



BS5837:2012

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

Arboricultural Impact Assessment

Graham Evans

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

1 October 2021

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Introduction

Arbtech Consulting Limited (Arbtech) received written instruction on 24th September 2021 from Andrew Clarke of TACP Architects 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 and arboricultural impact assessment.

Executive Summary

This report describes the extent and effect of the proposed development at the site on individual trees and groups of trees within and adjacent to the site.

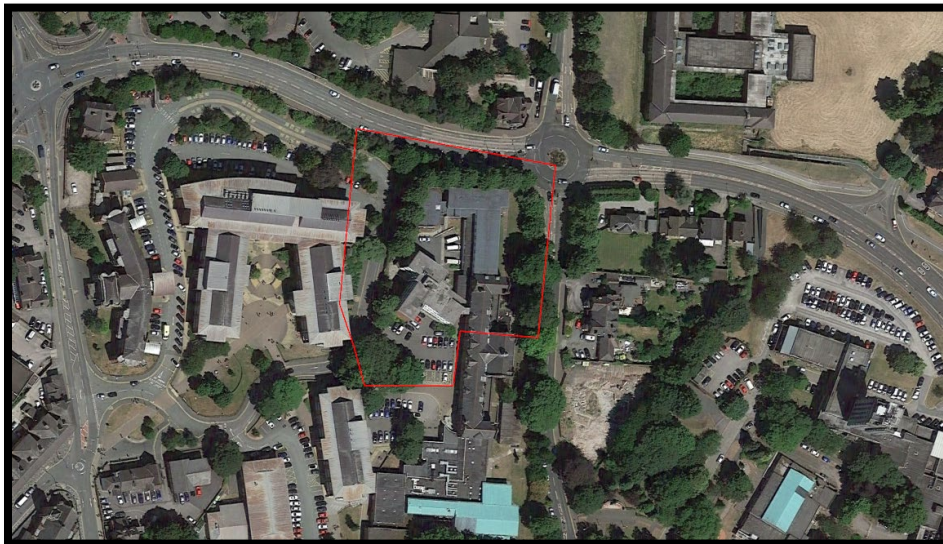


Figure 1: Aerial Image of site (Google Earth)

Trees within the site were surveyed; using a methodology guided by British Standard 5837:2012 'Trees in relation to design, demolition and construction – Recommendations' ("BS5837").

Subsequently, this report has been produced, balancing the layout of the proposed development against the competing needs of trees. This report comprises all of the requisite elements of an arboricultural implications assessment, method statement and supporting plans.

General Information

Client: Graham Evans

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

Brief proposal description: New 3-storey building to replace footprint of existing 2-storey building. A new car park will replace the existing 3-storey building.

Table 1: Documents referred to.

Document	Reference No.
Topographical Survey	PMS21067
Proposed layout drawing	ZZ-DR-A-701
British Standard 5837:2012	"BS5837"
Arboricultural Impact Assessment	Arbtech AIA 01

Tree Survey

Survey: An arboricultural survey to BS5837 of all trees within impacting distance of the site was undertaken by Emily Kempson of Arbtech Consulting on 27th September 2021.

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 1).

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

Document	Originator	Reference Number	Title
Topographical survey	PM Surveys UK	PMS21067	Topographical Survey

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.

Arboricultural Impact Assessment

Table 3: Documents upon which this assessment has been based

Document	Originator	Reference Number	Title
Topographical survey	PM Surveys UK	PMS21067	Topographical Survey
Proposal	TACP Architects	ZZ-DR-A-701	Proposed Site Layout

There are a number of issues that may need to be addressed in an arboricultural impact assessment between the trees and the proposed development, these are as follows:

- The effect and extent of the proposed development within the root protection areas (RPAs) of retained trees;
- The potential conflicts of the proposed development with canopies of retained trees; and
- The likelihood of any future remedial works to retained trees beyond which would have been scheduled as a part of usual management.

Table 4: Impacts upon the RPAs of retained trees

Tree Number	Species	Structure	Incursion
T6	Sycamore	Existing building demolition	RPA
T16	Common Lime	Existing building demolition and construction of new building	RPA
T17	Common Lime	Existing building demolition and construction of new building	RPA
T21	Common Lime	Existing building demolition and construction of new building	RPA
T22	Common Lime	Existing building demolition and construction of new building	RPA
T23	Common Lime	Existing building demolition and construction of new building	RPA
T25	Common Lime	Construction of new building	RPA
T31	Common Lime	Construction of new building	RPA
T32	Common Horse Chestnut	Construction of new building	RPA

These impacts can be seen on the Arboricultural Impact Assessment drawing number Arbtech AIA 01.

Trees to be removed

The proposal requires the removal of 9 No. individual trees.

A breakdown of all tree removals and pruning works can be seen in Table 7: Summary of Tree Works

Table 5: Number of individual trees to be removed.

