ARBTECH

BS5837:2012
Trees in relation to design, demolition, and construction – Recommendations

Tree Survey

Coleg Gwent,

Crosskeys Campus,

Risca Road,

Crosskeys,

Caerphilly,

NP11 7ZA

20 April 2023

Author: Jack Barnard *BSc (Hons) MArborA* MICFor (Chartered Arboriculturist)

Introduction

Arbtech Consulting Limited (Arbtech) received written instruction on the 13th of April 2023 from Coleg Gwent to attend the site at Coleg Gwent, Crosskeys Campus, Risca Road, Crosskeys, Caerphilly, NP11 7ZA; grid reference ST 22354 91661 (site) to undertake an arboricultural survey to BS5837:2012 guidance to assess trees, hedges and major shrub groups growing on and within influencing distance of the site and to produce a Schedule of Trees and Tree Constraints Plan.

I am Jack Barnard *BSc (Hons), MArborA, MICFor (Chartered Arboriculturist)* and I undertook the tree survey on the 19th of April 2023 and subsequently have produced this summary of my findings. I have over seven years of professional experience in arboricultural consultancy and have worked on projects ranging from large master planning proposals to commercial and residential sites throughout the UK. I am a Professional Member of the Arboricultural Association (AA) and Institute of Chartered Foresters (ICF), and I am therefore required to uphold the professional and ethical standards within their code of conduct. The advice below and appended is underwritten by our Professional Indemnity insurance for the business practice of Arboricultural Consultancy in the sum of one million Pounds Sterling in each and every claim.

Table 1: Documents referred to.

Document	Reference No.
Survey base drawing	CK(SITE)
British Standard 5837:2012	“BS5837”
Tree Survey Schedule	Arbtech TS 01
Tree Constraints Plan	Arbtech TCP 01

Tree Survey

Survey: An arboricultural survey to BS5837 of all trees within impacting distance of the site was undertaken by Jack Barnard on the 19th of April 2023.

During the survey, I categorised the trees using “Table 1 – Cascade chart for tree quality assessment” of the BS5837:2012 (see Appendix 1).

A total of 37no. individual trees, 12no. groups of trees and 4no. hedgerows were surveyed. Details for each of the trees surveyed are provided in the Schedule of Trees (see Appendix 2). These include 10no. category B and 43no. category C retention value.

Limitations: The survey was made at ground level using visual observation only. Detailed examinations, such as climbing inspections and decay detection equipment were not employed, though may form part of the survey's management recommendations. Measurements were taken using specialist tapes, lasers, and GPS devices. Where this was not possible, measurements are estimated.

No topographical survey was provided and as such tree locations are based on aerial imagery and measurements taken onsite. Tree locations must not be taken as exact.

Scope: Pre-development tree surveys make arboricultural management recommendations based exclusively upon the individual tree or group of trees' condition relative to their present context (*i.e. not in relation to the proposed development*).

Legal Status: No statutory protection check has been performed. BS5837 does not draw any distinction between trees subject to statutory protection, such as a Tree Preservation Order ("TPO"), and those trees without. This is principally because detailed planning consent overrides any TPO protection. Consequently, we do not seek to offer any comparison between or infer any difference in the quality or importance of TPO trees and other trees.

* For more information on the surveyed trees please see Arbtech Consulting Ltd, Tree Survey Schedule (Appendix 1), Tree Survey Report and Tree Constraints Plan.

Site description

Coleg Gwent Crosskeys Campus is located to the south of the B4591. The site comprises a complex of school buildings with associated parking facilities, areas of open space and walkways.

Trees at the site comprise primarily semi- to early-mature wild cherry, London plane, Lawson cypress, silver birch, hornbeam and sycamore species. In general, the trees on-site are in good condition, however many have limited rooting areas due to the surrounding hard surfacing.

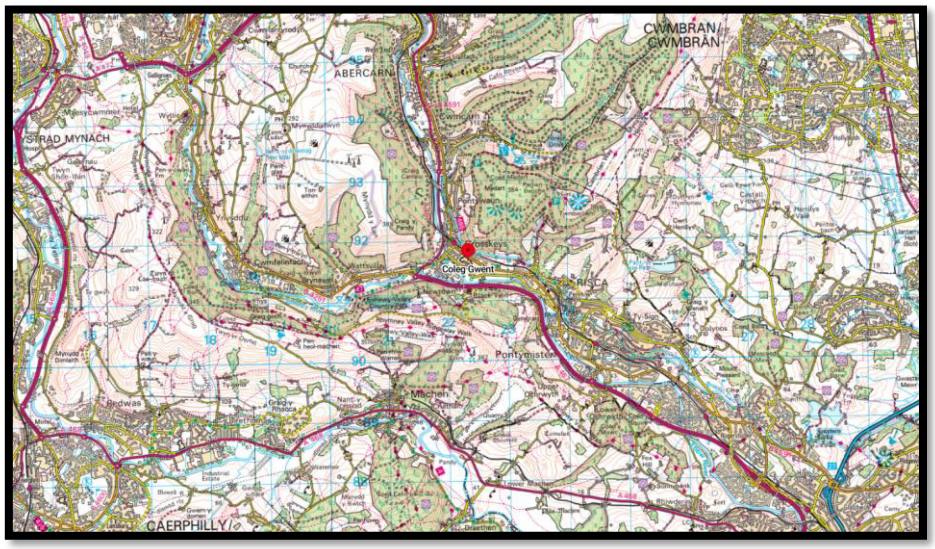

Figure 1: OS Map (Bing Maps)

Figure 2: Aerial Image of the site (Google Maps)

Arboricultural impacts can likely be addressed with the arboricultural methodology or minor amendments to the proposal.

