

Trees and Construction

BS5837 Method Statement

Site: Plas Coch Campus, Wrexham, LL11 2AW

Ref: 18164.22/S1/A3_AMS_Rev.B

Client: Wrexham Glydwr University



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- December 2022 -

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Revision	Description	Date
A	Updated tree works	24/10/2022
B	Updated tree works	05/12/2022

1. INTRODUCTION

- 1.1 **Instruction:** This advice has been prepared for Wrexham Glydwr University (hereafter; client) and is in respect of the tree related planning considerations at Plas Coch Campus, Wrexham, LL11 2AW (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 report has been produced in accordance with BS5837 and is intended to demonstrate how trees have been properly considered in relation to the accepted scheme. The objective is to provide recommendations for tree protection relating to the scheme's potential impact on trees and vice versa.

- 1.4 Following instruction the consultant surveyed the site on the 18th May 2018, 21st January 2021 and 16th August 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.

- 1.5 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 was supplied with arboricultural advice and has an overlay of the approved scheme to inform this advice. The TCP is used as a base layer for the appended 'Tree Protection Plan' (hereafter; TPP); the tree survey data table and TPP are at Appendix III.

2. SITE INFORMATION & TREE ASSESSMENT

- 2.1 The site currently comprises an in-use university campus with associated structures, accesses, parking, sports fields and amenity space. The site is bound by commercial properties to the north, Mold Road to the south, residential properties and Crispin Lane to the east and the B5101 road to the west.
- 2.2 **Proposal:** A scheme has been granted planning permission for the '*demolition of student union, refectory and other redundant buildings, and redevelopment of academic campus to provide new learning gateway building, engineering building, new sports hall extension, redevelopment of multi-use games area, refurbishment of social learning and academic tuition space, together with new car parking, infrastructure, landscaping and public realm works*'. The advice herein relates to tree protection considerations and recommendations for the approved scheme (ref: WRR P/2018/0666).
- 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 the tree-related planning conditions 5 and 6.

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 (18164.22/S1/TPP/01).

Additionally, the recommendations of this Method Statement (hereafter; AMS) require approval by the local authority in accordance with the tree related planing conditions 5 and 6 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 tree protection fencing 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* which are *recommended at key stages* 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 client by email for distribution).

The arboricultural supervision/monitoring is therefore recommended thus:

- Pre-Commencement site meeting to confirm installed tree protection measures and an induction of site management regarding arboricultural considerations and the assignment of key personnel (site manager) responsible for maintaining the AMS;
- Monthly during construction; and
- 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 In accordance with planning conditions for the retention and maintenance of the site's trees and Arboricultural Method Statement; the following tree works are recommended in conjunction with the approved scheme and proposed landscape plan:

TREE WORK SUMMARY

NUMBER	TREE REMOVALS / PRUNING WORKS	
T1, T2, T6 - T28, T102, T013, T014, T109, T111, T118, T119, T120, T121, T122, T123, T130 - T135, T205, T206, T219 & shrub groups	Remove	Remove to facilitate the approved scheme and landscape plan: - trees to be replaced as part of landscape works and tree planting proposals - tree planting details to be included within the landscape scheme and approved by the council.
Retained trees		Protection by placement of fixed Heras panels around the crown / RPA extents to have no access during construction and manually operative sensitive surface works.

3.3.2 All approved 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 the arboricultural contracting.

3.3.3 Any additional tree works must only be undertaken with the full and written permission of the council and all tree works must be undertaken to BS3998 and by a tree service contractor who is suitably qualified, experienced and insured.

3.4 Underground utilities

3.4.1 It is anticipated that all utility runs will utilise existing underground connections clear of RPAs. These are to be shown on a dedicated utilities layout plan and be clear from RPAs; if this is not the case special measures for underground utilities will be required.

3.4.2 The following restrictions are needed 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.

3.5 Protective Barrier Fencing (PBF) Specification

- 3.5.1 In this instance, site hoarding or Heras panels will be installed as Protective barrier fencing (hereafter; PBF), to prohibit access, exclude ground works, material storage and construction processes from the retained trees' RPAs during construction.
- 3.5.2 PBF is to be installed as illustrated on the TPP prior to site works commencing and is to remain in place until construction completion unless otherwise agreed by the council.
- 3.5.3 Site hoarding or Heras panels to be a vertical and horizontal (scaffold) framework, well braced to resist impacts, with the vertical tubes spaced at a maximum of 3m. Onto this, weld mesh panels or hoarding is to be securely fixed. Weldmesh panels on rubber or concrete feet are not resistant to impact and should not be used (see TPP illustration).
- 3.5.4 Tree protection signage denoting the words "TREE PROTECTION ZONE – KEEP OUT" is to be fixed onto each panel of the PBF (see TPP illustration).

3.6 Ground Protection

- 3.6.1 In this instance, the grounds and RPAs are to be protected by the installation of the PBF and retained hard surfaces, and phased construction works.

At the point of PBF being installed, the enclosed RPA sections become Construction Exclusion Zones (hereafter; CEZ) to protect the trees' rooting areas during construction.

- 3.6.2 It is necessary to install temporary ground protection for exposed areas/soils within RPAs. Specifically, the ground is to be protected from impact for pedestrian/vehicular access. The ground protection is to be appropriate for the intensity of the pedestrian or vehicular movements thus -
- a) For pedestrians, the ground protection is to be *"a single thickness of scaffold boards on top of a compressible layer (10cm deep woodchip layer) laid onto a geotextile, or supported by scaffold"*; and
 - b) For wheeled or tracked movements within an exposed RPA, the ground protection is to *"be designed by an engineer to accommodate the likely loading"*.

3.7 Ground Works (within RPAs)

- 3.7.1 The hard landscape, the existing soil level and ground conditions are to be protected and maintained by use of manual and sensitive measures for ground preparations, excavations and installations.

- 3.7.2 For hard landscape, any excavations necessary within a RPA or designated CEZ (as illustrated on the TPP - each RPA and the areas enclosed by PBF) must:
- Only be undertaken when the construction works are completed;
 - Retain the existing soil levels; and
 - Use sensitive excavation techniques to protect the tree roots and their existing growing conditions i.e. manual excavations and installations, retain and reuse the existing sub-base where possible.

3.8 Additional Tree Protection Considerations

- 3.8.1 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.
- 3.8.2 It is important to ensure that delivery, storage, material preparation, access etc. are all located entirely outside of retained trees' RPAs and crowns.

3.9 Summary of Construction Restrictions

- 3.9.1 The following restrictions apply for tree protection purposes: as illustrated on the Tree Protection Plan (TPP/17337/01):
- a) 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)
 - 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 situated 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.
 - g) No mechanical digging or scraping is permitted within a RPA / CEZ.
 - h) Only following construction completion can tree protection measures be removed and hard landscaping completed and any remaining soft landscaping/tree planting works be undertaken.

3.10 Report Handling

- 3.10.1 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.
- 3.10.2 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 (18164.22/S1/TPP/01_Rev.B)

TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'																					
CLIENT:		Wrexham Glydwr University		PROJECT REF:						18164.21/S1						SITE:			Plas Coch Campus, Wrexham, LL11 2AW		
CONTACT:		/		SURVEY DATE:						18th May 2018, 21st January 2021 & 16th August 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	Apple; Malus, Rosaceae	M	6	3	3	3	3	230	2.8	2	2 union	Normal	20 - 40	Planted in square planter in hard standing, multi-stem crown 2m, base contact with metal grid of planter.	B 2	Fell tree to facilitate approved scheme.					
T2	Purple Hazel; Corylus, Betulaceae	M	5	3.5	3.5	3.5	3.5	193	2.3	1.5	/	Normal	10 - 20	Planted in soft border, multi-stem base.	C 3	Fell tree to facilitate approved scheme.					
T3	Purple Hazel; Corylus, Betulaceae	M	5	2.5	2.5	2.5	2.5	176	2.1	1.5	/	Normal	10 - 20	Planted in soft border, multi-stem base, crown contact with building.	C 3						
T4	Cherry; Prunus, Rosaceae	M	10	1.5	4	3	4	240	2.9	1.5	/	Normal	10 - 20	Planted in soft border, multi-stem base, crown contact with building.	C 3						
T5	Goat Willow; Salix, Salicaceae	M	Tree removed since previous survey												U		Consider tree removal as a preventative H&S measure.				
T6	Cherry; Prunus, Rosaceae	M	12	4.5	4.5	4	5	400	4.8	1.5	2	Normal	10 - 20	Planted in soft border in parking, multi-stem crown at 2m.	C 3	Fell tree to facilitate approved scheme.					
G1	Lombardy Poplar group	M	20 +	/	/	/	/	500 AVE	6.0	1.5	/	Normal	10 - 20	Planted line in shrub border in parking, ivy in parts.	C 2	Fell tree to facilitate approved scheme.					
T7	Sweet Gum; Liquidambar, Hamamelidaceae	Y / SM	6	2.5	2.5	2.5	2.5	130	1.6	1.5	/	Normal	20 - 40	Planted in soft border in parking, young form.	C 3	Fell tree to facilitate approved scheme.					
T8	Sweet Gum; Liquidambar, Hamamelidaceae	Y / SM	6	2.5	2.5	2.5	2.5	120	1.4	1.5	/	Normal	20 - 40	Planted in soft border in parking, young form.	C 3	Fell tree to facilitate approved scheme.					
T9	Sweet Gum; Liquidambar, Hamamelidaceae	Y / SM	4	2	2	2	2	90	1.1	1.5	/	Fair	10 - 20	Planted in soft border in parking, young form, poor extension growth.	C 3	Fell tree to facilitate approved scheme.					
T10	Sweet Gum; Liquidambar, Hamamelidaceae	Y / SM	4	1.5	1.5	1.5	1.5	80	1.0	1.5	/	Fair	10 - 20	Planted in soft border in parking, young form, poor extension growth.	C 3	Fell tree to facilitate approved scheme.					
T11	Sweet Gum; Liquidambar, Hamamelidaceae	Y / SM	6	2	2	2	2	140	1.7	2	/	Normal	20 - 40	Planted in soft border in parking, young form.	C 3	Fell tree to facilitate approved scheme.					
T12	Rowan; Sorbus, Rosaceae	EM	6	2.5	2.5	2.5	2.5	170	2.0	1.5	/	Normal	20 - 40	Planted in soft border in parking, multi-stem crown at 2m.	C 3	Fell tree to facilitate approved scheme.					
T13	Rowan; Sorbus, Rosaceae	EM	6	2	1.5	1.5	2	160	1.9	1.5	/	Normal	10 - 20	Planted in soft border in parking, impact damage on stem at 1m, tear out in crown.	C 3	Fell tree to facilitate approved scheme.					
T14	Rowan; Sorbus, Rosaceae	EM	6	2	2	2	2	140	1.7	1.5	/	Normal	20 - 40	Planted in soft border in parking.	C 3	Fell tree to facilitate approved scheme.					
T15	Cherry; Prunus, Rosaceae	Y / SM	3	1	1	1	1	80	1.0	1.5	/	Normal	10 - 20	Planted in soft border in parking, stake and tie in place.	C 3	Fell tree to facilitate approved scheme.					
T16	Rowan; Sorbus, Rosaceae	SM	5	2	2	2	2	100	1.2	1.5	/	Normal	10 - 20	Planted in soft border in parking.	C 3	Fell tree to facilitate approved scheme.					
T17	Cherry; Prunus, Rosaceae	SM	5	2.5	2.5	2.5	2.5	140	1.7	1.5	/	Normal	10 - 20	Planted in soft border in parking.	C 3	Fell tree to facilitate approved scheme.					
T18	Cherry; Prunus, Rosaceae	Y / SM	3	1	1	1	1	90	1.1	1.5	/	Normal	10 - 20	Planted in soft border in parking.	C 3	Fell tree to facilitate approved scheme.					
T19	Alder; Carpinus, Betulaceae	SM	4	2	2	2	2	130	1.6	2	/	Fair	10 - 20	Planted in soft border in parking, ivy, dead leader	C 3	Fell tree to facilitate approved scheme.					
T20	Elm; Ulmus, Ulmaceae	SM	5	3	3.5	2.5	2	100	1.2	1.5	/	Fair	10 - 20	Planted in soft border in parking, dieback in upper crown.	C 3	Fell tree to facilitate approved scheme.					
T21	Rowan; Sorbus, Rosaceae	SM	5	1.5	1.5	1.5	1.5	110	1.3	1.5	/	Fair	10 - 20	Planted in soft border in parking, crown suppressed by T20, deadwood.	C 3	Fell tree to facilitate approved scheme.					

TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'																		
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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	
T22	Cherry; Prunus, Rosaceae	Y / SM	2.5	1.5	1.5	1.5	1.5	100	1.2	1.5	/	Normal	10 - 20	Planted in soft border in parking, stake and tie in place.	C 3	Fell tree to facilitate approved scheme.		
T23	Cherry; Prunus, Rosaceae	Y / SM	2.5	1	1	1	1	80	1.0	1.5	/	Normal	10 - 20	Planted in soft border in parking, stake and tie in place, sparse crown in parts.	C 3	Fell tree to facilitate approved scheme.		
T24	Rowan; Sorbus, Rosaceae	EM	6	2	2	2	2	140	1.7	/	/	Normal	10 - 20	Planted in soft border/access.	C 3	Fell tree to facilitate approved scheme.		
T25	Rowan; Sorbus, Rosaceae	EM	6	2	2	2	2	130	1.6	/	/	Normal	10 - 20	Planted in soft border/access.	C 3	Fell tree to facilitate approved scheme.		
T26	Sweet Gum; Liquidambar, Hamamelidaceae	Y / SM	4	1	1	1	1	75	0.9	/	/	Fair / Poor	10 - 20	Planted in soft border/access, poor extension growth.	C 3	Fell tree to facilitate approved scheme.		
T27	Sweet Gum; Liquidambar, Hamamelidaceae	Y / SM	5	1.5	1.5	1.5	1.5	90	1.1	/	/	Normal	10 - 20	Planted in soft border/access.	C 3	Fell tree to facilitate approved scheme.		
T28	Sweet Gum; Liquidambar, Hamamelidaceae	Y / SM	6	1.5	1.5	1.5	1.5	100	1.2	/	/	Normal	10 - 20	Planted in soft border/access.	C 3	Fell tree to facilitate approved scheme.		
T29	Cherry; Prunus, Rosaceae	M	7	3	3.5	6	4	430	5.2	1.5	2	Normal	20 - 40	Planted in soft border, multi-stem at 1.5m.	B 3			
T30	Cherry; Prunus, Rosaceae	M	7	4.5	4	4	4	440	5.3	1.5	2	Normal	20 - 40	Planted in soft border, multi-stem at 1.5m.	B 3			
T31	Cherry; Prunus, Rosaceae	M	6	4	4	4	4	300	3.6	1.5	2	Fair	20 - 40	Planted in soft border, multi-stem at 1.5m, dieback noted.	C 3			
G2	Birch group	EM	10	/	/	/	/	270 AVE	3.2	1.5	/	Normal	40 +	Trio planted in turf area.	B 2			
T32	Whitebeam; Sorbus, Rosaceae	Y / SM	4	2	2	2	2	80	1.0	1	/	Normal	20 - 40	Planted in turf area, current small scale	C 3			
T33	Whitebeam; Sorbus, Rosaceae	Y / SM	4	2	2	2	2	90	1.1	1.5	/	Normal	20 - 40	Planted in turf area, current small scale	C 3			
T34	Whitebeam; Sorbus, Rosaceae	SM	4	2	2	2	2	120	1.4	1	/	Normal	20 - 40	Planted in turf area, current small scale	C 3			
T35	Whitebeam; Sorbus, Rosaceae	SM	4	2	2	2	2	120	1.4	1	/	Normal	20 - 40	Planted in turf area, current small scale	C 3			
G3	Birch group	M	12	/	/	/	/	300	3.6	1.5	/	Normal	40 +	Trio planted in turf area.	B 2			
G4	Birch group	EM	7.5	/	/	/	/	200	2.4	1.5	/	Normal	40 +	Pair planted in turf area.	B 2			
T36	Hawthorn; Crataegus, Rosaceae	EM	3	2	2	2	2	200	2.4	0	/	Normal	20 - 40	Planted in turf area, current small scale	C 3			
T37	Birch; Betula, Betulaceae	EM	9	2.5	2.5	2.5	2.5	148	1.8	1.5	/	Normal	20 - 40	Planted in turf area, co-dominant base.	B 3			
T38	Birch; Betula, Betulaceae	EM	10	3	2.5	2.5	2.5	160	1.9	1.5	/	Normal	20 - 40	Planted in turf area.	B 3			
T39	Oak; Quercus, Fagaceae	SM	8	2.5	2.5	2.5	2.5	210	2.5	2	2	Normal	40 +	Planted in turf area, multi-stem at 2m, current young form, good future potential.	B 3			
T40	Rowan; Sorbus, Rosaceae	SM	5	1.5	1.5	1.5	1.5	150	1.8	1	/	Normal	10 - 20	Planted in turf area, multi-stem base.	C 3			
G5	Cherry group	M	< 12	/	/	/	/	400 - 650	7.8	1.5	/	Normal	20 - 40	Collective canopy group, ivy on 1no. stem.	B 2	Sever Ivy to allow unobscured tree assessment		
G6	Ornamental group	Y	< 4	/	/	/	/	< 100	1.2	/	/	Normal	10 - 20	Relatively young ornamental group.	C 2			
T41	Raywood Ash; Fraxinus, Oleaceae	SM	6	2	2	2	2	130	1.6	2	/	Normal	20 - 40	Planted in soft border, single stem, good future potential.	B 3			
T42	Raywood Ash; Fraxinus, Oleaceae	SM	6	2	2	2	2	120	1.4	2	/	Normal	20 - 40	Planted in soft border, single stem, good future potential.	B 3			
T43	Raywood Ash; Fraxinus, Oleaceae	SM	6	2	2	2	2	100	1.2	2	/	Normal	20 - 40	Planted in soft border, single stem, good future potential.	B 3			
T44	Raywood Ash; Fraxinus, Oleaceae	SM	6	2	2	2	2	100	1.2	2	/	Normal	20 - 40	Planted in soft border, single stem, good future potential.	B 3			
T45	Raywood Ash; Fraxinus, Oleaceae	SM	6	2	2	2	2	120	1.4	2	/	Normal	20 - 40	Planted in soft border, single stem, good future potential.	B 3			

