding removal of the protective measures and to sign off the site as having correctly adhered to this AMS.

3.3 Tree Works

3.3.1 All approved tree works must be undertaken with the written permission of the council (subject to the normal statutory exemptions) to BS3998 by a tree service contractor who is suitably qualified, experienced and insured to carry out arboricultural contracting.

3.3.2 In order to facilitate the scheme and clear the new construction, the following tree works are to be undertaken prior to site works and construction commencing:

TREE WORK SUMMARY

NUMBER	TREE REMOVALS / PRUNING WORKS	
T5	Remove	Remove to facilitate the approved scheme: - to be replaced with new tree planting as part of site landscaping and new tree planting proposals.
Retained trees		Protection by placement of fixed Heras panels around the crown / RPA extents to have no access during construction.

3.4 Protective Barrier Fencing (PBF) Specification

3.4.1 Protective barrier fencing (hereafter; PBF) is to be installed to prohibit access, exclude ground works, material storage and construction processes from exposed RPA sections during construction; to be installed as per the TPP prior to site works commencing and to remain in place until construction completion unless otherwise agreed by the council.

3.4.2 The PBF, due to the degree and proximity of work, is to be *“a vertical and horizontal (scaffold) framework, well braced to resist impact, with vertical tubes spaced 3m max.. Weld mesh panels are to be securely fixed with wire or scaffold clamps. Weld mesh panels on rubber or concrete feet are not resistant to impact and should not be used”* (see TPP illustration).

3.4.3 Tree protection signage denoting the words “TREE PROTECTION ZONE – KEEP OUT” is to be fixed onto each panel of the PBF (see TPP illustration).

3.5 Underground Utilities

3.5.1 Where the proposed underground utilities are clear of retained trees, no arboricultural restrictions are to be applied to excavations or installations; if this is not the case special measures for excavation and installations will be required.

- 3.5.2 The following restrictions are recommended for underground utilities within RPAs:
- Any necessary excavations to be undertaken sensitively using either a no-dig method (e.g. Air-Spade) and/or under arboricultural supervision;
 - Any exposed roots shall be packed with a clean damp sand (not builders sand) and wrapped in hessian sacking to protect them;
 - Small roots which are identified (those less than 25mm diameter) may be carefully pruned back with a clean sharp tree saw; and
 - Larger roots which are identified (those greater than 25mm in diameter) are to be retained and protected as they may be necessary for a tree's health and stability.

3.6 Sensitive Ground Works within RPAs

- 3.6.1 The proposed terrace and balcony are within retained trees' RPAs, and will require sensitive installation methods to minimise ground and RPA impact.
- 3.6.2 Excavations within a RPA or designated CEZ (the area enclosed by PBF) must:
- Be undertaken only once construction is complete; and
 - Use sensitive excavation techniques to protect the tree roots and their existing growing conditions i.e. prepare grounds manually stripping the existing soil surface/hard surface and turf only, retain soil levels, retain large roots (>25mm dia.) and investigate preferred post locations and move post if large roots are found, then polythene line footing to prevent soil contamination.

3.7 Additional Tree Protection Considerations

- 3.7.1 General consideration for material storage, handling and pollution control is to be detailed within a 'construction management plan' and supplied by the client in addition to this advice.

3.8 Summary of Construction Restrictions

3.8.1 The following restrictions apply for tree protection purposes: as illustrated on the Tree Protection Plan (TPP/220440.WC/01):

- a) The tree works detailed herein are to be completed prior to any site works; no additional tree works are permitted unless further agreed in writing by the council.
- b) PBF is to be installed prior to site works commencing, i.e. the delivery of materials, site set up, site preparation and/or construction as per the TPP (appended) and remain until construction completion
- c) Once the PBF is in place the enclosed areas are to act as Construction Exclusion Zones (no access is permitted); the site cabins and materials are to be delivered using the existing access and ensure all storage is clear of tree crowns and RPAs.
- d) No chemicals or materials are to be transported or stored or used or mixed within an exposed RPA or Construction Exclusion Zone (CEZ).
- e) No fires are to be lit and no machinery, plant or vehicles are to be washed down within 10m of a tree's canopy or within a RPA or CEZ.
- f) During construction processes RPAs / CEZs may not be breached, i.e. no surface work, without the consultant's prior advice and council consent; this is with the exception of pedestrian access for sensitive landscape works within the rear garden section.
- g) No mechanical digging or scraping is permitted within a RPA / CEZ.
- h) When all construction is complete the sensitive landscape works and any remaining soft landscaping / tree planting works can be undertaken.