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BS5837:2012 Scope

This standard recognises that there can be problems for development close to existing trees which are to be retained, and of planting trees close to existing structures. This standard sets out to assist those concerned with trees in relation to construction to form balanced

judgements. It does not set out to put arguments for or against development, or for the removal or retention of trees. Where development, including demolition, is to occur, the standard provides guidance on how to decide which trees are appropriate for retention, on the means of protecting these trees during development, including demolition and construction work, and on the means of incorporating trees into the developed landscape.

Methodology

The methodology used to assess the trees was the British Standard 5837:2012 'Trees in Relation to Construction' tree survey method. The aim of the survey is to establish which trees are moderate and good quality; suitable for retention and justifying protection. And, which trees are low or poor quality; either undesirable or unsuitable to retain and protect.

The tree survey includes all trees included in the land survey red line boundary plan, as well as any that may have been missed, and it should categorize trees or groups of trees, including woodlands for their quality and value within the existing context, in a transparent, understandable and systematic way. Where the arboriculturist has deemed it appropriate, the trees have been tagged with small metal or plastic tags, placed as high as is convenient on the stem of each tree.

Whilst master plan proposals for the development of the site might be available, the trees have been surveyed without taking these into consideration. All detailed design work on site layout should take into consideration the results of the tree survey (and the TCP).

Trees forming groups and areas of woodland (including orchards, wood pasture and historic parkland) are identified and considered as groups where the arboriculturist has determined that this is appropriate, particularly where they contain a variety of species and age classes that could aid long-term management. It is often expedient to assess the quality and value of such groups of trees as a whole, rather than as individuals. However, an assessment of individuals within any group has been undertaken if they are open-grown or if there is a need to differentiate between them.

The quality and value of each tree or group of trees have been recorded by allocating it to one of the four categories; A, B, C, or U (highest to lowest quality respectively). The categories are differentiated on the tree survey plan by colour, or by suffixing the category adjacent to the tree identification number on the TCP.

The survey schedule lists all the trees or groups of trees. The following information is also provided:

I. reference number (to be recorded on the tree survey plan);
II. species (common or scientific names);
III. height in meters (m);
IV. stem diameter in millimetres (mm) at 1.5 m above adjacent ground level or immediately above the root flare for multi-stemmed trees;
V. branch spread in meters taken at the four cardinal compass points;
VI. Height of crown clearance above adjacent ground level in meters (m);
VII. age class (Newly planted, Young, Semi-mature, Early mature, Mature, Over mature);
VIII. physiological condition (e.g. good, fair, poor, decline and dead);
IX. structural condition (e.g. good, fair, poor and ivy);

X. preliminary management recommendations, including further investigation of suspected defects that require more detailed assessment and potential for wildlife habitat; and

XI. The retention category refers to the quality and useful contribution in years; **U** = <10yrs; **A** = >40yrs; **B** = >20yrs; **C** = >10yrs. The retention subcategory refers to the type of amenity; 1 = Arboricultural; 2 = Landscape; 3 = Cultural including conservation (see Table 1 Cascade chart for tree quality assessment).

Definitions

Arboriculturist

An arboriculturist (or arboricultural consultant) is a person who has, through relevant education, training, and experience, gained recognized qualifications and expertise in the field of trees in relation to construction.

Tree Survey

A tree survey should be undertaken by an arboriculturist and should record information about the trees on a site independently of and prior to any specific design for development. As a subsequent task, and with reference to a design or potential design, the results of the survey should be included in the preparation of a tree constraints plan, which should be used to assist with site layout design.

Tree Constraints Plan

A TCP is a plan, typically delivered as an AutoCAD drawing (.file format), prepared by an arboriculturist for the purposes of layout design showing the root protection area and representing the effect that the mature height and spread of retained trees will have on layouts through shade, dominance, etc.

Root Protection Area

An RPA is a layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m².

Construction Exclusion Zone (also termed Tree Protection Zone)

A construction exclusion or tree protection zone is an area based on the RPA (in m²), identified by an arboriculturist, to be protected during development, including demolition and construction work, by the use of barriers and/or ground protection fit for purpose to ensure the successful long-term retention of a tree.

Arboricultural Impact Assessment

This is 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.

Tree Protection Plan

A TPP is a plan, typically delivered as an AutoCAD drawing (.dwg file format), prepared by an arboriculturist showing the finalized layout proposals, tree retention and tree and

landscape protection measures detailed within the arboricultural method statement, which can be shown graphically.