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

CLIENT: Wrexham Glydwr University

PROJECT REF: 18164.21/S1

SITE: Plas Coch Campus, Wrexham, LL11 2AW

CONTACT: /

SURVEY DATE: 18th May 2018, 21st January 2021 & 16th August 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
T46	Raywood Ash; Fraxinus, Oleaceae	SM	6	2	2	2	2	130	1.6	2	/	Normal	20 - 40	Planted in soft border, single stem, good future potential.	B 3	
T47	Raywood Ash; Fraxinus, Oleaceae	SM	6	2	2	2	2	110	1.3	2	/	Normal	20 - 40	Planted in soft border, single stem, good future potential.	B 3	
T48	Raywood Ash; Fraxinus, Oleaceae	SM	6	2.5	2.5	2.5	2.5	140	1.7	2	/	Normal	20 - 40	Planted in soft border, single stem, sparse canopy in parts, dieback.	C 2	Mulch soft border to ensure successful tree establishment, and monitor tree's condition.
T49	Oriental Plane, Platanaceae,	EM	12	4.5	3	3.5	4.5	160	1.9	1.5	/	Normal	40 +	Planted in turf area towards boundary.	B 3	
T50	Oriental Plane, Platanaceae,	EM	12	5	2.5	3	4	160	1.9	1.5	/	Normal	40 +	Planted in turf area towards boundary.	B 3	
T51	Oriental Plane, Platanaceae,	EM	11	3	4.5	2.5	3.5	130	1.6	1.5	/	Normal	40 +	Planted in turf area towards boundary.	B 3	
T52	Oriental Plane, Platanaceae,	EM	10	3.5	3.5	3.5	3.5	140	1.7	1.5	/	Normal	40 +	Planted in turf area towards boundary.	B 3	
T53	Oriental Plane, Platanaceae,	EM	11	4	3.5	3.5	3.5	150	1.8	1.5	/	Normal	40 +	Planted in turf area towards boundary.	B 3	
T54	Oriental Plane, Platanaceae,	EM	10	3.5	2.5	3.5	3.5	130	1.6	1.5	/	Normal	40 +	Planted in turf area towards boundary.	B 3	
T55	Lime; Tilia, Tiliaceae	SM	4.5	3	3	3	3	200	2.4	1.5	/	Normal	40 +	Planted in turf area towards boundary, stake at base.	B 3	Remove stake.
G7	Mixed group (Cherry, Cornus sp., Elder, Goat Willow, Hazel, Birch, Ash)	M	4 - 10	/	/	/	/	200	2.4	0	/	Normal	20 - 40	Planted towards boundary, screen/buffer planting, ivy in parts.	B 2	
T56	Alder; Carpinus, Betulaceae	M	12	2.5	2.5	2.5	2.5	250	3.0	2	2	Normal	20 - 40	Planted in soft border in parking, single stem.	B 3	
T57	Rowan; Sorbus, Rosaceae	EM	6	2	2	2	2	120	1.4	2	/	Normal	10 - 20	Planted in soft border in parking.	C 3	
T58	Rowan; Sorbus, Rosaceae	EM	6	2	2	2	2	130	1.6	2	/	Normal	10 - 20	Planted in soft border in parking.	C 3	
T59	Rowan; Sorbus, Rosaceae	EM	6	2	2	2	2	130	1.6	2	/	Normal	10 - 20	Planted in soft border in parking.	C 3	
T60	Birch; Betula, Betulaceae	EM	12	2.5	2.5	2.5	2.5	250	3.0	2	/	Normal	20 - 40	Planted in soft border in parking.	B 3	
T61	Cherry; Prunus, Rosaceae	EM	7.5	3	3	3	3	210	2.5	2	/	Fair	10 - 20	Planted in soft border in parking, sparse canopy in parts.	C 3	Mulch soft border to ensure successful tree establishment.
T62	Cherry; Prunus, Rosaceae	EM	6	3	3	3	3	220	2.6	2	/	Normal	20 - 40	Planted in soft border in parking.	B 3	
T63	Rowan; Sorbus, Rosaceae	EM	7	1.5	2	1.5	1.5	100	1.2	/	/	Normal	10 - 20	Planted in soft border in parking.	C 3	
T64	Rowan; Sorbus, Rosaceae	EM	7	1.5	1.5	1.5	1.5	110	1.3	/	/	Normal	10 - 20	Planted in soft border in parking.	C 3	
T65	Rowan; Sorbus, Rosaceae	EM	7	2	2	2	2	100	1.2	/	/	Normal	10 - 20	Planted in soft border in parking.	C 3	
T66	Field Maple; Acer, Aceraceae	SM	6	1.5	1.5	1.5	1.5	130	1.6	/	/	Normal	20 - 40	Planted in soft border in parking, stake no tie.	C 3	
T67	Field Maple; Acer, Aceraceae	SM	6	1.5	1.5	1.5	1.5	110	1.3	/	/	Normal	20 - 40	Planted in soft border in parking, stake no tie.	C 3	
T68	Ash; Fraxinus, Oleaceae	EM	14	4	4	4	4	250	3.0	2	2	Normal	20 - 40	Planted line in soft border near building, crown close to building.	B 2	
T69	Ash; Fraxinus, Oleaceae	EM	13	4	4	4	4	240	2.9	2	2	Normal	20 - 40	Planted line in soft border near building, crown close to building.	B 2	
T70	Ash; Fraxinus, Oleaceae	EM	12	4	4	4	4	230	2.8	2	2	Normal	20 - 40	Planted line in soft border near building, crown close to building.	B 2	
T71	Ash; Fraxinus, Oleaceae	EM	12	4	4	4	4	230	2.8	2	2	Normal	20 - 40	Planted line in soft border near building, crown close to building.	B 2	
T72	Ash; Fraxinus, Oleaceae	EM	12	4	4	4	4	240	2.9	2	2	Normal	20 - 40	Planted line in soft border near building, crown close to building.	B 2	
T73	Ash; Fraxinus, Oleaceae	EM	12	4	4	4	4	191	2.3	2	2	Normal	20 - 40	Planted line in soft border near building, crown close to building, co-dominant base below 1.5m.	B 2	

TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'																
CLIENT: Wrexham Glydwr University			PROJECT REF: 18164.21/S1						SITE: Plas Coch Campus, Wrexham, LL11 2AW							
CONTACT: /			SURVEY DATE: 18th May 2018, 21st January 2021 & 16th August 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
T74	Ash; Fraxinus, Oleaceae	EM	12	4	4	4	4	240	2.9	2	2	Normal	20 - 40	Planted line in soft border near building, crown close to building.	B 2	
T75	Alder; Carpinus, Betulaceae	M	13	2.5	2.5	2.5	2.5	227	2.7	1.5	/	Normal	20 - 40	Planted in soft border, co-dominant base.	B 3	
T76	Spruce; Picea, Pinaceae	EM	13	2.5	2.5	2.5	2.5	260	3.1	2	/	Normal	20 - 40	Single stem, crown close to building but only branch tips touching.	B 3	
T77	Field Maple; Acer, Aceraceae	M	8	3.5	3.5	3.5	3.5	430	5.2	2	2	Normal	20 - 40	Multi-stem at 2m, crown conflict with building, deadwood.	B 3	Remove deadwood and prune to 1.5m clear of building.
T78	Cherry; Prunus, Rosaceae	M	6	3.5	3.5	3.5	3.5	240	2.9	/	/	Normal	20 - 40	Planted in soft border, multi-stem at 2m, crown close to building.	B 3	Prune to provide at least 1.5m crown clearnace to building.
T79	Cherry; Prunus, Rosaceae	M	6	3.5	3	4.5	3	140	1.7	/	/	Normal	20 - 40	Planted in soft border, multi-stem 2m, crown contact with building.	B 3	
T80	Elm; Ulmus, Ulmaceae	M	20	6.5	8	12	9	1250	15.0	1.5	/	Normal	20 - 40	Growing in G7, no access to stem, large bole, multi-stem form 1m with large limbs, snap-out in crown, deadwood noted.	A 1	
G8	Mixed group (Cherry, Cornus sp., Horse Chestnut, Red Oak, Hazel, Hawthorn, Ash)	M	6 - 12	/	/	/	/	250	3.0	0	/	Normal	40 +	Mixed group growing towards the boundary, screen/buffer planting.	B 2	
T81	Rowan; Sorbus, Rosaceae	M	8	3	3	3	3	240	2.9	2	/	Normal	20 - 40	Planted in turf area, single stem.	B 3	
T82	Cherry; Prunus, Rosaceae	M	8	3	3	3	3	230	2.8	1.5	/	Normal	20 - 40	Planted in turf area, single stem.	B 3	
T83	Birch; Betula, Betulaceae	EM	12	2.5	2.5	2.5	2.5	130	1.6	/	/	Normal	20 - 40	Planted in soft border, leans east.	B 3	
T84	Cypress; Cupressus, Cupressaceae	EM	10	1.5	1.5	1.5	1.5	160	1.9	2	/	Normal	20 - 40	Planted in soft border near building, leans north.	C 3	
T85	Cypress; Cupressus, Cupressaceae	EM	14	1.5	1.5	1.5	1.5	180	2.2	2	/	Normal	20 - 40	Planted in soft border near building.	C 3	
T86	Cypress; Cupressus, Cupressaceae	EM	15	1.5	1.5	1.5	1.5	210	2.5	2	/	Normal	20 - 40	Planted in soft border near building.	C 3	
T87	Cypress; Cupressus, Cupressaceae	EM	14	1.5	1.5	1.5	1.5	200	2.4	2	/	Normal	20 - 40	Planted in soft border near building.	C 3	
T88	Maple; Acer, Aceraceae	SM / EM	8	2.5	2.5	2.5	2.5	210	2.5	/	/	Poor	10 - 20	Deadwood and dieback throughout, impact damage at base.	C 3	Monitor tree's condition.
T89	Cherry; Prunus, Rosaceae	M	11	3	3	3	3	210	2.5	1.5	/	Normal	20 - 40	Fair form.	B 3	
T90	Cherry; Prunus, Rosaceae	EM	8	2.5	2.5	2.5	4	184	2.2	1.5	/	Normal	10 - 20	Planted in soft border, multi-stem base.	C 2	
G9	Mixed group (birch, willow, sycamore)	EM	< 10	/	/	/	/	150	1.8	2.5	/	Normal	10 - 20	Trio in soft border next to access.	C 2	
T91	Rowan; Sorbus, Rosaceae	EM	6	2.5	2.5	2.5	2.5	120	1.4	1.5	/	Normal	10 - 20	Planted in soft border.	C 3	
T92	Cherry; Prunus, Rosaceae	EM	6	3	3	3	3	170	2.0	1	2	Normal	20 - 40	Planted in turf area, multi-stem at 2m	B 3	
T93	Cherry; Prunus, Rosaceae	M	10	4	4	4	4	250	3.0	1	2	Normal	20 - 40	Planted in turf area, multi-stem at 2m	B 3	
T94	Hawthorn; Crataegus, Rosaceae	EM	10	2.5	2.5	2.5	2.5	150	1.8	2	/	Normal	20 - 40	Planted in turf area, multi-stem at 2m	B 3	
T95	Oriental Plane, Platanaceae,	EM	14	3.5	4.5	4	4	220	2.6	2	/	Normal	40 +	Planted in turf area.	B 1	
T96	Whitebeam; Sorbus, Rosaceae	EM	6.5	2	2	2	2	210	2.5	/	/	Normal	20 - 40	Planted in turf area.	B 1	
T97	Birch; Betula, Betulaceae	EM	14	2.5	2.5	4	2.5	237	2.8	/	/	Normal	20 - 40	Planted in turf area, multi-stem base.	B 1	
T98	Hornbeam; Carpinus, Betulaceae	EM	10	2	2	2	2	160	1.9	/	/	Normal	20 - 40	Planted in turf area.	B 1	
T99	Birch; Betula, Betulaceae	EM	12	2.5	2.5	2.5	2.5	233	2.8	/	/	Normal	20 - 40	Planted in turf area, co-dominant base.	B 1	
T100	Cherry; Prunus, Rosaceae	M	11	5	6.5	6.5	5	760	9.1	2	/	Normal	20 - 40	Planted in turf area near building, multi-stem at 2m, crown overhang of build but clear.	B 1	
T101	Cherry; Prunus, Rosaceae	M	8	4.5	4.5	4.5	4.5	270	3.2	/	/	Normal	20 - 40	Planted in turf area, multi-stem at 2m.	B 1	

