

Trees and Construction

BS5837 Arboricultural Report

Site: CAIA Park Primary Care Resource Centre, Wrexham, LL13

Ref: 12654/A1

Client: Castlemead Group



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TABLE OF CONTENTS

Chapter	Title	Page
1	Introduction	3
2	Site & Application Information	4
3	Arboricultural Assessment	5 - 8

Appendices

Caveat	I
Terms and Definitions	II
Tree data table & Tree Survey Plan	III

1. INTRODUCTION

- 1.1 **Instruction:** This report has been prepared for Joe O'Donnell of Castlemead Group (hereafter; client). It is in respect of the arboricultural related planning considerations at the CAIA Park Primary Care Resource Centre, Wrexham, LL13 (hereafter; site).

As the proposal relates to new construction 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 suitably integrated into construction and development design schemes. The aim is to ensure the protection of amenity, i.e. retention and protection of such trees which are appropriate for retention and/or mitigation measures to ensure the continuation of tree cover and amenity contribution.
- 1.3 **Scope of this report:** This report has been produced in accordance with BS5837 and is intended to demonstrate how trees have been properly considered throughout the design process. The objective is to systematically assess and provide suitable recommendations regarding the proposal's potential impact on trees and vice versa.
- 1.4 Following instruction the consultant visited the site on the 12th June 2012. Pursuant to the agreed brief a site assessment and a BS5837 tree survey were carried out; all trees within impacting distance of the proposed construction processes and application boundary were surveyed from ground level.
- 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 have been used to illustrate the site's arboricultural constraints in the form of a tree survey plan (hereafter; plan); the plan and the tree survey data table are at Appendix III.

2. SITE & APPLICATION INFORMATION

- 2.1 The site currently comprises an open section of field. It is adjacent to the existing structures associated with the CAIA Centre. This is accessed directly off Prince Charles Road which has a hard surfaced path an open tarmac section and open turf thereafter.

The CAIA Centre is south of the site, the road to the east, further open field to the west, a MUGA and play area to the north with separation by way of a slight bank and fences.

- 2.2 **Proposal:** A scheme is proposed for the construction of a new Centre building. This includes the associated landscape surrounds and improvements to the parking facilities and arrangements for the Centre as a whole.

- 2.3 The site requires consideration from an arboricultural perspective due to the presence of trees contained on and around the application boundary of which the proposed works are within impacting distance.

2.4 Tree Summary

- 2.4.1 The objective assessment resulted in BS5837 categories of 'B' and 'U' being attributed to the individual trees and a boundary line tree group outside of the site.

- 2.4.2 Generally speaking the trees provide a collective contribution to the site's landscape which is a necessary aspect for retention. However, the trees are dominated by single species planting which has been for fast growing effect and landscape canopy cover.

- 2.4.3 For the most part the survey failed to uncover any significant individuals but it is worth noting that the contribution of T1 and T4 is viewed from an individual perspective as is a small aspect of T5's presence. However, this is mainly due to isolation over quality, the trees are not considered to be individually important to the site's future canopy cover or as a long term contributor to the surrounding area.

- 2.4.4 Although the trees provide a contribution worthy of consideration, this is mostly as a collective with some recognition as individuals. The trees are of moderate quality and it is considered that they should not significantly constrain the design where alternatives arrangements have been considered and/or where suitable mitigation measures are demonstrated. It is also considered fair to state that well selected new tree planting would easily enhance the site's biodiversity, promote continuity of canopy cover and enhance the amenity from trees.

3. ARBORICULTURAL ASSESSMENT

- 3.1 The following information, as with the prior contents of this report, should be read in conjunction with the tree data table and appended tree survey plan (12654/TSP/01).
- 3.2 For the purpose of this assessment, the proposed 'site plan' (ref: C413[PL]03A) has been used as a basis for consideration. This takes account of anticipated tree removals, tree protection options and potential alterations to account for arboricultural features.
- 3.3 As a result of the tree survey observations, T2 and T3 are categorised as 'U' for poor quality trees. They are both self seeded with conflicts with the existing fencing and are recommended for removal irrespective of the final site layout. It is recommended that these works be undertaken in conjunction with the site preparations prior to works commencing on site.
- 3.4 Below Ground Constraints
- 3.3.1 Based on the current scheme, the removal of T1 and T4 will be required due to the direct conflict with the scheme. These trees have no significant or observable defects which would otherwise require their removal in the immediate future, however, it is worth noting the limited contribution mentioned in the tree survey summary of s.2.4.
- Although these trees contribute towards the current contribution of the site due to scale and position, Poplar is a fast growing species with a fairly short life span and has likely been used for fast canopy cover in this instance. Both T1 and T4 are not considered to be important features in the context of the site's long term canopy cover and hence removal is considered suitable where appropriate new tree planting is proposed.
- 3.3.2 Likewise, based on the car park arrangement and the incursion on the RPA of T5, the potential for root loss would be considered too severe to guarantee the safe retention of the tree. In this instance therefore, and based on the previously mentioned assessment of the Poplar trees at site and the limitations of the single species observed, removal and replacement is considered suitable where new tree planting is proposed.
- It is worth noting that the retention of T5 is considered achievable by redesign; this may involve moving the relevant car parking section further south to be outside of the RPA (or at least at the very extents of the RPA). Whilst this is an option to safeguard the retention of T5, the retention of a Poplar tree of this scale with the potential for near future branch loss and significant ground disturbance from raised roots in very close proximity to the new parking area is not desirable.
- 3.3.3 In light of s.3.3.1 and 3.3.2 and considering the potential planting space and the indication of new tree planting on the proposed site plan (30 individual trees in shrub