3.9 Additional Recommendations

3.9.1 This report is released to the client for them to distribute at their discretion. The consultant is available via telecom and/or email (via the methods on the title page) for any queries relating to this report and/or any other matter relating to arboriculture.

3.9.2 This AMS and the TPP are to be approved by the council as a means of authorised tree protection measures of which all site personnel are to have access to a copy and the details herein are to be inspected as per s.3.2 for '*Arboricultural Monitoring / Supervision*'.

This concludes our advice.

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.

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 m². 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.

Appendix III

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

Tree Protection Plan: As appended (220440.WC/TPP/01)

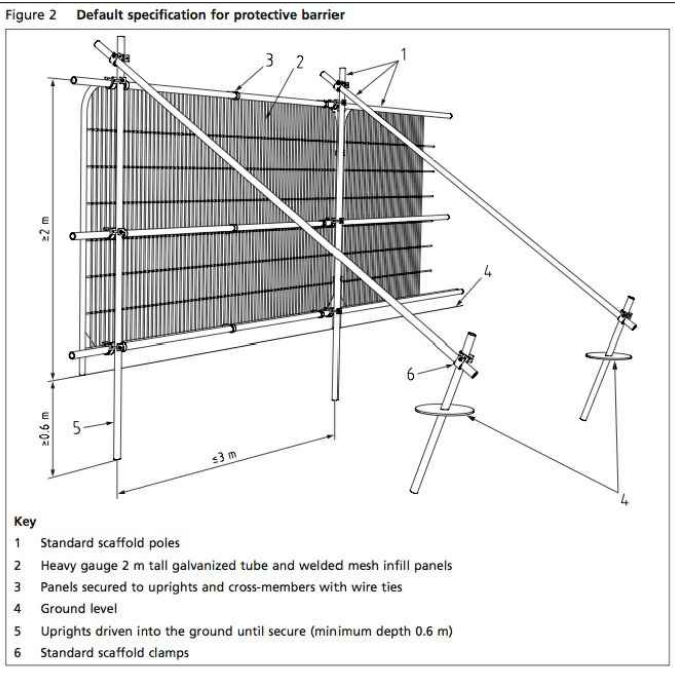
TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'																	
CLIENT: Ellis Williams				PROJECT REF: 220440				SITE: Wisteria Court, Maesgwyn, Wrexham, LL11 2AJ									
CONTACT: /				SURVEY DATE: 5th April 2022				ARB CONSULTANT: Tony Banner TechCert (ArborA) TechArborA									
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	Jacquemontii Birch; Betula, Betulaceae	M	10	5	4.5	5	5	270	3.2	2	2.5	Normal	20 - 40	Situated toward the site boundary co-dominant below 2m.		B 1	
T2	Cherry; Prunus, Rosaceae	M	10	4	6.5	6	6	530	6.4	2.5	2.5	Normal	20 - 40	Situated toward the site boundary co-dominant below 2m, impact damage to exposed roots, large old pruning wounds in crown, decay on one lower lateral.		B 1	
T3	Cherry; Prunus, Rosaceae	M	10	4	2.5	7.5	5	370	4.4	3.5	2.5	Normal	20 - 40	Situated toward the site boundary collective canopy with T4, hard surfaces and underground utilities close to base, old pruning wounds in crown.		B 2	
T4	Norway Maple; Acer, Aceraceae	M	14	3.5	6.5	6	5.5	390	4.7	4	3	Normal	20 - 40	Situated toward the site boundary collective canopy with T3, co-dominant at 3m.		B 2	
T5	Norway Maple; Acer, Aceraceae	M	10	4	3.5	3.5	3.5	240	2.9	2.5	3	Fair	10 - 20	Situated toward the site boundary, close to the building with growth influenced by the building and pruned to clear in parts, partially included wound over 50% of lower stem.		C 1	Monitor tree's condition and stem condition.