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CONTACT: /				SURVEY DATE: 18th May 2018, 21st January 2021 & 16th August 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
T102	Spruce; Picea, Pinaceae	SM	8	1.5	1.5	1.5	1.5	200	2.4	/	/	Normal	10 - 20	Planted in soft border.	C 3	Fell tree to facilitate approved scheme.
T103	Birch; Betula, Betulaceae	M	12	5	5	3.5	4.5	410	4.9	0	1.5	Normal	20 - 40	Planted in soft border in parking, crown contact with building.	B 1	Fell tree to facilitate approved scheme.
T104	Birch; Betula, Betulaceae	M	12	4	3	3	3	280	3.4	1	1.5	Normal	20 - 40	Planted in soft border in parking, crown contact with building.	B 1	Fell tree to facilitate approved scheme.
T105	Cherry; Prunus, Rosaceae	EM	10	4.5	2.5	3.5	3.5	240	2.9	1.5	/	Normal	20 - 40	Planted in soft border next to access.	C 3	
G10	Lombardy Poplar group	M	20 +	/	/	/	/	500 AVE	6.0	/	/	Normal	10 - 20	Planted line at boundary.	C 2	
T106	Cherry; Prunus, Rosaceae	EM	6	2.5	2.5	2.5	2.5	150	1.8	2	/	Normal	10 - 20	Planted in soft border next to access.	C 3	
T107	Cherry; Prunus, Rosaceae	EM	5	2	2	2	2	140	1.7	2	/	Normal	10 - 20	Planted in soft border next to access.	C 3	
T108	Cherry; Prunus, Rosaceae	EM	5	2	2	2	2	120	1.4	2	/	Normal	10 - 20	Planted in soft border next to access.	C 3	
T109	Cherry; Prunus, Rosaceae	EM	6	2	2	2	2	130	1.6	2	/	Normal	10 - 20	Planted in soft border next to access and parking.	C 3	Fell tree to facilitate approved scheme.
T110	Cherry; Prunus, Rosaceae	EM	5	2	2	2	2	130	1.6	2	/	Normal	10 - 20	Planted in soft border next to access, impact damage at base, multi-stem at 2m.	C 3	
T111	Cherry; Prunus, Rosaceae	EM	7	2.5	2.5	2.5	2.5	160	1.9	2	/	Normal	10 - 20	Planted in soft border next to access, epicormic growth at base, multi-stem at 2m.	C 3	Fell tree to facilitate approved scheme.
T112	Cherry; Prunus, Rosaceae	EM	6	2	3	2.5	2.5	130	1.6	2	/	Normal	10 - 20	Planted in soft border next to access.	C 3	
T113	Birch; Betula, Betulaceae	EM	6	2	2	2	2	100	1.2	2	/	Normal	10 - 20	Planted in soft border next to access.	C 3	
T114	Cherry; Prunus, Rosaceae	EM	6	2	2	2	2	120	1.4	/	/	Normal	10 - 20	Planted in soft border next to access, impact damage at base, multi-stem at 2m.	C 3	
T115	Cherry; Prunus, Rosaceae	EM	6	2	2	2	2	110	1.3	/	/	Normal	10 - 20	Planted in soft border next to access, impact damage at base, multi-stem at 2m.	C 3	
T116	Birch; Betula, Betulaceae	EM	6	2.5	2.5	2.5	2.5	140	1.7	/	/	Normal	10 - 20	Planted in soft border next to access, compacted soils in border, sparse canopy.	C 3	
T117	Birch; Betula, Betulaceae	EM	6	1.5	1	1.5	1.5	100	1.2	/	/	Poor	10 - 20	Planted in soft border next to access, compacted soils in border, sparse canopy.	C 3	Mulch soft border to ensure successful tree establishment.
T118	Birch; Betula, Betulaceae	EM	4	2	2	2	2	110	1.3	/	/	Normal	10 - 20	Planted in soft border next to access, compacted soils in border.	C 3	Fell tree to facilitate approved scheme.
T119	Birch; Betula, Betulaceae	EM	9	1.5	1.5	1.5	1.5	120	1.4	/	/	Normal	10 - 20	Planted in soft border next to access, compacted soils in border.	C 3	Fell tree to facilitate approved scheme.
T120	Cherry; Prunus, Rosaceae	EM	7	2	1.5	2.5	2	180	2.2	2	2	Normal	20 - 40	Planted in soft border next to access, established tree.	B 2	Fell tree to facilitate approved scheme.
T121	Birch; Betula, Betulaceae	EM	10	2.5	2.5	2.5	2.5	170	2.0	2	2	Normal	20 - 40	Planted in soft border next to access, established tree.	B 2	Fell tree to facilitate approved scheme.
T122	Birch; Betula, Betulaceae	EM	12	3	3.5	2.5	3	190	2.3	1.5	/	Normal	20 - 40	Planted in soft border next to access, established tree.	B 3	Fell tree to facilitate approved scheme.
T123	Cherry; Prunus, Rosaceae	EM	8	2	2	2	2	150	1.8	2	/	Normal	10 - 20	Planted in soft border next to access.	C 3	Fell tree to facilitate approved scheme.
T124	Birch; Betula, Betulaceae	EM	6.5	2	2	2	2	140	1.7	2	/	Normal	10 - 20	Planted in soft border.	C 3	
T125	Birch; Betula, Betulaceae	EM	6.5	2	2	2	2	110	1.3	2	/	Normal	10 - 20	Planted in soft border.	C 3	
T126	Birch; Betula, Betulaceae	EM	6.5	2	2	2	2	120	1.4	2	/	Normal	10 - 20	Planted in soft border.	C 3	
T127	Birch; Betula, Betulaceae	EM	6.5	2	2	2	2	130	1.6	2	/	Normal	10 - 20	Planted in soft border.	C 3	
T128	Birch; Betula, Betulaceae	EM	6.5	2	2	2	2	140	1.7	2	/	Normal	10 - 20	Planted in soft border.	C 3	
T129	Birch; Betula, Betulaceae	EM	4	1.5	1.5	1.5	1.5	130	1.6	2	/	Normal	10 - 20	Planted in soft border.	C 3	