borders and at the extents of the parking areas), the removal of T1, T4 and T5 is considered to be suitable and [more likely] a positive option for the future contribution of trees for the site.

Although a proportion of the space allocated for new trees shown on the proposed site plan is only likely to be suitable for smaller scale species, there are a number of areas allocated which will certainly support medium and large scale species selection. This presents a scheme which can be progressed with the confidence that new tree planting details can be addressed by way of a planning condition. A detailed landscape scheme is to include a tree planting specification; circa 10 new medium to large scale species could be integrated into the scheme of shrub and small tree planting.

- 3.3.4 It is clear from the tree survey plan that both T6 and T7 are clear of the proposed works including their RPAs in their entirety. Likewise, the presence of G1 was noted during the survey for relevant in emphasizing the species poor status of the site and the suitable clearance from the proposed works.
- 3.3.5 In reference to s.3.3.4, for the most part, aside from the anticipated tree removals, the trees are clear of works and no conflicts are observed. Consideration thus -
- The access will use the existing and/or newly proposed route directly off Prince Charles Road which is clear of retained trees, no conflict with RPAs is observed;
 - The site works, construction and landscaping is all south of the anticipated tree retentions and hence clear of the RPAs, i.e. T6, T7 and G1.
- 3.3.6 As the construction works are to be clear of the anticipated retained trees' crowns and RPAs, the clearances will act as a good preventative measure for tree protection. It is not considered necessary to impose strict restrictions to construction processes, however, it is necessary to advise and emphasize tree protection by site management and fencing as part of the works, i.e:
- Induction of construction personnel regarding the exclusion of works (including access and storage) from the retained RPA sections;
 - Secure fencing to exclude the RPAs of T6 and T7 from the working site, suggested to be fixed Heras panels between the car park and the RPAs; and
 - The storage of materials to ensure no contamination/run-off into soils in proximity to trees or on higher ground.

3.4 Above Ground Constraints & Future Pressures for Tree Works

- 3.4.1 Based on the above assessment and clearances observed between the trees anticipated for retention and the proposed works, no crown conflict or encroachment is anticipated.
- 3.4.2 In order to ensure the safe retention of the trees outside of the working area, it is considered suitable to ensure that the trees to be removed and those to be retained are illustrated on all associated plans. This will ensure consistency and avoid confusion where plans are referenced by site contractors.
- 3.4.3 Tree works must be undertaken with the written permission of the council (subject to the normal statutory exemptions) and must be undertaken to BS3998 by a tree service contractor who is suitably qualified, experienced and insured to carry out said works.

TREE WORK SUMMARY

TREE / GROUP	TREE REMOVALS / PRUNING WORKS
T2 and T3	Remove - due to observable defects and conflicts with structures.
T1, T4 and T5	Remove - due to conflict with scheme in order to facilitate construction. Tree Planting - throughout site in conjunction with scheme, details to be confirmed within a landscape scheme to include species selection, nursery stock, tree planting specification and maintenance proposals.
T6, T7 and G1	Monitor tree condition - anticipated in conjunction with presence of play area and MUGA but worth emphasizing need to monitor and undertake health and safety pruning works when needed.

3.5 Tree Planting

- 3.5.1 For any proportion of tree removal, new tree planting should be integrated into a well delivered 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.
- 3.5.2 In this instance, as mentioned at s.3.3.3, the intention to undertake tree planting and enhance the site's canopy cover and amenity is demonstrated on the proposed site plan. The details of the proposed tree planting could be addressed as part of planning conditions where a detailed landscape scheme be requested. Some of the necessary considerations follow -

Planting Volume

Based on the availability of new planting space, the site is considered to be suitable for at least a 1:1 removal to replacement ratio. The level of planting shown on the proposed site plan is achievable although of mixed scale species. Selection will need to be suitable for each planting location and the scheme will need to concentrate on integrating medium and large scale species, i.e. to directly replace the trees being removed.

Planting Specification

A detailed specification should be included within a landscape scheme [which could form part of planning conditions]. This is to outline the proposed tree species for each chosen planting location, nursery stock selection, consideration for future growth potential, planting process and ongoing maintenance (watering, mulch and pruning).

Tree Species

The mixture species scale and nursery stock selection should aim to promote and enhance biodiversity, continuity of tree cover and suit the constraints of the site. The tree species selection should be based on their ultimate scale, suitability for the planting location (be appropriate for use within a car park, near buildings and in proximity to the child play area) and concentrate on native species.