Arboricultural Method Statement

This is a methodology for the implementation of any aspect of development that has the potential to result in the loss of or damage to a tree. The AMS is likely to include details of an on-site tree protection monitoring regime.

Limitations

Trees were inspected by using visual observation from ground level only. Trees were not climbed or inspected below ground level. Inaccessible trees will have the best estimates made about their location, physical dimensions, and characteristics. Trees have been grouped where BS5837 guides us that it is expedient to do so. Trees have been excluded from the survey if they are found by us to be sufficiently far away from the proposed developable area or if they are outside of the red line boundary plan showing the expectations of our Client for the extent of the survey. BS5837 does not draw any distinction between trees subject to statutory protection, such as a Tree Preservation Order ("TPO"), and those trees without. This is principally because detailed planning consent overrides any TPO protection. Consequently, we do not seek to offer any comparison between or infer any difference in the quality or importance of TPO trees and other trees.

Appendices

The following documents were released to the Client as appendices to this report:

- Survey Schedule (.pdf)
- Tree Constraints Plan drawing (.dwg & .pdf)

If you require clarification of the information contained herein, please do not hesitate to contact us via 01244 661170.

Yours Sincerely,

Signature

Jack Barnard *BSc (Hons) MArborA MICFor (Chartered Arboriculturist)*

Appendix 1: Table 1 Cascade chart for tree quality assessment

BS5837:2012 Trees in relation to design, demolition and construction – Recommendations

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories when appropriate			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low-quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which might be desirable to preserve; see 4.5.7.*			Dark red
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture)	Light green
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remedial defects, including unsympathetic management and storm damage), such that they are unlikely to be suitable for retention beyond 40 years, or trees lacking a special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals or trees occurring as collectives but situated to make a little visual contribution to the wider locality	Trees with material conservation or other cultural value	Mid blue
Category C **Trees of low quality** with an estimated remaining expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify for higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape value	Trees with no material conservation or other cultural value	Grey

Appendix 2: Schedule of Trees

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Tree Survey Schedule
Coleg Gwent, Crosskeys Campus, Risca Road, Crosskeys, Caerphilly, NP11 7ZA

Client	Coleg Gwent
Survey Date	20th April 2023
Weather Conditions	Sun
Surveyor	Jack Barnard

Key:

Tree Number	A unique number or reference to identify trees or groups as shown on associated plans.
Species	Common and or taxonomic names.
Height	The height of the tree is in meters (m).
Trunk Diameter	The stem diameter is in millimetres (mm) taken at 1.5m above ground level unless otherwise specified.
Canopy Spread	The extent of the canopy taken in meters (m) to the principal points of the compass, North (N), East (E), South (S) and West (W).
Crown Clearance	The height of canopy clearance above ground level to the lowest point of the canopy is taken in meters (m).
Age Class	Age classification; Young (Y), Middle Aged (MA), Mature (M), Late Mature (LM), Veteran (V).
Physiological Condition	The general physiological condition of the tree; Average, Below average, Low, and Dead.
Structural Condition	The general structural condition of the tree; Good, Moderate, Indifferent, Poor, and Hazardous.
Comments	Notes and general comments on the structural condition of the tree, its environment and its estimated remaining contribution.
Category	The retention category refers to the quality and useful contribution in years; U = <10yrs; A = >40yrs; B = >20yrs; C = >10yrs. The retention subcategory refers to the type of amenity; 1 = Arboricultural; 2 = Landscape; 3 = Cultural including conservation.