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T130	Birch; Betula, Betulaceae	EM	8	2.5	2.5	2.5	2.5	150	1.8	2	/	Normal	20 - 40	Planted in soft border, established tree.	B 3	Fell tree to facilitate approved scheme.
T131	Willow; Salix, Salicaceae	SM	12					203	2.4	1.5	/	Normal	10 - 20	Planted in soft border, co-dominant base, leggy stems.	C 3	Fell tree to facilitate approved scheme.
T132	Birch; Betula, Betulaceae	EM	8	2	2	2	2	150	1.8	1	/	Normal	10 - 20	Planted in turf area, stake and tie in place, tie partially occluded in stem.	C 3	Fell tree to facilitate approved scheme.
T133	Cherry; Prunus, Rosaceae	EM	8	2.5	2.5	2.5	2.5	200	2.4	2	/	Normal	10 - 20	Planted in turf area near parking, epicormic growth near base.	C 3	Fell tree to facilitate approved scheme.
T134	Cherry; Prunus, Rosaceae	EM	8	2	2	2	2	150	1.8	2	/	Normal	10 - 20	Planted in turf area near parking.	C 3	Fell tree to facilitate approved scheme.
T135	Cherry; Prunus, Rosaceae	EM	8	3.5	3.5	3.5	3.5	230	2.8	1.5	/	Normal	10 - 20	Planted in turf area near parking, multi-stem base.	C 3	Fell tree to facilitate approved scheme.
T136	Norway Maple; Acer, Aceraceae	M	11	2.5	3.5	2.5	3.5	250	3.0	2	/	Normal	20 - 40	Part of planted line in soft border next to access, established tree, multi-stem at 2m.	B 2	
T137	Norway Maple; Acer, Aceraceae	M	11	3	3	3	3	220	2.6	2	/	Normal	20 - 40	Part of planted line in soft border next to access, established tree, multi-stem at 2m.	B 2	
T138	Norway Maple; Acer, Aceraceae	M	10	3	3	3	3	190	2.3	2	/	Normal	20 - 40	Part of planted line in soft border next to access, established tree	B 2	
T139	Norway Maple; Acer, Aceraceae	M	9	2.5	2.5	2.5	2.5	170	2.0	2	/	Normal	20 - 40	Part of planted line in soft border next to access, established tree and parking	B 2	
T140	Norway Maple; Acer, Aceraceae	M	8	2.5	2.5	2.5	2.5	180	2.2	2	/	Normal	20 - 40	Part of planted line in soft border next to access, established tree and parking	B 2	
T141	Norway Maple; Acer, Aceraceae	M	9	2	2	2	2	150	1.8	2	2	Normal	20 - 40	Part of planted line in soft border next to access, established tree	B 2	
T142	Norway Maple; Acer, Aceraceae	M	8	2	2	2	2	140	1.7	2	2	Normal	20 - 40	Part of planted line in soft border next to access, established tree	B 2	
T143	Norway Maple; Acer, Aceraceae	M	9	2	2	2	2	170	2.0	2	2	Normal	20 - 40	Part of planted line in soft border next to access, established tree	B 2	
T144	Norway Maple; Acer, Aceraceae	M	9	2	2	2	2	150	1.8	2	2	Normal	20 - 40	Part of planted line in soft border next to access, established tree	B 2	
T145	Norway Maple; Acer, Aceraceae	M	9	2.5	2.5	2.5	2.5	140	1.7	2	2	Normal	20 - 40	Part of planted line in soft border next to access, established tree	B 2	
T146	Norway Maple; Acer, Aceraceae	M	10	1.5	3	2.5	3	200	2.4	2	2	Normal	20 - 40	Part of planted line in soft border next to access, established tree	B 2	
T147	Norway Maple; Acer, Aceraceae	M	10	3.5	3.5	3.5	3.5	240	2.9	2	2	Normal	20 - 40	Part of planted line in soft border next to access, established tree	B 2	
T148	Norway Maple; Acer, Aceraceae	M	10	3.5	3.5	3.5	3.5	350	4.2	2	2	Normal	20 - 40	Part of planted line in soft border next to access, established tree	B 2	
T149	Norway Maple; Acer, Aceraceae	M	10	3.5	3.5	3.5	3.5	260	3.1	2	2	Normal	20 - 40	Part of planted line in soft border next to access, established tree	B 2	
T150	Norway Maple; Acer, Aceraceae	M	10	3.5	3.5	3.5	3.5	330	4.0	2	2	Normal	20 - 40	Part of planted line in soft border next to access, established tree	B 2	
T151	Norway Maple; Acer, Aceraceae	M	10	3.5	3.5	3.5	3.5	350	4.2	2	2	Normal	20 - 40	Part of planted line in soft border next to access, established tree, tight unions with included bark and possible crack forming.	B 2	Monitor union for signs of splitting.
T152	Norway Maple; Acer, Aceraceae	M	10	2.5	2.5	2.5	2.5	300	3.6	2	/	Normal	20 - 40	Part of planted line in soft border next to access, established tree	B 2	

TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'																							
CLIENT:		Wrexham Glydwr University		PROJECT REF:					18164.21/S1					SITE:					Plas Coch Campus, Wrexham, LL11 2AW				
CONTACT:		/		SURVEY DATE:					18th May 2018, 21st January 2021 & 16th August 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						
T153	Norway Maple; Acer, Aceraceae	M	10	2.5	2.5	2.5	2.5	300	3.6	2	/	Normal	20 - 40	Part of planted line in soft border next to access, established tree, ivy.	B 2	Fell tree.							
T154	Goat Willow; Salix, Salicaceae	SM	5	3	3	3	3	335	4.0	0	/	Poor	< 10	Multi-stem self-set tree under T153, some stems failed and laying on ground.	U								
T155	Cherry; Prunus, Rosaceae	M	8	4	4	4	4	360	4.3	1	/	Normal	20 - 40	Planted in soft border, established tree.	B 3								
T156	Cherry; Prunus, Rosaceae	EM	10	2.5	2.5	2.5	2.5	160	1.9	2	/	Normal	20 - 40	Planted in turf area next to access, established tree.	B 3								
T157	Cherry; Prunus, Rosaceae	EM	10	2.5	2.5	2.5	2.5	170	2.0	2	/	Normal	20 - 40	Planted in turf area next to access, established tree.	B 3								
T158	Cherry; Prunus, Rosaceae	EM	10	2.5	2.5	2.5	2.5	170	2.0	2	/	Normal	20 - 40	Planted in turf area next to access, established tree.	B 3								
T159	Birch; Betula, Betulaceae	EM	12	2	2	2	2	210	2.5	1	/	Normal	20 - 40	Planted in turf area next to access, established tree.	B 3								
T160	Box Elder; Acer, Aceraceae	M	10	4	4.5	5	4	351	4.2	/	/	Normal	20 - 40	Part of planted line next to access hard surfaces up to base, displacing hard surface in parts.	B 2								
T161	Box Elder; Acer, Aceraceae	M	10	3.5	4.5	5	5	370	4.4	/	/	Normal	20 - 40	Part of planted line next to access, hard surfaces up to base, displacing surface in parts.	B 2								
T162	Box Elder; Acer, Aceraceae	M	10	3	4	5	5	370	4.4	/	/	Normal	20 - 40	Part of planted line next to access, hard surfaces up to base, displacing surface in parts.	B 2								
T163	Field Maple; Acer, Aceraceae	M	10	3.5	3.5	3.5	3.5	400	4.8	2	/	Normal	20 - 40	Part of collective canopy group towards boundary	B 2								
T164	Field Maple; Acer, Aceraceae	M	10	3.5	3.5	4	3.5	410	4.9	2	/	Normal	20 - 40	Part of collective canopy group towards boundary	B 2								
T165	Field Maple; Acer, Aceraceae	M	10	3.5	3.5	4	3.5	350	4.2	2	/	Normal	20 - 40	Part of collective canopy group towards boundary, telegraph wire through crown.	B 2								
T166	Ash; Fraxinus, Oleaceae	M	8	3.5	1.5	5.5	3.5	210	2.5	2	/	Normal	10 - 20	Part of collective canopy group towards boundary, growth and lean away from T165.	B 2								
G11	Cherry & Rowan group	M	4 - 8	/	/	/	/	200	2.4	2	/	Normal	10 - 20	Multi-stem ornamental Rowan and Cherry planted towards the boundary.	C 2								
T167	Birch; Betula, Betulaceae	SM	7.5	2	2	2	2	120	1.4	1.5	/	Normal	10 - 20	Planted in turf area next to footpath, twisted growth	C 3								
T168	Weeping Birch; Betula, Betulaceae	M	4	2.5	4	4	2.5	250	3.0	0	/	Normal	10 - 20	Weeping form.	B 1								
T169	Lime; Tilia, Tiliaceae	M	18	5	5	5	5	500 ivy	6.0	/	/	Normal	40 +	Offsite, part of planted line at field boundary, thick ivy into crown.	B 2	Recommendation for tree owner: sever ivy at base.							
G12	Elm & Sycamore group	M	18	/	/	/	/	300 - 800	9.6	1.5	/	Normal	20 - 40	Offsite group, ivy in parts.	B 2								
T170	Elm; Ulmus, Ulmaceae	M	18	5	6	4.5	6	800 *	9.6	1.5	/	Normal	20 - 40	In G12, no access to stem, largest tree in G12, ivy.	B 2								
G13	Elm & Sycamore group	M	12 - 14	/	/	/	/	400 - 700	8.4	1.5	/	Normal	40 +	Offsite group, ivy in parts.	B 2								
T171	London Plane; Platanus x hispanica, Platanaceae,	Y / SM	9	2	2	2	2	100	1.2	/	/	Normal	10 - 20	Newly planted tree next to parking.	C 3	Mulch soft border to ensure successful tree establishment.							
T172	London Plane; Platanus x hispanica, Platanaceae,	Y / SM	9	2	2	2	2	110	1.3	/	/	Normal	10 - 20	Newly planted tree next to parking.	C 3								