3.6 Additional Details

- 3.6.1 The surveyed trees have been subject to a detailed inspection and the arboricultural considerations detailed within this advice. Typically, the aforementioned considerations can form part of tree related planning conditions and can be detailed within a method statement based on the approved construction programme and work stages.
- 3.6.2 Further, where the aspect of tree removal is supported by the council, the removals mentioned herein will leave arboricultural constraints which can be managed effectively by appropriate site management. The use of planning conditions for detailed protection methods and new tree planting proposals are therefore considered suitable.
- 3.6.3 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.

This concludes our advice.

Appendix I

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 report is limited to the observations made on the date of inspection as detailed herein and any deletion, editing or alteration will result in the report being null and void in its entirety. | This report 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 report. | This report 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 report 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 report 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 categorization 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 finalized 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 Survey Plan:

As appended (12654/TSP/01)

TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'														
SITE: CAIA Park Primary Care Resource Centre, off Prince Charles ROad, Wrexham, LL13										ARBOR CONSULTANT: Andrew Turnbull MArborA				
CLIENT: Castemead Group										SURVEY DATE: 12 Jun 2012				
TREE REF. #	SPECIES	AGE	HEIGHT (in m)	CANOPY (in m) N - S - E - W				STEM (in mm)	RPA (in m²)	CLEARANCE (in m)	LIFE & VITALITY	NOTES	BS CAT.	MANAGEMENT
T1	Poplar; <i>Populus, Salicaceae</i>	SM / M	16	5	5.5	5	5	580	152	0.5	Normal	Fast growing, likely that the planting was undertaken for a quick contribution and canopy cover, good form and canopy cover, reaction growth around base and root suckering.	B 1	
T2	Sycamore; <i>Acer, Aceraceae</i>	Y	4.5	2.5	2	2.5	2	<130	8	0	Poor	Self seeded, growing through wire fence, multiple stems at base.	U	Removal recommended.
T3	Sycamore; <i>Acer, Aceraceae</i>	Y	3.5	2	2	1.5	2	<120	7	0	Poor	Self seeded, growing through wire fence, multiple stems at base.	U	Removal recommended.
T4	Poplar; <i>Populus, Salicaceae</i>	SM / M	14	5	4.5	5	5	560	142	0.5	Fair	Fast growing, likely that the planting was undertaken for a quick contribution and canopy cover, near boundary fence, overhangs containers etc., average form, multiple stems from 2-2.5m.	B 3	
T5	Poplar; <i>Populus, Salicaceae</i>	SM / M	15	6	5.5	5.5	5	580	152	1.5	Normal	Fast growing, likely that the planting was undertaken for a quick contribution and canopy cover, canopies viewed in connection with boundary group, single stem on bank near MUGA, overhangs fence.	B 2	
T6	Poplar; <i>Populus, Salicaceae</i>	SM / M	14.5	3.5	5.5	3	4	480	104	1.5	Normal	Fast growing, likely that the planting was undertaken for a quick contribution and canopy cover, canopy cover is viewed in connection with boundary line group, single stem, grown as pair with T7, near MUGA, contributes towards G1.	B 2	
T7	Poplar; <i>Populus, Salicaceae</i>	SM / M	14.5	5.5	5	5.5	4	530	127	1.5	Normal	Fast growing, likely that the planting was undertaken for a quick contribution, viewed in connection with boundary group, single stem, average form, some large attachments with a smaller/lesser dominant leader, grown as pair with T6, contributes towards G1.	B 2	
G1	Poplar; <i>Populus, Salicaceae</i>	SM / M	14 - 16	/	/	/	/	500*	113	1 - 2	Normal	Boundary buffer group planting, fast growing, likely that the planting was undertaken for a quick contribution and canopy cover, nearest stems to boundary of site are 22m clear.	B 2	Trees do not encroach site and therefore present no constraint.

TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2005 'TREES IN RELATION TO CONSTRUCTION - RECOMMENDATIONS'													
FIELD KEY:													
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 (Y - young, 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 m²)	-	Root Protection Area: calculated as a function of the STEM measurement (single stem/multiple stem variant, as outlined within BS5837);											
CLEARANCE (in m)	-	Height in metres of crown clearance above the adjacent ground level;											
VITALITY	-	A measure of physiological condition typically gauged from annual extension growth (normal, poor, dead);											
NOTES	-	Structural and physiological condition observations;											
	-	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.

Proposed scheme

Tree Condition Category

A

B

C

U

This Tree Survey Plan has been prepared in accordance with British Standard BS5837: 2012 "Trees in Relation to Design, Demolition and Construction - Recommendations".

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

REV.	DESCRIPTION	DWN	CHK'D	DATE	
CLIENT Castemead Group					
PROJECT 12654 CAIA Park Primary Care Resource Centre, off Prince Charles Road, Wrexham, LL13					
TITLE Tree Survey Plan					
DWN	DATE	CHK'D	DME	APP'D	SCALE
RCK	15/06/2012				1:500



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12654/TSP/01

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