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BS5837:2012 TREE SCHEDULE

SITE
Coleg Gwent, Crosskeys Campus, Risca Road, Crosskeys, Caerphilly, NP11 7ZA

CLIENT
Coleg Gwent, Crosskeys Campus

DATE
20th April 2023

REFERENCE
Arbtech TS 01

Tree No.	Common Name	Botanical Name	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Estimated remaining life	Additional notes	Preliminary recommendations	BS5837 Retention Category	RPA (m^2)	RPA Radius (m)
					N	E	S	W										
T1	Silver birch	*Betula pendula*	7	160	3	3	2	3	1	Semi-mature	Good	Good	Medium (20 to 40 years)	Semi mature specimen located towards the reception on the northern boundary of the site. Single stem. Hardstanding north likely limiting root growth. Canopy minor suppression south.	No work required at the time of assessment.	C1, 2	10	1.80
T2	Wild cherry	*Prunus avium*	9	380	6	6	5	6	0.5	Early-mature	Good	Good	Medium (20 to 40 years)	Early mature specimen located towards the reception on the northern boundary of the site. Single stem. Structural canopy forms at c.2.5m. Scaffold biased north. Canopy suppressed south by adjacent building.	No work required at the time of assessment.	C1, 2	64	4.50
T3	Wild cherry	*Prunus avium*	7	185	6	4	4	6	3	Semi-mature	Good	Good	Short (10 to 20 years)	Semi mature specimen located towards the reception on the northern boundary of the site. Single stem. Structural canopy forms at c.2.5m. Canopy and scaffold biased west.	No work required at the time of assessment.	C1, 2	14	2.10
T4	River birch	*Betula nigra*	7	129.9	4	4	4	4	3	Semi-mature	Good	Good	Medium (20 to 40 years)	Semi mature specimen located towards the reception on the northern boundary of the site. Forms 3no stems from ground level. Adds height to the boundary hedgerow. Visible east/west along the B4591.	No work required at the time of assessment.	C1, 2	7	1.50
T5	Wild cherry	*Prunus avium*	8	555	6	9	6	6	2	Mature	Poor	Poor	Short (10 to 20 years)	Mature specimen located in the northeast corner of the site. Single stem. Structural canopy forms at c.2.5m. Cracking and cavities associated with the stem consistent in appearance with Bleeding Canker of Cherry. Epicormic growth associated with the base. Significant decline associated with the canopy. Major storm damage associated with the canopy north. Over extended limb east over the adjacent plot. Likely to be of limited long term retention value however could be crown reduced to enable its retention in the short term.	Reduce canopy to a radial 5m. Remove deadwood and broken limbs throughout. Remove epicormic growth at base. Consider replacement planting within the adjacent open space.	C1, 2	137	6.60
T6	Common ash	*Fraxinus excelsior*	8	280	5	5	5	5	3.5	Semi-mature	Fair	Fair	Short (10 to 20 years)	Semi mature specimen located in the northeast corner of the site. Single stem. Stem and scaffold biased east. Good radial canopy. Adds height to the boundary screen.	No work required at the time of assessment.	C1, 2	34	3.30

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DATE
20th April 2023

REFERENCE
Arbtech TS 01

Tree No.	Common Name	Botanical Name	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Estimated remaining life	Additional notes	Preliminary recommendations	BS5837 Retention Category	RPA (m^2)	RPA Radius (m)
					N	E	S	W										
T7	Common ash	*Fraxinus excelsior*	6	125	3	3	3	3	3	Semi-mature	Fair	Fair	Short (10 to 20 years)	Semi mature specimen located in the northeast corner of the site. Single stem. Dense vegetation at base limiting a detailed assessment. Of limited arboricultural merit but does adds height to the boundary screen.	No work required at the time of assessment.	C1, 2	7	1.50
T8	Silver birch	*Betula pendula*	9	275	4	4	4	4	5	Semi-mature	Fair	Poor	Short (10 to 20 years)	Semi mature specimen located within residential rear garden on the northern boundary of the site. Measurements estimated due to limited access. Single stem. Historic stem failure at c.3m, now with significant regrowth west. Good radial canopy.	No work required at the time of assessment.	C1, 2	34	3.30
T9	Common laburnum	*Laburnum anagyroides*	6	310	4	4	4	4	3	Semi-mature	Fair	Poor	Short (10 to 20 years)	Semi mature specimen located within residential rear garden on the northern boundary of the site. Measurements estimated due to limited access. Initially single stemmed, bifurcates at c.1m. Lower canopy previously raised with stub cuts associated. Good radial canopy. Of limited arboricultural merit but does add to the boundary screen.	No work required at the time of assessment.	C1, 2	41	3.60
T10	Lawson cypress	*Chamaecyparis lawsoniana*	14	750	6	6	6	6	1	Mature	Good	Good	Long (>40 years)	Mature specimen located towards the northeast corner of the site. Located on raised bund. Single stem. Structural canopy forms at c.1m. Good radial canopy. Likely to be of good future potential.	No work required at the time of assessment.	B1, 2	254	9.00
T11	Whitebeam	*Sorbus aria*	6	370	4	4	4	4	4	Early-mature	Good	Fair	Short (10 to 20 years)	Semi mature specimen located centrally within the site. Epicormic growth associated with the base. Dense ivy associated with the stem and scaffold partially obscuring assessment. Growing within walkway shelter which frames the tree on all sides with a c.2m offsite. Canopy pruned to extend over the walkway shelter.	Sever ivy at base and allow to die back.	C1, 2	64	4.50
T12	Whitebeam	*Sorbus aria*	6	335	5	5	5	5	2	Early-mature	Good	Fair	Short (10 to 20 years)	Semi mature specimen located centrally within the site. Epicormic growth associated with the base. Dense ivy associated with the scaffold partially obscuring assessment. Growing adjacent to walkway shelter, canopy pruned to extend over the walkway shelter.	Sever ivy at base and allow to die back.	C1, 2	48	3.90

