



BS5837:2012

**Trees in relation to design, demolition and construction –
Recommendations**

Tree Survey

Graham Evans

Coleg Cambria,
Grove Park Road,
Wrexham,
LL12 7AB

28 September 2021

Author: Emily Kempson

Introduction

Arbtech Consulting Limited (Arbtech) received written instruction on 24.09.21 from Andrew Clarke to attend Coleg Cambria, Grove Park Road, Wrexham, LL12 7AB; grid reference, SJ 33578 50700 (site) to undertake an arboricultural survey a 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, tree constraints plan, arboricultural impact assessment, arboricultural method statement and tree protection plan.

I am Emily Kempson, an arboricultural consultant at Arbtech Consulting Ltd. I hold a BSc honors in Geography and am currently undertaking a Level 4 diploma in arboriculture and have professional experience in arboriculture. I have also attended the Arboricultural Association Intermediate Tree Inspection Course in 2019.

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	PMS21067
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 Emily Kempson on 27th September 2021.

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 37 No. individual trees and 2 No. groups of trees were surveyed. Details for each of the trees surveyed are provided in the Schedule of Trees (see Appendix 2).

Table 2: Documents upon which this tree survey has been based.

Document	Originator	Reference Number	Title
Topo	PM Surveys UK	PMS21067	Topo

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, laser and GPS devices. Where this was not possible, measurements are estimated.

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 a 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

The site is situated within the grounds of Coleg Cambria, on Grove Park Road to the north of Wrexham town centre. The site is bounded to the north by the A5152, to the east by Chester Road, and by the rest of the campus to the west and south. The site is comprised of two buildings located centrally with car parking to the west and trees located around the perimeter.

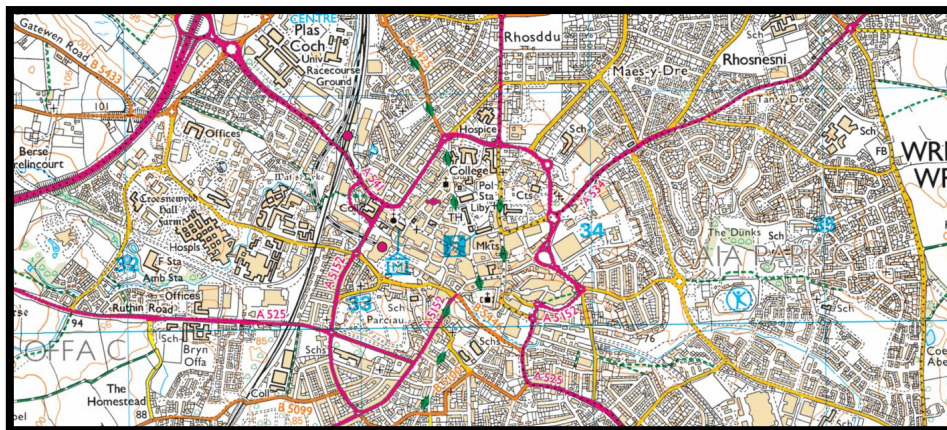


Figure 1: OS Map (Bing Maps)