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CONTACT: /				SURVEY DATE: 18th May 2018, 21st January 2021 & 16th August 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
T173	London Plane; Platanus x hispanica, Platanaceae,	Y / SM	9	2	2	2	2	100	1.2	/	/	Normal	10 - 20	Newly planted tree next to parking.	C 3	Mulch soft border to ensure successful tree establishment.
T174	London Plane; Platanus x hispanica, Platanaceae,	Y / SM	9	2	2	2	2	80	1.0	/	/	Normal	10 - 20	Newly planted tree next to parking.	C 3	Mulch soft border to ensure successful tree establishment.
T175	London Plane; Platanus x hispanica, Platanaceae,	Y / SM	9	2	2	2	2	110	1.3	/	/	Normal	10 - 20	Newly planted tree next to parking.	C 3	Mulch soft border to ensure successful tree establishment.
T176	London Plane; Platanus x hispanica, Platanaceae,	Y / SM	9	2	2	2	2	120	1.4	/	/	Normal	10 - 20	Newly planted tree next to parking.	C 3	Mulch soft border to ensure successful tree establishment.
T177	London Plane; Platanus x hispanica, Platanaceae,	Y / SM	9	2	2	2	2	110	1.3	/	/	Normal	10 - 20	Newly planted tree next to parking.	C 3	Mulch soft border to ensure successful tree establishment.
T178	London Plane; Platanus x hispanica, Platanaceae,	Y / SM	9	2	2	2	2	100	1.2	/	/	Normal	10 - 20	Newly planted tree next to parking.	C 3	Mulch soft border to ensure successful tree establishment.
T179	London Plane; Platanus x hispanica, Platanaceae,	Y / SM	9	2	2	2	2	100	1.2	/	/	Normal	10 - 20	Newly planted tree next to parking.	C 3	Mulch soft border to ensure successful tree establishment.
T180	London Plane; Platanus x hispanica, Platanaceae,	Y / SM	4	2	2	2	2	120	1.4	/	/	Normal	10 - 20	Newly planted tree next to parking, leader broken off at 1m.	C 3	Mulch soft border to ensure successful tree establishment.
T181	London Plane; Platanus x hispanica, Platanaceae,	Y / SM	9	2	2	2	2	110	1.3	/	/	Normal	10 - 20	Newly planted tree next to parking.	C 3	Mulch soft border to ensure successful tree establishment.
T182	London Plane; Platanus x hispanica, Platanaceae,	Y / SM	9	2	2	2	2	100	1.2	/	/	Normal	10 - 20	Newly planted tree next to parking.	C 3	Mulch soft border to ensure successful tree establishment.
T183	London Plane; Platanus x hispanica, Platanaceae,	Y / SM	9	2	2	2	2	100	1.2	/	/	Normal	10 - 20	Newly planted tree next to parking.	C 3	Mulch soft border to ensure successful tree establishment.
G14	Prunus sp group	NP / Y	5	/	/	/	/	75	0.9	0	/	Normal	10 - 20	Newly planted trees, stakes and ties in place.	C 2	
T184	Ornamental Maple	SM	3	2	2	2	2	80	1.0	1.5	/	Normal	10 - 20	Single stem ornamental in circular painter in hard standing.	C 3	
T185	Ornamental Maple	SM	3	2	2	2	2	90	1.1	1.5	/	Normal	10 - 20	Single stem ornamental in circular painter in hard standing.	C 3	
T186	Ornamental Maple	SM	3	2	2	2	2	70	0.8	1.5	/	Normal	10 - 20	Single stem ornamental in circular painter in hard standing.	C 3	
T187	Ornamental Maple	SM	3	2	2	2	2	70	0.8	1.5	/	Normal	10 - 20	Single stem ornamental in circular painter in hard standing.	C 3	
T188	Ornamental Maple	SM	3	2	2	2	2	70	0.8	1.5	/	Normal	10 - 20	Single stem ornamental in circular painter in hard standing.	C 3	
G15	Cherry group	SM	< 8	/	/	/	/	100	1.2	1.5	/	Normal	10 - 20	Sapling growth next to parking.	C 2	
T189	Cherry; Prunus, Rosaceae	M	10	4	4	4	4	360	4.3	1.5	/	Normal	10 - 20	Co-dominant at 1.5m, ivy.	C 2	
T190	Weeping Willow; Salix, Salicaceae	M	10	3	4	1	6	320	3.8	0	/	Normal	10 - 20	Weeping form, growth away from G16.	C 3	
G16	Lombardy Poplar group	M	20 +	/	/	/	/	500	6.0	/	/	Normal	10 - 20	3x trees planted towards the boundary.	C 2	