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DATE
20th April 2023

REFERENCE
Arbtech TS 01

Tree No.	Common Name	Botanical Name	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Estimated remaining life	Additional notes	Preliminary recommendations	BS5837 Retention Category	RPA (m^2)	RPA Radius (m)
					N	E	S	W										
T13	Norway maple	*Acer platanoides*	13	515	7	7	7	7	4	Early-mature	Good	Good	Long (>40 years)	Early mature specimen located centrally within the site. Single stem. Exposed surface roots south. Structural canopy forms at c.3m. Good radial canopy. Good future potential.	Sever ivy at base and allow to die back.	B1, 2	125	6.30
T14	Sycamore	*Acer pseudoplatanus*	14	613.51	6	6	6	6	4.5	Mature	Fair	Fair	Medium (20 to 40 years)	Mature specimen located centrally within the site. Located on raised bund with exposed surface roots east. Initially single stemmed, trifurcates at c.1.5m with tight unions. Lower canopy significantly raised, now with moderate occlusion. Good radial canopy. Prominent specimen within courtyard setting.	No work required at the time of assessment.	B1, 2	177	7.50
T15	Wild cherry	*Prunus avium*	7	320	6	6	3	4	2	Semi-mature	Fair	Fair	Medium (20 to 40 years)	Semi mature specimen located centrally within the site. Located on raised bund. Single stem. Canopy biased to the northeast.	No work required at the time of assessment.	C1, 2	48	3.90
T16	Sycamore	*Acer pseudoplatanus*	10	340	4	4	4	4	4	Semi-mature	Fair	Fair	Medium (20 to 40 years)	Semi mature specimen located centrally within the site. Located on raised bund. Single stem. Tall drawn up form. Good radial canopy.	No work required at the time of assessment.	C1, 2	55	4.20
T17	London plane	*Platanus x hispanica*	7	210	5	5	5	5	2.5	Semi-mature	Good	Good	Long (>40 years)	Semi mature specimen located on the northern boundary of the site. Single stem. Good radial canopy. Good future potential. Growing as part of a linear arboricultural feature.	No work required at the time of assessment.	C1, 2	18	2.40
T18	London plane	*Platanus x hispanica*	7	110	4	4	4	4	2.5	Semi-mature	Good	Good	Long (>40 years)	Semi mature specimen located on the northern boundary of the site. Single stem. Good radial canopy. Good future potential. Growing as part of a linear arboricultural feature.	No work required at the time of assessment.	C1, 2	7	1.50
T19	London plane	*Platanus x hispanica*	7	110	4	4	4	4	2.5	Semi-mature	Good	Good	Long (>40 years)	Semi mature specimen located on the northern boundary of the site. Single stem. Good radial canopy. Good future potential. Growing as part of a linear arboricultural feature.	No work required at the time of assessment.	C1, 2	7	1.50
T20	London plane	*Platanus x hispanica*	7	110	4	4	4	4	2.5	Semi-mature	Good	Good	Long (>40 years)	Semi mature specimen located on the northern boundary of the site. Single stem. Good radial canopy. Good future potential. Growing as part of a linear arboricultural feature.	No work required at the time of assessment.	C1, 2	7	1.50

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Tree No.	Common Name	Botanical Name	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Estimated remaining life	Additional notes	Preliminary recommendations	BS5837 Retention Category	RPA (m^2)	RPA Radius (m)
					N	E	S	W										
T21	London plane	*Platanus x hispanica*	7	110	4	4	4	4	2.5	Semi-mature	Good	Good	Long (>40 years)	Semi mature specimen located on the northern boundary of the site. Single stem. Good radial canopy. Good future potential. Growing as part of a linear arboricultural feature.	No work required at the time of assessment.	C1, 2	7	1.50
T22	London plane	*Platanus x hispanica*	7	80	4	4	4	4	2.5	Semi-mature	Good	Good	Long (>40 years)	Semi mature specimen located on the northern boundary of the site. Single stem. Good radial canopy. Good future potential. Growing as part of a linear arboricultural feature.	No work required at the time of assessment.	C1, 2	7	1.50
T23	Silver birch	*Betula pendula*	5	65.57	2	2	2	2	0.5	Semi-mature	Good	Fair	Medium (20 to 40 years)	Semi mature specimen located on the northern boundary of the site. Located in narrow planting bed. Multi stemmed. Good radial canopy. Good future potential. Growing as part of a linear arboricultural feature.	No work required at the time of assessment.	C1, 2	7	1.50
T24	Silver birch	*Betula pendula*	5	65.57	2	2	2	2	0.5	Semi-mature	Good	Fair	Medium (20 to 40 years)	Semi mature specimen located on the northern boundary of the site. Located in narrow planting bed. Multi stemmed. Good radial canopy. Good future potential. Growing as part of a linear arboricultural feature.	No work required at the time of assessment.	C1, 2	7	1.50
T25	Silver birch	*Betula pendula*	5	65.57	2	2	2	2	0.5	Semi-mature	Good	Fair	Medium (20 to 40 years)	Semi mature specimen located on the northern boundary of the site. Located in narrow planting bed. Multi stemmed. Good radial canopy. Good future potential. Growing as part of a linear arboricultural feature.	No work required at the time of assessment.	C1, 2	7	1.50
T26	Silver birch	*Betula pendula*	5	65.57	2	2	2	2	0.5	Semi-mature	Good	Fair	Medium (20 to 40 years)	Semi mature specimen located on the northern boundary of the site. Located in narrow planting bed. Multi stemmed. Good radial canopy. Good future potential. Growing as part of a linear arboricultural feature.	No work required at the time of assessment.	C1, 2	7	1.50
T27	Silver birch	*Betula pendula*	5	65.57	2	2	2	2	0.5	Semi-mature	Good	Fair	Medium (20 to 40 years)	Semi mature specimen located on the northern boundary of the site. Located in narrow planting bed. Multi stemmed. Good radial canopy. Good future potential. Growing as part of a linear arboricultural feature.	No work required at the time of assessment.	C1, 2	7	1.50