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

FIELD KEY:

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, SM - semi mature, EM - early 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;
1ST 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 the tree will continue to make a contribution 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 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 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

Protective Barrier Fencing – Example Design

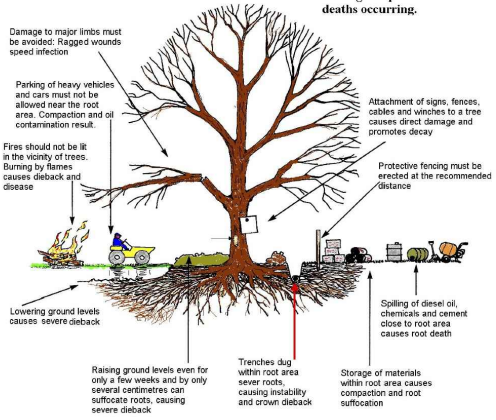


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Common causes of Tree Death

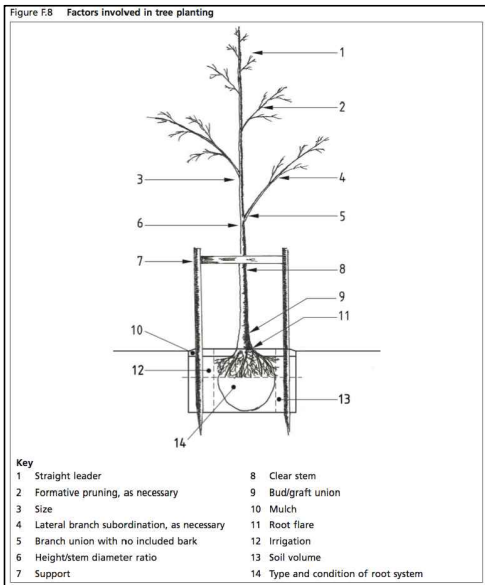
(Source: Arboricultural Information Exchange website, 2003)

The use of properly positioned protective fencing can prevent tree deaths occurring.



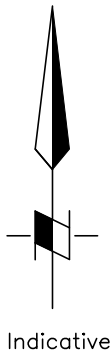
Tree Planting – Example Design

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DO NOT SCALE FROM DRAWING

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



Indicative

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 Removals – T5 and shrub border to be removed to facilitate the scheme; replacement tree detail to be included within the landscape scheme.

Ground Protection:
The existing hard surfaces are to be retained during the demolition and construction stage, only to be removed during hard landscape works (manually, with hand held tools and to retain the existing soil level).

Protective Barrier Fencing (PBF):
Heras panels to be installed (as per the illustration on this plan) aligned along the existing driveway edge with tree protection signs, to be fixed in place for the duration of site works for tree protection and to remain until demolition and construction completion, then to be realigned for hard landscape.

Sensitive Ground Works – raised level terrace to be installed using a post and raised ground level beam – works only to be undertaken once construction is complete, then prepare grounds manually stripping the existing soil surface and turf only, retain soil levels, the investigation preferred post location to confirm no large roots (>25mm dia) and polythene line post footings to prevent soil contamination.

/	Uses TCP as base layer	TB	AT	28/06/23
REV.	DESCRIPTION	DWN	CHK'D	DATE

CLIENT	Ellis Williams
PROJECT	220440 Wisteria Court, Maesgwyn, Wrexham, LL11 2AJ
TITLE	Tree Protection Plan

DWN	DATE	CHK'D	DATE	APP'D	DATE	SCALE
RCK	8/4/2022	TB	12/4/2022			1:250

 Indigo Ltd S u r v e y s	
(Mail) Second Floor, 1 Hunter's Walk, Canal Street, Chester, CH1 4EB Telephone: 0333 123 7080 www.indigosurveys.co.uk	
Drawing Number	A2
220440/TPP/01	REV.

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