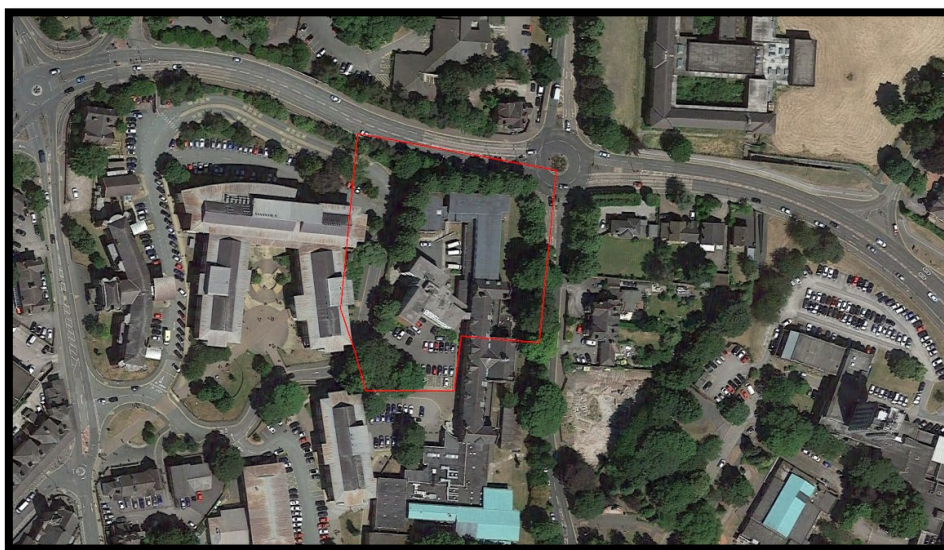


Figure 2: Aerial Image of site (Google Earth)

The proposals are to demolish the two and three storey buildings, and construct a new three storey building within the same footprint of the existing two storey building. A new car park will replace the existing three storey building.

It is likely that arboricultural impacts can be addressed with arboricultural methodology or minor amendments to the proposal.

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 has 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 millimeters (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 referring to the quality and useful contribution in years; **U** = <10yrs; **A** = >40yrs; **B** = >20yrs; **C** = >10yrs. The retention sub category referring 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 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 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 loss of or damage to a tree. The AMS is likely to include details of an on-site tree protection monitoring regime.

Recommendations

We make the following recommendation to ensure that there are no irrevocable issues to the proposed retained trees and so that no conditions relating to arboriculture are attached to any planning consent secured; obtain an arboricultural report to include:

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

Limitations

Trees were inspected from using visual observation from ground level only. Trees were not climbed or inspected below ground level. Inaccessible trees will have best estimates made about the 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 a 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.

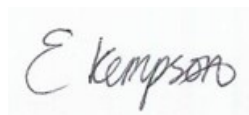
Appendices

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 information contained herein, please do not hesitate to contact us via 01244 661170.

Yours Sincerely,



Emily Kempson BSc (Hons)
Arboricultural Consultant

07874 872745
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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 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 <i>NOTE Category U trees can have existing or potential conservation value which might be desirable to preserve; see 4.5.7.</i>			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 dominate 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 of beyond 40 years; or trees lacking the 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 so as to make 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 in 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

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Appendix 2: Schedule of Trees

BS5837:2012 Tree Survey

Arbtech Consulting Ltd

Client: Graham Evans
 Project: Coleg Cambria, Grove Park Road, Wrexham
 Survey Date: 27/09/2021
 Surveyor: Emily Kempson



Unit 3, Well House Barns
 Chester Road
 Chester
 Cheshire
 CH4 0DH
 Phone: 01244661170

Tree and Tag No Species		Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations			Cat ERC
			No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
G1												Estimated Measurements		
Various		3	3	87 (Eq)	N	2	0	Y	A: 3.4	Good	C: Good	C.2		
See comments for details					E	2	0		R: 1.04		S: Good	Shrub group of Japanese laurel with self set lime. 10+ yrs		
					S	2	0				B: Good			
					W	2	0							
G2												Estimated Measurements		
Various		10	1	200	N	3	1	SM	A: 18.1	Good	C: Good	B.1		
See comments for details					E	3	1		R: 2.4		S: Good	20+ yrs		
					S	3	1				B: Not visible	Offsite group of trees and understorey shrubs providing screening. Species include sycamore, ash, pine and alder, with an under storey largely comprising of laurel and dogrose. Crown comes to road edge hanging over by about 1m with clearance		
					W	3	1							
T1														
Sycamore		16	1	990	N	7	4	M	A: 443.4	Good	C: Good	A.2		
Acer pseudoplatanus					E	9.5	6		R: 11.88		S: Good	40+ yrs		
					S	9.5	5				B: Good	Located in amenity grass adjacent to car park. Stem leans slightly to east. Stem forks at 1.75m into 2 co-dominant stems of approx. 500mm with a u-shaped union, the crevasse within the union is water filled. Crown lift wounds over car park occluded. 1 snapped branch wound to north east at 5m 2m long not occluded. Tar spot present. Up to moderate deadwood within crown.		
					W	8	7							
Age Classifications:		N	Newly planted	EM	Early Mature		Condition:		C	Crown	Stems:		Ø	Diameter
		Y	Young	M	Mature				S	Stem			(Eq)	Equivalent stem diameter using BS5837:2012 definition
		SM	Semi-mature	OM	Over Mature				B	Basal area	ERC:		Estimated Remaining Contributio	

Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment		
T2												
Common Beech <i>Fagus sylvatica</i>	16	1	1100	N	10.5	2.5	M	A: 547.5 R: 13.2	Good	C: Good S: Fair B: Good	Located in amenity grass adjacent to stone wall with level change down to path of 0.5m. Evidence that tree originally had a codominant stem from 2.5m height that has failed or been removed historically, with large occluded area and reaction growth swelling the area. Branches have also since been pruned from the same area that have now occluded. 1 dead branch of 200mm at 3.5m to south west. Buttresses present. 1 area of wounding from anticipated pruning wounds to south at 1.5m, 5cm open wound with inner wood exposed, and up to 15cm wound wood.	A.2 40+ yrs
T3												
Common Beech <i>Fagus sylvatica</i>	18	1	740	N	9	2	EM	A: 247.8 R: 8.88	Good	C: Good S: Good B: Good	Located in amenity grass adjacent to stone wall with level change down to path of 0.5m. Lower trunk has been engraved and now in process of occluding. Nest box present. Lower pruning wounds occluded.	A.2 40+ yrs
T4												
Common Lime <i>Tilia europaea</i>	16	1	720	N	5	2	EM	A: 234.5 R: 8.63	Good	C: Good S: Good B: Good	Located in amenity grass adjacent to stone wall with level change down to path of 0.5m. Epicormics around base appear regularly pruned. Crown somewhat suppressed by T3 to north and is very close to nearby building.	A.2 40+ yrs
T5												
Whitebeam <i>Sorbus aria</i>	9	1	370	N	4	3	SM	A: 61.9 R: 4.43	Good	C: Good S: Good B: Good	Located in planting border amongst Portuguese Laurel and privet. Surface roots exposed within mulch bed. Stem forks at 2.5m. Crown lift wounds around stem up to 3m height partially occluded, up to 3cm wound and 3cm wound wood.	B.2 20+ yrs

Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations			Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
T6													
Sycamore <i>Acer pseudoplatanus</i>	13	1	500	N E S W	5 6 6 6	5	EM A: 113.1 R: 6	Fair	C: Fair S: Fair B: Good	Located in planting border. Numerous bacterial wounds around stem from 2m height, average 15cm diameter. Stem forks at 3m into 2 with a good union. Large volume of crown lift wounds around stem from 2m to 3m height not occluded with up to 10cm wounds with decay onset and up to 2cm wound wood. Relatively sparse crown with ink spot on leaves.			B.2 20+ yrs
T7													
Turkish Hazel <i>Corylus colurna</i>	7	1	180	N E S W	4 4 4 4	3	Y A: 14.7 R: 2.16	Good	C: Good S: Good B: Good	Located in raised planting border adjacent to steps with level change. Stem forks at 2m. No notable defects.			B.2 20+ yrs
T8													
Common Lime <i>Tilia europaea</i>	16	1	600	N E S W	5 6 6 6	9	EM A: 162.9 R: 7.2	Good	C: Good S: Good B: Good	Located in raised planting border. Epicormics around base appear regularly pruned. Crown has been lifted significantly with pruning wounds mostly occluded and epicormics returning around wounds.			A.2 40+ yrs
T9													
Common Lime <i>Tilia europaea</i>	16	1	700	N E S W	6 6 6 6	9	EM A: 221.7 R: 8.4	Good	C: Good S: Good B: Good	Located in planting border. Epicormics around base appear regularly pruned. Crown has been lifted significantly with pruning wounds mostly occluded and epicormics returning around wounds. Minor deadwood to east and west of crown			A.2 40+ yrs
T10													
Sycamore <i>Acer pseudoplatanus</i>	16	1	830	N E S W	7 8 8 8	5	M A: 311.7 R: 9.96	Good	C: Good S: Good B: Good	Located in planting border. Crown lift wounds up to 3m occluded. Epicormics at 2m to south. Variegated leaves with ink spot. Potential bacterial wounding to east at 10m.			A.1 40+ yrs
Age Classifications:	N Y SM	Newly planted Young Semi-mature	EM M OM	Early Mature Mature Over Mature	Condition:		C S B	Crown Stem Basal area	Stems:		Ø (Eq)	Diameter Equivalent stem diameter using BS5837:2012 definition	ERC: Estimated Remaining Contributio

Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations			Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
T11													
Common Holly <i>Ilex aquifolium</i>	7	1	310	N	3	2	SM	A: 43.5 R: 3.72	Good	C: Good S: Good B: Good	Located In shrub border. Tag attached to stem. Crown lift wounds occluded. Birds nest in crown. Slight lean to north.		B.2 20+ yrs
T12													
Common Lime <i>Tilia europaea</i>	6	1	190	N	3.5	1.5	Y	A: 16.3 R: 2.27	Fair	C: Good S: Good B: Poor	Located in grass border adjacent to hard standing. Significant surface roots above ground suggestive of limited space beneath ground. Roots have been wounded. Upheave of pavement		C.1 10+ yrs
T13													
Common Lime <i>Tilia europaea</i>	6	1	190	N	3.5	1.5	Y	A: 16.3 R: 2.27	Fair	C: Good S: Good B: Poor	Located in grass border adjacent to hard standing. Significant surface roots above ground suggestive of limited space beneath ground. Roots have been wounded. Upheave of pavement		C.1 10+ yrs
T14													
Common Lime <i>Tilia europaea</i>	16	1	690	N	6	9	EM	A: 215.4 R: 8.28	Good	C: Good S: Good B: Good	Located in planting border, gravel path leads past stem. Epicormics around base appear regularly pruned. Crown has been lifted significantly with pruning wounds mostly occluded and epicormics returning around wounds.		A.2 40+ yrs
T15													
Common Lime <i>Tilia europaea</i>	16	1	700	N	5	9	EM	A: 221.7 R: 8.4	Good	C: Good S: Good B: Good	Located in grass border with gravel path leading past stem. Dense epicormic growth around base. Crown has been lifted significantly with pruning wounds mostly occluded and epicormics returning around wounds. Stem forks at 4.5m into 2.		A.2 40+ yrs
Age Classifications:	N Y SM	Newly planted Young Semi-mature	EM M OM	Early Mature Mature Over Mature	Condition:		C S B	Crown Stem Basal area	Stems:		Ø (Eq)	Diameter Equivalent stem diameter using BS5837:2012 definition	ERC: Estimated Remaining Contributio