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Tree No.	Common Name	Botanical Name	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Estimated remaining life	Additional notes	Preliminary recommendations	BS5837 Retention Category	RPA (m^2)	RPA Radius (m)
					N	E	S	W										
T28	Goat willow	*Salix caprea*	5	141.42	4	4	4	4	2	Semi-mature	Fair	Fair	Short (10 to 20 years)	Likely self set specimen located offsite to the east. Assessment limited by close board fencing. Appears to be multi stemmed. Good radial canopy. Adds height to the boundary screen.	No work required at the time of assessment.	C1, 2	10	1.80
T29	Norway maple	*Acer platanoides*	6	265	4	4	4	4	2	Semi-mature	Good	Good	Medium (20 to 40 years)	Semi mature specimen located towards the southern boundary of the site. Single stem. Located in narrow planting bed. Good radial canopy. Moderate future potential.	No work required at the time of assessment.	C1, 2	34	3.30
T30	Norway maple	*Acer platanoides*	5	90	3	3	3	3	2.5	Semi-mature	Fair	Fair	Short (10 to 20 years)	Semi mature specimen located towards the southern boundary of the site. Single stem. Located in narrow planting bed. Good radial canopy.	No work required at the time of assessment.	C1, 2	7	1.50
T31	Rowan	*Sorbus aucuparia*	7	180	4	4	4	4	2	Semi-mature	Good	Good	Medium (20 to 40 years)	Semi mature specimen located towards the southern boundary of the site. Single stem. Located in narrow planting bed. Good radial canopy. Moderate future potential.	No work required at the time of assessment.	C1, 2	14	2.10
T32	Hornbeam	*Carpinus betulus*	7	190	2	2	2	2	1.5	Semi-mature	Good	Good	Short (10 to 20 years)	Semi mature specimen located towards the southern boundary of the site. Single stem. Fastigiate form. Good radial canopy.	No work required at the time of assessment.	C1, 2	18	2.40
T33	Common ash	*Fraxinus excelsior*	8	636.4	3	3	4	4	3	Mature	Fair	Fair	Short (10 to 20 years)	Mature specimen located on the southern boundary of the site. Forms 2no stems from ground level. Heavily pollarded with limited regrowth. Adds to the boundary screen.	No work required at the time of assessment.	C1, 2	177	7.50
T34	Pedunculate oak	*Quercus robur*	15	650	4	3	5	7	3	Mature	Good	Fair	Long (>40 years)	Mature specimen located on the southern boundary of the site. Single stem. Stem biased west. Canopy pollarded in the past, minor regrowth now associated. Canopy biased west.	No work required at the time of assessment.	B1, 2	191	7.80
T35	Goat willow	*Salix caprea*	12	447.21	7	7	7	7	2	Early-mature	Good	Fair	Medium (20 to 40 years)	Early mature self set specimen located on the western boundary of the site. Forms c.5no stems from ground level. Ivy associated with the stem and scaffold partially obscuring assessment. Good radial canopy. Significant component of the wider boundary group.	No work required at the time of assessment.	C1, 2	92	5.40