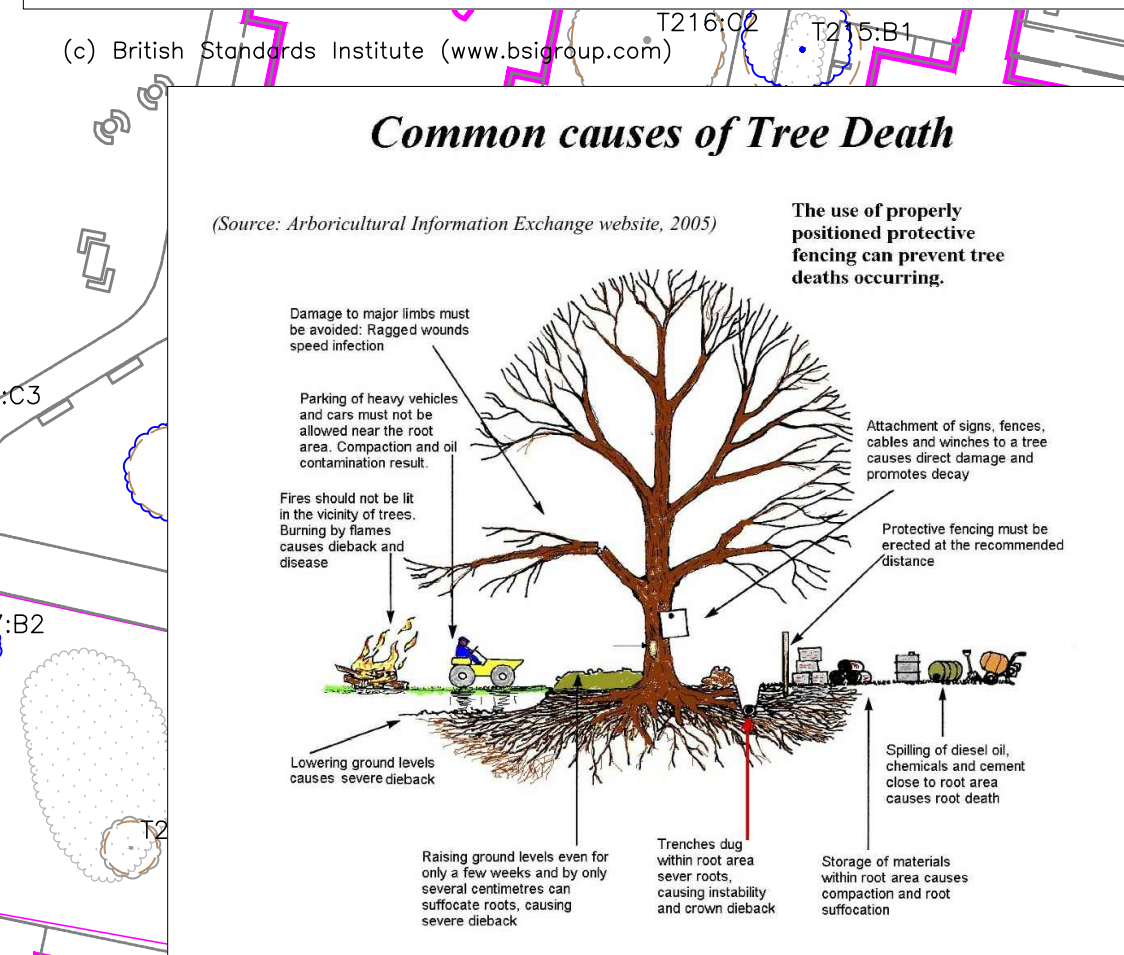
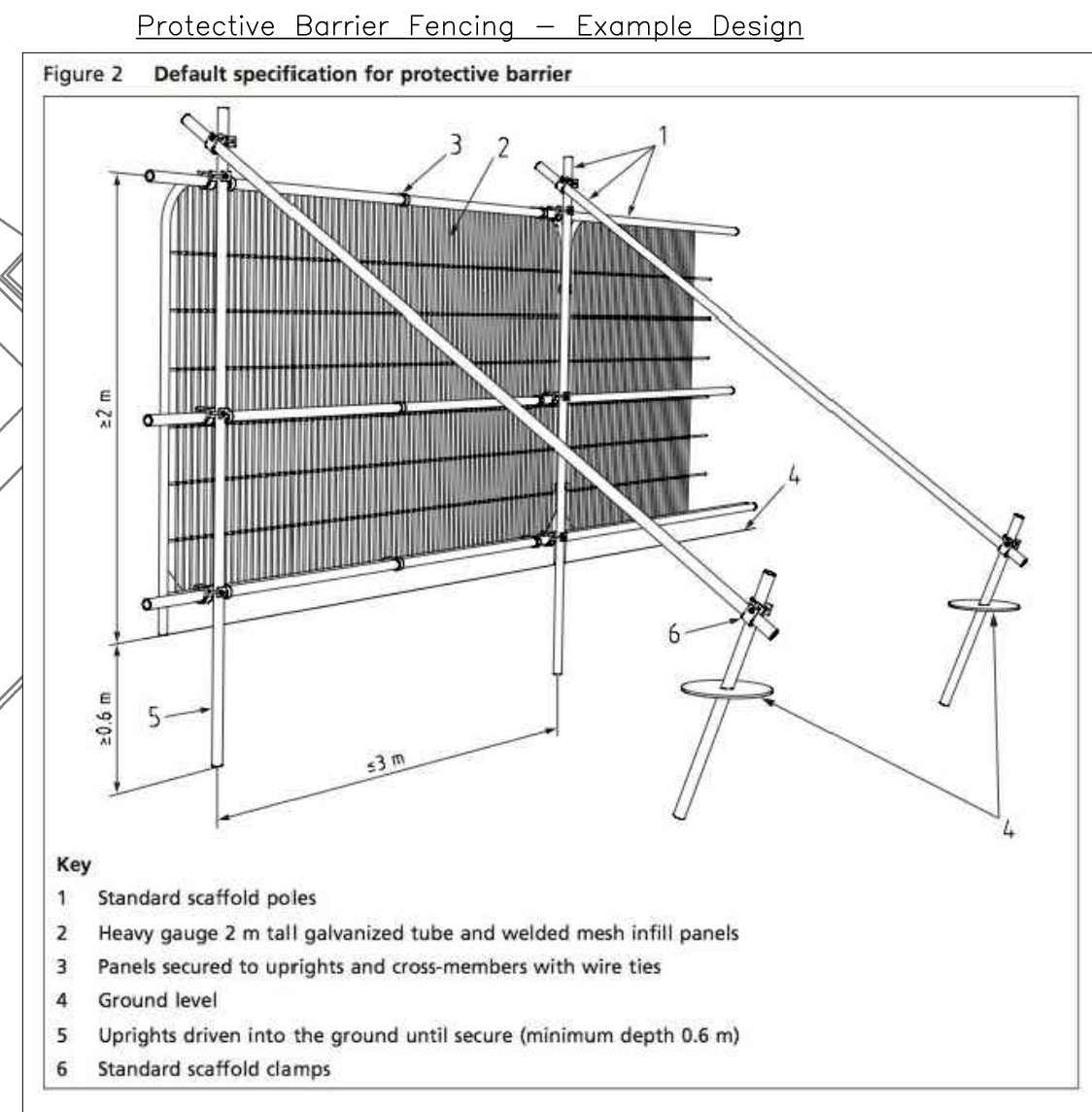
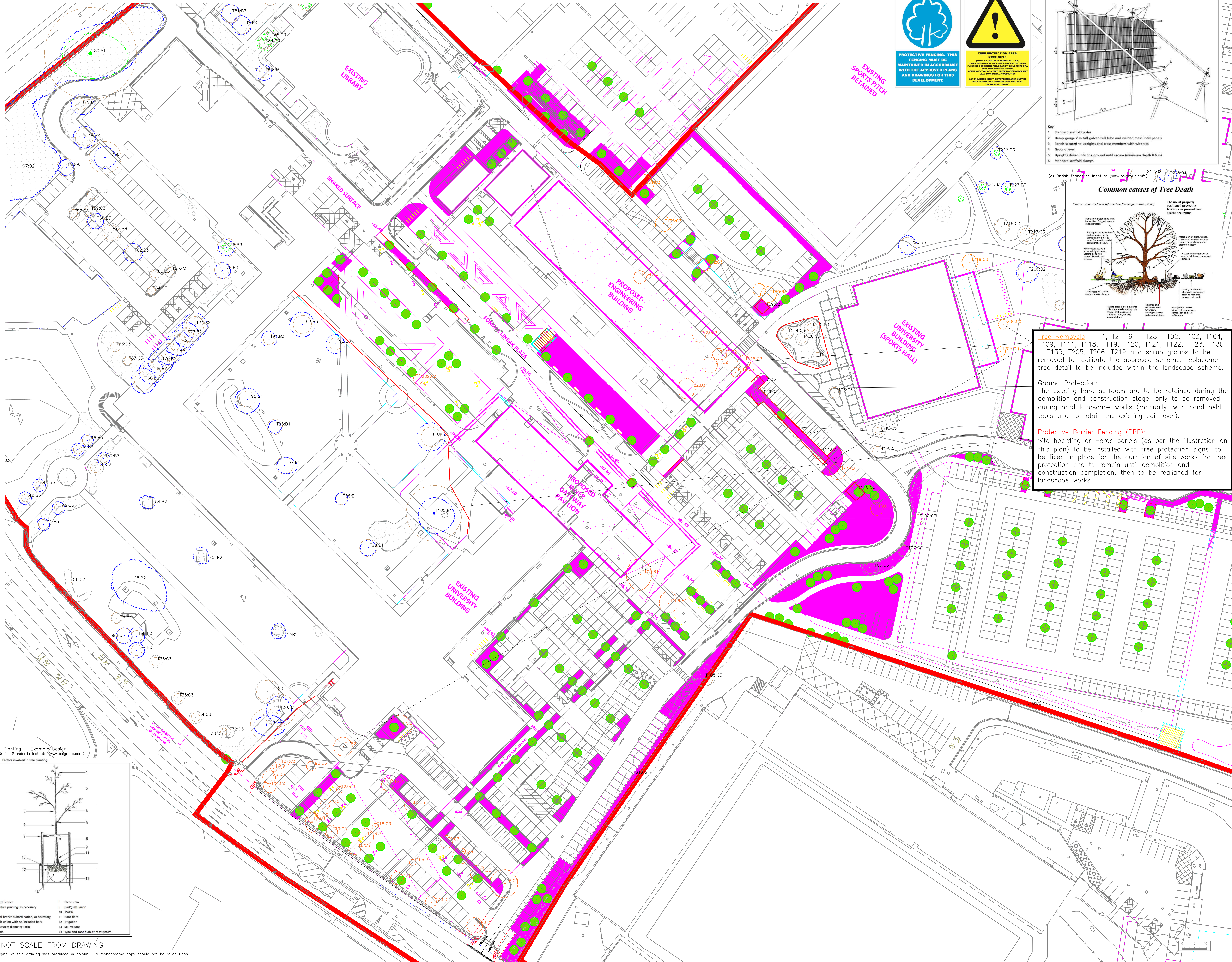
TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'																		
CLIENT:		Wrexham Glydwr University		PROJECT REF:				18164.21/S1				SITE:			Plas Coch Campus, Wrexham, LL11 2AW			
CONTACT:		/		SURVEY DATE:				18th May 2018, 21st January 2021 & 16th August 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	
G17	Lombardy Poplar group	M	20 +	/	/	/	/	500	6.0	/	/	Normal	10 - 20	Planted line towards the boundary.	C 2	Consider 50% reduction as a preventative h&S measure.		
T191	Birch; Betula, Betulaceae	M	12	4	1.5	2.5	3	310	3.7	/	/	Normal	10 - 20	Part of collective canopy group, co-dominant at 1.5m.	C 2			
T192	Birch; Betula, Betulaceae	M	14	2.5	4	6	6.5	480	5.8	/	/	Normal	20 - 40	Part of collective canopy group, co-dominant at 2m.	B 2			
T193	Birch; Betula, Betulaceae	M	10	1	3	4	2.5	240	2.9	/	/	Fair	10 - 20	Part of collective canopy group, suppressed by T192.	C 2			
T194	Birch; Betula, Betulaceae	M	15	2.5	3.5	3.5	3.5	380	4.6	/	/	Normal	20 - 40	Part of collective canopy group, crown conflict with building	B 2	Prune to provide at least 1.5m crown clearnace to building (one branch).		
T195	Birch; Betula, Betulaceae	M	8	2.5	2.5	2.5	2.5	250	3.0	/	/	Fair	10 - 20	Part of collective canopy group, twisted and stunted growth.	C 2			
T196	Birch; Betula, Betulaceae	M	10	3.5	3.5	3.5	3.5	380	4.6	/	/	Normal	10 - 20	One of a pair planted next to access.	C 2			
T197	Birch; Betula, Betulaceae	M	10	3.5	3.5	3.5	3.5	310	3.7	/	/	Normal	10 - 20	One of a pair planted next to access.	C 2			
T198	Birch; Betula, Betulaceae	EM	8	2.5	2.5	2.5	2.5	200	2.4	/	/	Fair	10 - 20	Fair form.	C 3			
T199	Cypress; Cupressus, Cupressaceae	M	12	2	2	2	2	400	4.8	1	/	Normal	10 - 20	Single stem, fair form.	C 3			
T200	Spruce; Picea, Pinaceae	SM	10	2	2	2	2	240	2.9	1.5	/	Normal	20 - 40	Single stem tree planted next to parking, good future potential.	B 3			
T201	Sycamore; Acer, Aceraceae	SM	10	2.5	2.5	2.5	2.5	220	2.6	1.5	/	Normal	10 - 20	Growing in G17.	C 3			
G18	Spruce group	M	14	/	/	/	/	300 - 430	5.2	1.5	/	Normal	20 - 40	3x trees planted towards boundary.	B 2			
T202	Oak; Quercus, Fagaceae	M	13	6	8	5	6	510	6.1	1.5	/	Normal	40 +	Partially occluded wound on lower stem, old pruning wounds and crossers in crown.	A 3	Monitor tree's condition.		
T203	Weeping Willow; Salix, Salicaceae	M	16	6	4	5	6	850	10.2	2	/	Normal	20 - 40	Weeping form, old pruning wounds in crown (partially occluded).	A 3	Monitor tree's condition.		
T204	Rowan; Sorbus, Rosaceae	Y	Tree removed since previous survey											C 3	Fell tree to facilitate approved scheme.			
T205	Rowan; Sorbus, Rosaceae	Y	5	1.5	1.5	1.5	1.5	80	1.0	/	/	Normal	10 - 20	Young tree.		C 3		
T206	Rowan; Sorbus, Rosaceae	Y	5	1.5	1.5	1.5	1.5	90	1.1	/	/	Normal	10 - 20	Young tree.		C 3		
T207	Norway Maple; Acer, Aceraceae	EM	10	3.5	3.5	3.5	3.5	260	3.1	2	2.5	Normal	20 - 40	Planted in turf area, multi-stem crown at 2m.		B 2		
T208	Ash; Fraxinus, Oleaceae	SM	6	1.5	1.5	1.5	1.5	120	1.4	/	/	Normal	10 - 20	Planted in soft border, current small scale.	C 3			
T209	Pine; Pinus, Pinaceae	EM	10	3	3	3	3	260	3.1	1.5	2	Normal	40 +	Planted in turf area, single stem, good future potential.	B 1			
T210	Beech; Fagus, Fagaceae	Y / SM	10	2.5	2.5	2.5	2.5	200	2.4	0	/	Normal	40 +	Young, currently small scale tree, staked but no tie, significant growth potential.	B 1			
T211	Rowan; Sorbus, Rosaceae	EM	7.5	2	2	2	2	120	1.4	1.5	/	Normal	10 - 20	Planted in turf area.	C 3			
T212	Rowan; Sorbus, Rosaceae	EM	7.5	2	2	2	2	110	1.3	1.5	/	Normal	10 - 20	Planted in turf area.	C 3	Prune to provide at least 1.5m crown clearnace to building.		
T213	Birch; Betula, Betulaceae	M	17	5	2.5	2.5	5	410	4.9	/	/	Normal	20 - 40	Planted in soft border framing building access, crown close to building.	B 1			
T214	Birch; Betula, Betulaceae	M	16	5	2.5	2.5	5	240	2.9	/	/	Normal	20 - 40	Planted in soft border framing building access, crown close too building	B 1			