Tree and Tag No		Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations			Cat ERC
Species			No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
T16														
Common Lime <i>Tilia europaea</i>		16	1	650	N E S W	6 4.5 5 5.5	9 9 9 9	EM 	A: 191.2 R: 7.8	Good	C: Good S: Good B: Good	Located in grass border with gravel past adjacent to stem. Epicormics around base appear regularly pruned. Crown has been lifted significantly with pruning wounds mostly occluded and epicormics returning around wounds.		A.2 40+ yrs
T17														
Common Lime <i>Tilia europaea</i>		16	1	700	N E S W	6 5.5 5 5	8 9 9 10	EM 	A: 221.7 R: 8.4	Good	C: Good S: Good B: Good	Located in grass border with gravel path leading past stem. Epicormics around stem appear regularly pruned, dense epicormics to west of base. Crown has been lifted significantly with pruning wounds mostly occluded and epicormics returning around old wounds. Stem forks at 4.5m into 2.		A.2 40+ yrs
T18														
Norway Maple <i>Acer platanoides</i>		15	1	650	N E S W	6 7 7 8	4 5 5 3	EM 	A: 191.2 R: 7.8	Good	C: Good S: Good B: Fair	Located in amenity grass against retaining wall. Leans to east. A large burr to south at 5m. Minor deadwood throughout crown. Linear occlusion to north west 1m long.		B.2 20+ yrs
T19														
Common Lime <i>Tilia europaea</i>		10	1	400	N E S W	4.5 4.5 4.5 4.5	1 1 1 1	SM 	A: 72.4 R: 4.8	Good	C: Good S: Good B: Not visible	Located in amenity grass adjacent to stone wall. Dense epicormics around base of stem. No notable defects.		A.2 40+ yrs
T20														
Common Horse Chestnut <i>Aesculus hippocastanum</i>		11	1	860	N E S W	7 8 8 8	2 2 2 2	M 	A: 334.6 R: 10.32	Decline	C: Poor S: Poor B: Fair	Located in amenity grass adjacent to stone wall. Stem forks at 3m. Linear wounding from base through centre of fork and up the northern stem resulting from apparent lightning damage; wound mostly occluded with approx. 10cm wound wood. Bleed on buttress to east at 0.5m. Decay of buttress to south west 10cm x 20cm. Snapped branches in mid crown of southern stem approx. 100mm. Leaf minor dominant. Deadwood throughout crown.		C.1.2 <10 yrs
Age Classifications:		N Y SM	Newly planted Young Semi-mature	EM M OM	Early Mature Mature Over Mature	Condition:		C S B	Crown Stem Basal area	Stems:		Ø Diameter (Eq) Equivalent stem diameter using BS5837:2012 definition	ERC: Estimated Remaining Contributio	

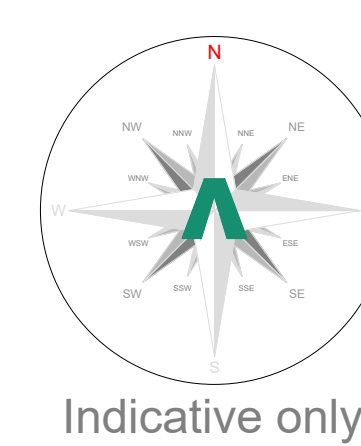
Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment		
T21												
Common Lime <i>Tilia europaea</i>	16	1	700	N E S W	6 6 6 5	8 9 9 10	EM 	A: 221.7 R: 8.4	Good	C: Good S: Good B: Good	Located in grass border. Epicormics around stem appear regularly pruned with dense epicormics around base. Crown has been lifted significantly with pruning wounds mostly occluded and epicormics returning around stem. Minor deadwood within east and west of crown.	A.2 40+ yrs
T22												
Common Lime <i>Tilia europaea</i>	16	1	700	N E S W	6 6 6 6	7 8 10 7	EM 	A: 221.7 R: 8.4	Good	C: Good S: Good B: Good	Located in grass border. Epicormics around stem appear regularly pruned with dense epicormics around base. Crown has been lifted significantly with pruning wounds mostly occluded and epicormics returning around stem. Minor deadwood within west of crown.	A.2 40+ yrs
T23												
Common Lime <i>Tilia europaea</i>	16	1	650	N E S W	6.5 6 5 6	7 8 10 8	EM 	A: 191.2 R: 7.8	Good	C: Good S: Good B: Good	Located in grass border. Dense epicormics around base. Crown has been lifted significantly with pruning wounds mostly occluded and epicormics returning around stem. Minor deadwood within north of crown.	A.2 40+ yrs
T24												
Common Holly <i>Ilex aquifolium</i>	3.5	1	300	N E S W	2.5 2.5 2.5 2.5	1 1 1 1	SM 	A: 40.7 R: 3.59	Fair	C: Fair S: Good B: Good	Variegated holly. Located in planting border. Has been topped at 3m with new shoots just forming.	C.2 10+ yrs
T25												
Common Lime <i>Tilia europaea</i>	16	1	650	N E S W	6 6 5 5	6 5 7 7	EM 	A: 191.2 R: 7.8	Good	C: Good S: Good B: Not visible	Located in grass border to rear of G1. Dense epicormics around base. Crown has been lifted significantly with pruning wounds mostly occluded and epicormics returning around stem. Minor deadwood throughout crown.	A.2 40+ yrs
Age Classifications:	N Y SM	Newly planted Young Semi-mature	EM M OM	Early Mature Mature Over Mature	Condition:		C S B	Crown Stem Basal area	Stems:		Ø Diameter (Eq) Equivalent stem diameter using BS5837:2012 definition	ERC: Estimated Remaining Contributio

Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations			Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
T26													
Sweet Chestnut <i>Castanea sativa</i>	10	1	420	N	4	2.5	SM	A: 79.8 R: 5.03	Good	C: Good S: Good B: Good	Located in amenity grass. Pruning wounds around stem to 2m height mostly occluded; largest wound with 5cm wound and 3cm wound wood to west of stem. Some surface roots exposed. South of crown somewhat suppressed by neighbour.		B.2 20+ yrs
T27													
Norway Maple <i>Acer platanoides</i>	10	4	367 (Eq)	N	3	2	SM	A: 60.9 R: 4.4	Good	C: Good S: Good B: Good	Located in amenity grass. Stem forks at 1.75m, measured at 300mm below. No central leader. Large pruning wound to west at 2.5m of 10cm diameter.		B.2 20+ yrs
T28													
Common Lime <i>Tilia europaea</i>	10	1	210	N	3.5	1.5	Y	A: 20 R: 2.52	Good	C: Good S: Good B: Good	No notable features. Slight lean to south west.		B.2 20+ yrs
T29													
Norway Maple <i>Acer platanoides</i>	12	1	350	N	5	2	EM	A: 55.4 R: 4.19	Good	C: Good S: Good B: Fair	Located in amenity grass. Surface roots exposed with mower wounding. Side limb of approx. 200mm at 1.5m.		B.2 20+ yrs
T30													
Sweet Chestnut <i>Castanea sativa</i>	12	1	300	N	4	2	SM	A: 40.7 R: 3.59	Good	C: Good S: Good B: Good	Located in amenity grass. Pruning wounds around stem to 2m height, largest wound with 5cm wound and 3cm wound wood to west of stem. North of crown somewhat suppressed by neighbour.		B.2 20+ yrs
T31													
Common Lime <i>Tilia europaea</i>	16	1	480	N	5	2	EM	A: 104.2 R: 5.75	Good	C: Good S: Good B: Good	Located in amenity grass adjacent to wall. Surface roots exposed. Epicormics cut around base. Birds nest in crown.		A.1 40+ yrs
Age Classifications:	N Y SM	Newly planted Young Semi-mature	EM M OM	Early Mature Mature Over Mature	Condition:		C S B	Crown Stem Basal area	Stems:	Ø (Eq)	Diameter Equivalent stem diameter using BS5837:2012 definition	ERC:	Estimated Remaining Contributio

Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations			Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
T32													
Common Horse Chestnut <i>Aesculus hippocastanum</i>	17	1	1000	N	9	2	M	A: 452.4 R: 12	Fair	C: Fair S: Good B: Good	Located in grass near to level changes of 0.5m. Sound testing of lower stem reveals potential cavity to north eastern side of base. Severe leaf miner. Significant branch failure to north at 7m height leaves cavity of approx. 30cm where branch has snapped. Buttresses present. Lower branches have been shortened at 3m height with epicormics and wounds still present of up to 15cm diameter.	B.1 40+ yrs	
T33													
Common Horse Chestnut <i>Aesculus hippocastanum</i>	16	1	780	N	8	3	M	A: 275.3 R: 9.36	Good	C: Good S: Good B: Good	Located in amenity grass adjacent to wall. Some large branches have gnarled appearance due to pruning of epicormics around lamp post. Leans to east.	A.2 40+ yrs	
T34													
Sycamore <i>Acer pseudoplatanus</i>	17	1	780	N	7	4	M	A: 275.3 R: 9.36	Fair	C: Fair S: Fair B: Good	Evidence of potential boring insect around stem. Stem forks at 3m, the eastern stem has multiple decay entry points with cavities apparent within branch wounds, and a sparse crown.	B.1 20+ yrs	
T35													
Common Horse Chestnut <i>Aesculus hippocastanum</i>	13	1	590	N	5	2	EM	A: 157.5 R: 7.08	Fair	C: Poor S: Fair B: Good	Located in amenity grass adjacent to wall. Stem leans to east. Stem forks at 4m into 3, 2 of which have crossed resulting in 1 snapping and leaving large wound with decay. The other stem is 50% sparse. Leaf minor dominant creating sparse crown.	C.1 10+ yrs	
T36													
Common Beech <i>Fagus sylvatica</i>	20	1	870	N	6	3	M	A: 342.5 R: 10.44	Good	C: Good S: Good B: Good	Located at elevated mound in amenity lawn. Buttresses present. Tall crown. Pruning wounds occluded. No observed defects. Holly sapling obscures base to the west.	A.1.2 40+ yrs	
Age Classifications:	N	Newly planted	EM	Early Mature	Condition:			C	Crown	Stems:	Ø	Diameter	
	Y	Young	M	Mature				S	Stem		(Eq)	Equivalent stem diameter using BS5837:2012 definition	
	SM	Semi-mature	OM	Over Mature				B	Basal area	ERC:		Estimated Remaining Contributio	

Tree and Tag No Species		Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC
			No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment		
T37													
Italian Maple		15	1	730	N	7	4	M	A: 241.1	Fair	C: Good		B.2
Acer opalus					E	7	4		R: 8.76		S: Good		
					S	7	4				B: Fair		
					W	7	4					Not included on topographical survey. Growing in tree pit adjacent to road. Large wound at base to north 30cm diameter decay onset with up to 10cm wound wood. Epicormics overhang road at 2m. Deadwood within crown.	20+ yrs
</													

Appendix 3: Tree Constraints Plan



Indicative only

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 'V' - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

Category 'W' - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

Category 'X' - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 100mm.

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Area (RPA) should be plotted around each of the category 'U' and 'V' trees. This is a minimum area in m 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 'Trees 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).

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Drawing:

Tree Constraints Plan

Based on:

PMS21067

Drawing No:

Arbtech TCP 01

Date:

Sept 2021

Scale:

1:150 @ A0

Drawn:

EK

Key:

Tree No.	T1	Tree Category	Category 'U' trees	Trunk	Trunk
RPA		Category 'V' trees	Category 'W' trees	Category 'X' trees	Category 'U' trees
Category 'U' groups		Category 'V' trees	Category 'W' trees	Category 'X' trees	Category 'U' trees

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Document Production Record

Document number	Editor	Signature	Position	Issue number	Date
Arbtech TSR 01	Emily Kempson		Consultant	1	28/09/2021

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