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BS5837:2012 TREE SCHEDULE

SITE
Coleg Gwent, Crosskeys Campus, Risca Road, Crosskeys, Caerphilly, NP11 7ZA

CLIENT
Coleg Gwent, Crosskeys Campus

DATE
20th April 2023

REFERENCE
Arbtech TS 01

Tree No.	Common Name	Botanical Name	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Estimated remaining life	Additional notes	Preliminary recommendations	BS5837 Retention Category	RPA (m^2)	RPA Radius (m)
					N	E	S	W										
T36	Common ash	*Fraxinus excelsior*	16	550	8	8	8	8	3	Mature	Good	Fair	Short (10 to 20 years)	Mature specimen located on the western boundary of the site. Single stem. Assessment limited by close board fencing. Structural canopy forms at c.2.5m & c.3.5m. Epicormic growth associated with the scaffold. Good radial canopy. Prominent specimen on the boundary.	No work required at the time of assessment.	**B1, 2**	137	6.60
T37	Cherry plum	*Prunus cerasifera*	3	155	3	3	3	3	2	Semi-mature	Good	Fair	Short (10 to 20 years)	Semi mature specimen located in the northwest corner of the site. Single stem. Dense ivy throughout. Good radial canopy. Adds height to the wider boundary screen.	Sever ivy at base and allow to die back.	**C1, 2**	10	1.80
G1	Lawson cypress, Himalayan cotoneaster, Common ash, Chinese privet	*Chamaecyparis lawsoniana, Cotoneaster simonsii, Fraxinus excelsior, Ligustrum sinense*	3 - 8	75 - 190	3	3	3	3	0	Semi-mature	Fair	Fair	Short (10 to 20 years)	Semi mature group located on the northern boundary of the site. Multi stemmed in part located at the top of retaining wall. Forms a dense common cohesive canopy. Of limited arboricultural merit but does form a boundary screen.	No work required at the time of assessment.	**C1, 2**	18	2.40
G2	Lawson cypress	*Chamaecyparis lawsoniana*	12 - 16	210 - 325	4	4	4	4	1.5	Early-mature	Fair	Fair	Medium (20 to 40 years)	Early mature group located on the northern boundary of the site. Single stems located at the top of retaining wall. Forms a dense common cohesive canopy. Of limited arboricultural merit but does add height to the boundary screen.	No work required at the time of assessment.	**C1, 2**	48	3.90
G3	Silver birch, Lawson cypress, Himalayan cotoneaster, Chinese privet, Wild cherry, Japanese flowering cherry, Cherry laurel	*Betula pendula, Chamaecyparis lawsoniana, Cotoneaster simonsii, Ligustrum sinense, Prunus avium, Prunus Ichiyo, Prunus laurocerasus*	3 - 9	75 - 470	5	5	5	5	0	Early-mature	Good	Fair	Medium (20 to 40 years)	Early mature group located towards the northern boundary of the site. Ornamental plantings form a significant boundary screen from the adjacent carpark. Moderate future potential.	No work required at the time of assessment.	**B2**	102	5.70
G4	Common beech	*Fagus sylvatica*	4 - 6	50 - 90	2	2	2	2	0.5	Young	Fair	Fair	Short (10 to 20 years)	Group of grown out hedgerow plantings framing residential property on the northern boundary of the site.	No work required at the time of assessment.	**C2**	7	1.50

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BS5837:2012 TREE SCHEDULE

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DATE
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REFERENCE
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Tree No.	Common Name	Botanical Name	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Estimated remaining life	Additional notes	Preliminary recommendations	BS5837 Retention Category	RPA (m^2)	RPA Radius (m)
					N	E	S	W										
G5	Sycamore, Goat willow	*Acer pseudoplatanus, Salix caprea*	8 - 14	280 - 340	5	5	5	5	1.5	Early-mature	Fair	Fair	Medium (20 to 40 years)	Early mature group located on the eastern boundary of the site. Located offsite and measurements estimated. Single stems. Forms a common cohesive canopy. Adds height to the boundary screen.	No work required at the time of assessment.	C1, 2	55	4.20
G6	Sycamore, Common hawthorn, Common ash, Juniper, Wild cherry	*Acer pseudoplatanus, Crataegus monogyna, Fraxinus excelsior, Juiperus communis, Prunus avium*	6 - 14	75 - 420	5	5	5	5	0	Early-mature	Good	Fair	Medium (20 to 40 years)	Early mature group located on the eastern boundary of the site. Located offsite and measurements estimated. Single stems. Forms a common cohesive canopy. Adds height to the boundary screen.	No work required at the time of assessment.	B1, 2	82	5.10
G7	Sycamore, Common ash, Cherry laurel	*Acer pseudoplatanus, Fraxinus excelsior, Prunus laurocerasus*	3 - 14	75 - 415	7	7	7	7	0	Early-mature	Good	Fair	Medium (20 to 40 years)	Early mature group located on the southern boundary of the site. Single stems. Forms a common cohesive canopy. Cherry laurel understorey. Ash specimens demonstrate minor decline. Forms a significant boundary screen.	Considering in fill planting to replace the ash specimens in the medium term.	B1, 2	82	5.10
G8	Field maple	*Acer campestre*	11 - 14	225 - 390	6	6	6	6	2	Early-mature	Good	Fair	Medium (20 to 40 years)	Early mature group located on the southern boundary of the site. Single stems. Forms a common cohesive canopy. Forms a significant boundary screen.	No work required at the time of assessment.	B1, 2	72	4.80
G9	Sycamore, Hornbeam, Cherry laurel, Western red cedar	*Acer pseudoplatanus, Carpinus betulus, Prunus laurocerasus, Thuja plicata*	5 - 12	90 - 355	5	5	5	5	0	Semi-mature	Good	Fair	Short (10 to 20 years)	Semi mature group located towards the southern boundary of the site. Single stems. Forms a common cohesive canopy. Dense untidy form. Forms a significant boundary screen.	No work required at the time of assessment.	C1, 2	55	4.20
G10	Sycamore, Cherry laurel	*Acer pseudoplatanus, Prunus laurocerasus*	5 - 7	75 - 180	4	4	4	4	0	Semi-mature	Good	Fair	Short (10 to 20 years)	Semi mature group located towards the southern boundary of the site. Single stems. Forms a common cohesive canopy. Dense untidy form. Forms a significant boundary screen.	No work required at the time of assessment.	C1, 2	14	2.10