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CONTACT: /			SURVEY DATE: 18th May 2018, 21st January 2021 & 16th August 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
T215	Birch; Betula, Betulaceae	M	16	4	2	2.5	3	260	3.1	/	/	Normal	20 - 40	Planted in soft border framing building access, crown close to building.	B 1	Prune to provide at least 1.5m crown clearnace to building.	
T216	Cherry; Prunus, Rosaceae	M	10	4	4	4	4	336	4.0	1.5	/	Normal	20 - 40	Planted in soft border framing building access, crown close to building, co-dominant based with included bark.	C 2		
T217	Beech; Fagus, Fagaceae	Y	4	3	3	3	3	180	2.2	0	/	Normal	20 - 40	Young currently small scale tree, staked but no tie, significant growth potential.	C 3		
T218	Ash; Fraxinus, Oleaceae	SM	8	2.5	2.5	2.5	2.5	180	2.2	0	/	Normal	10 - 20	Fair form.	C 3		
T219	Ash; Fraxinus, Oleaceae	SM	6	2.5	2.5	2.5	2.5	140	1.7	1	/	Normal	10 - 20	Fair form.	C 3	Fell tree to facilitate approved scheme.	
T220	Norway Maple; Acer, Aceraceae	M	10	3	3	3	3	220	2.6	1.5	2	Normal	20 - 40	Planted in turf area, multi-stem at 2m with tight unions.	B 3	Monitor tight union.	
T221	Spruce; Picea, Pinaceae	SM	8	2	2	2	2	130	1.6	0	/	Normal	20 - 40	Young currently small scale tree, significant growth potential.	B 3		
T222	Spruce; Picea, Pinaceae	SM	8	2	2	2	2	140	1.7	0	/	Normal	20 - 40	Young currently small scale tree, significant growth potential.	B 3		
T223	Spruce; Picea, Pinaceae	SM	8	2	2	2	2	130	1.6	0	/	Normal	20 - 40	Young currently small scale tree, significant growth potential.	B 3		

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

FIELD KEY:

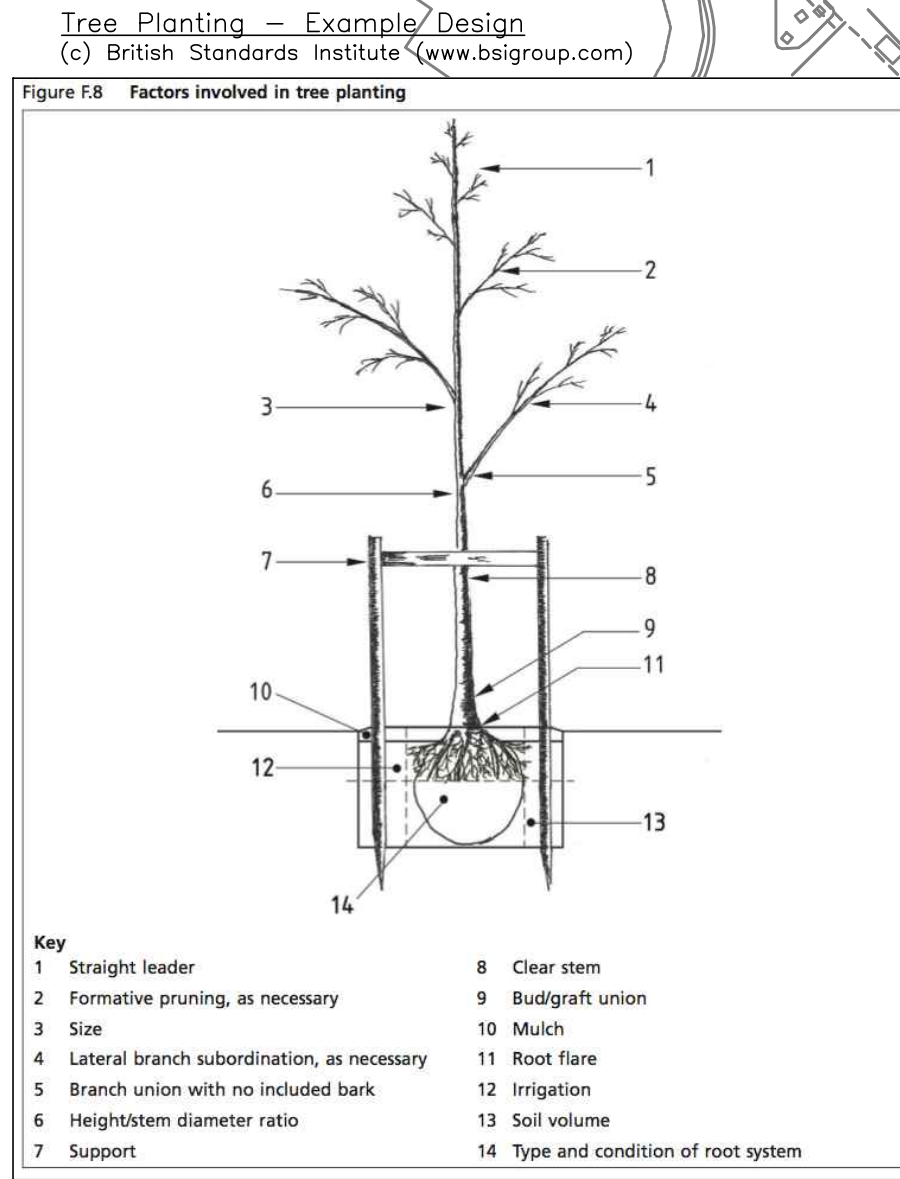
TPO/CA	-	On client request: presence of Tree Preservation Orders (TPO) / site location within a Conservation Area (CA) & date checked;
TREE REF. #	-	Tree reference number: tag or plan number (T - individual tree, G - group of trees/shrubs, H - hedge);
SPECIES	-	Genus, species and/or common name;
AGE	-	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;
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 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



Tree Removals - T1, T2, T6 - T28, T102, T103, T104, T109, T111, T118, T119, T120, T121, T122, T123, T130 - T135, T205, T206, T219 and shrub groups to be removed to facilitate the approved 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):
Site hoarding or Heras panels (as per the illustration on this plan) to be installed 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 landscape works.



DO NOT SCALE FROM DRAWING

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



B	Updated tree works	TB	AT	16/12/22
22	Approved scheme covering	TB	AT	25/06/23
REV.	DESCRIPTION	OWN	CHKD	DATE
CLIENT				
Wrexham Glydwr University				
PROJECT				
18164.22 Plas Coch Campus, Wrexham, LL11 2AW				
TITLE				
Tree Protection Plan				
OWN	DATE	CHKD	DATE	APPD
TB	16/12/22	AT	16/12/22	1:400
Drawing Number				
18164.22/TPP/01				
REV.				
B				
THIS DRAWING IS CONFIDENTIAL AND MUST NOT BE REPRODUCED WITHOUT THE CONSENT OF INDIGO SURVEYS LTD.				