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BS5837:2012 TREE SCHEDULE

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Tree No.	Common Name	Botanical Name	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Estimated remaining life	Additional notes	Preliminary recommendations	BS5837 Retention Category	RPA (m^2)	RPA Radius (m)
					N	E	S	W										
G11	Magnolia	*Magnolia grandiflora*	8 - 9	160 - 335	6	6	6	6	3	Early-mature	Good	Good	Long (>40 years)	Early mature group located offsite to the south with residential rear gardens. Assessment limited by site boundary wall. Multi stemmed. Good radial canopy. Of good future potential. Adds height to the boundary screen.	No work required at the time of assessment.	B1, 2	48	3.90
G12	Sycamore, Lawson cypress, Common ash, Common holly, Wild privet, Elder	*Acer pseudoplatanus, Chamaecyparis lawsoniana, Fraxinus excelsior, Ilex aquifolium, Ligustrum vulgare, Sambucus nigra*	6 - 9	150 - 325	4	4	4	4	0	Early-mature	Fair	Fair	Medium (20 to 40 years)	Early mature group located offsite to the west. Multi stemmed. Forms a dense common cohesive canopy. Forms a significant boundary screen.	No work required at the time of assessment.	C1, 2	48	3.90
H1	Chinese privet	*Ligustrum sinense*	2 - 2.5	30 - 70	3	3	3	3	0	Semi-mature	Good	Good	Short (10 to 20 years)	Semi mature hedgerow located on the northern boundary of the site. Forms a dense low level boundary screen.	No work required at the time of assessment.	C2	7	1.50
H2	Chinese privet	*Ligustrum sinense*	2 - 2.5	30 - 70	3	3	3	3	0	Semi-mature	Good	Good	Short (10 to 20 years)	Semi mature ornamental hedgerow located on the northern boundary of the site. Located in raised planting bed. Forms a dense low level boundary screen.	No work required at the time of assessment.	C2	7	1.50
H3	Lawson cypress, Chinese privet	*Chamaecyparis lawsoniana, Ligustrum sinense*	2 - 2.5	30 - 70	3	3	3	3	0	Semi-mature	Good	Good	Short (10 to 20 years)	Semi mature hedgerow located on the southern boundary of the site. Forms a dense low level boundary screen.	No work required at the time of assessment.	C2	7	1.50
H4	Common holly, Chinese privet, Cherry laurel	*Ilex aquifolium, Ligustrum sinense, Prunus laurocerasus*	2.5 - 3.5	30 - 70	4	4	4	4	0	Semi-mature	Good	Good	Short (10 to 20 years)	Semi mature hedgerow located on the southern boundary of the site. Forms a dense low level boundary screen.	No work required at the time of assessment.	C2	7	1.50

Appendix 3: Tree Constraints Plan

Tree Categories

Trees are categorised in accordance with the cascade chart in Table 1 of the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

Category 'U' - Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.
Category 'A' - Trees of high quality with an estimated remaining life expectancy of at least 40 years.
Category 'B' - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
Category 'C' - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Areas (RPAs) should be plotted around each of the category A, B and trees. This is a minimum area in m² which should be left undisturbed around each retained tree.

The RPA is calculated using the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations.

The calculated RPA is capped to 707m², which is the equivalent to a circle with a radius of 15m. Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Tree Survey Report

Please refer to Arbtech Consulting Ltd. Tree Survey Report and Tree Schedule for full details on all surveyed trees, hedgerows and major shrub groups.
All trees were surveyed and categorised in accordance with the guidance as set out in the British Standard BS5837:2012 Tree in relation to design, demolition and construction - Recommendations.

We make the following recommendation to ensure that no conditions relating to arboriculture are attached to any planning consent secured: obtain and arboricultural report to include:

a) An arboricultural impact assessment (AIA);
b) An arboricultural method statement (AMS); and
c) A tree protection plan (TPP).

ARBTECH
Unit 3, Well House Barns, Chester, CH4 0DH
https://arbtech.co.uk, 01244 661170

Project:
Coleg Gwent,
Crosskeys Campus,
Risca Road,
Crosskeys, Caerphilly,
NP11 7ZA

Client:
Coleg Gwent, Crosskeys Campus

Drawing:
Tree Constraints Plan

Based on:
Topograpgical Survey - CK(SITE)

Drawing No:	Rev:
Arbtech TCP 01	

Date:	Scale:	Drawn:
April 2023	1:1250 @ A1	JB

Key:

Tree Nos.:	T1	Tree Canopies:		Trunks:	
RPAs:		Category 'B' trees:		Category 'B' groups:	
Category 'C' trees:		Category 'C' groups:			

All dimensions should be checked on site. No dimensions are to be scaled from this drawing.
Please notify us of any discrepancies found. Arbtech Consulting Ltd. cannot be held responsible for inaccuracies in the base drawing in which this plan is based.
This drawing is designed to reflect the principles of the layout or design only, and relates only to the protection of retained trees.
This drawing is not to be read as a definitive part of the engineering or construction designs or method statement. An architect or structural engineer should be contacted over any matters of construction, detailing or specification and for any standards or regulatory requirements relating to proposed structures, hard surfacing or underground services.
This drawing was produced in colour - a monochrome copy should not be relied upon.

Document Production Record

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