U	A	B	C
0	4	5	0

Table 6: Number of groups to be removed. () indicates partial removal.

U	A	B	C
0	0	0	0

Tree Works

For reasons of public safety, all tree works referred to herein must be carried out prior to any site personnel commencing works or any building materials being delivered.

Table 7: Summary of Tree Works

No.	Species	Works	Category
T6	Sycamore	Prune canopy to achieve 1.5m clearance from building to be demolished (east crown)	B2
T8	Common Lime	Fell to ground level, remove stump	A2
T9	Common Lime	Fell to ground level, remove stump	A2
T14	Common Lime	Fell to ground level, remove stump	A2
T15	Common Lime	Fell to ground level, remove stump	A2
T16	Common Lime	Prune canopy to achieve 1.5m clearance from new building (south crown)	A2
T17	Common Lime	Prune canopy to achieve 1.5m clearance from new building (south crown)	A2
T21	Common Lime	Prune canopy to achieve 1.5m clearance from new building (south crown)	A2
T22	Common Lime	Prune canopy to achieve 1.5m clearance from new building (south crown)	A2
T23	Common Lime	Prune canopy to achieve 1.5m clearance from new building (south crown)	A2
T25	Common Lime	Prune canopy to achieve 1.5m clearance from new building (south crown)	A2
T26	Sweet Chestnut	Fell to ground level, remove stump	B2
T27	Norway Maple	Fell to ground level, remove stump	B2
T28	Common Lime	Fell to ground level, remove stump	B2
T29	Norway Maple	Fell to ground level, remove stump	B2
T30	Sweet Chestnut	Fell to ground level, remove stump	B2
T31	Common Lime	Prune canopy to achieve 1.5m clearance from building (north-west crown)	A1

Notes

All tree work is to be undertaken in accordance with British Standard BS 3998:2010, Recommendations for tree work. All arising's are to be removed and the site is to be left as found. Care is to be taken of the ground around retained trees to make sure that it does not become compacted as a result of tree surgery operations. No equipment or vehicles such as timber Lorries, tractors, excavators or cranes shall be parked or driven beneath the crowns of any retained trees, to prevent subsequent compaction and root death.

Tree removal

A tree should be felled in one piece only when there is no significant risk of damage to people, property or protected species (see Annex A).

Where restrictions (e.g. lack of space, buildings, other features, land ownership or use, or other trees which are to be retained) cannot be overcome, trees should be dismantled in sections.

This also applies where a tall stump is being retained but where branches are to be removed/pruned.

Extensively decayed trees can be unpredictable when they are being felled, and special precautions should therefore be taken, such as the use of a winch to guide the direction of fall.

Stump removal - digging

Stump removal by digging out should include disposal/utilisation of woody material (see Clause 13).

NOTE *Whether done by hand or machine, digging out can cause severe disturbance of the site.*

Where possible, when winching out a stump, a ground or other type of anchor should be used rather than a tree to be retained. If there is no alternative to using such a tree as an anchor, appropriate protective measures should be adopted.

After stump removal

The hole left by stump removal, whether by digging out or grinding, should be filled with soil or other material. The filling should be appropriate for future site usage and for any surface treatment that is to be installed.

Where future plant growth is desired, the back fill material should be firmed in 150mm layers by treading, avoiding excessive compaction and destruction of the soil structure.

Protected Species

Conservation Status of British Bats

The general consensus in Britain and Europe is that virtually all bat species are declining and vulnerable. Our understanding of population status is poor as there is very little historical data for most bat species. Certain species, such as the horseshoe bats, are better understood and have well documented contractions in range and population size.

Given this general picture of decline in UK Government within the UK Biodiversity Action Plan has designated five species of bats as priority species (greater and lesser horseshoe bats, barbastelle, Bechstein's and pipistrelle). These plans provide an action pathway whereby the maintenance and restoration of the former populations levels are investigated.

Legal Status of British Bats

Given the above position all British bats as well as their breeding sites and resting places enjoy national and international protection.

All bat species in the UK are fully protected under the Wildlife and Countryside Act 1981 (as amended) through inclusion in Schedule 5. All bats are also listed on Annex IV (and some on Annex II) of the EC Habitats Directive giving further, European protection. Taken together the act and Conservation of Habitats and Species Regulations 2012 (as amended)* make it an offence to; intentionally or deliberately kill, injure or capture (take) bats;

- Deliberately disturb bats (whether in a roost or not);
- Damage, destroy or obstruct access to bat roosts;
- Possess or transport a bat or any part of a bat, unless acquired legally;
- Sell, barter or exchange bats, or parts of bats

The legislation although not strictly affording protection to foraging grounds does protect roost sites. Bat roosts are protected at all times of the year whether or not bats are present. Any disturbance of a roost due to development must be licenced.

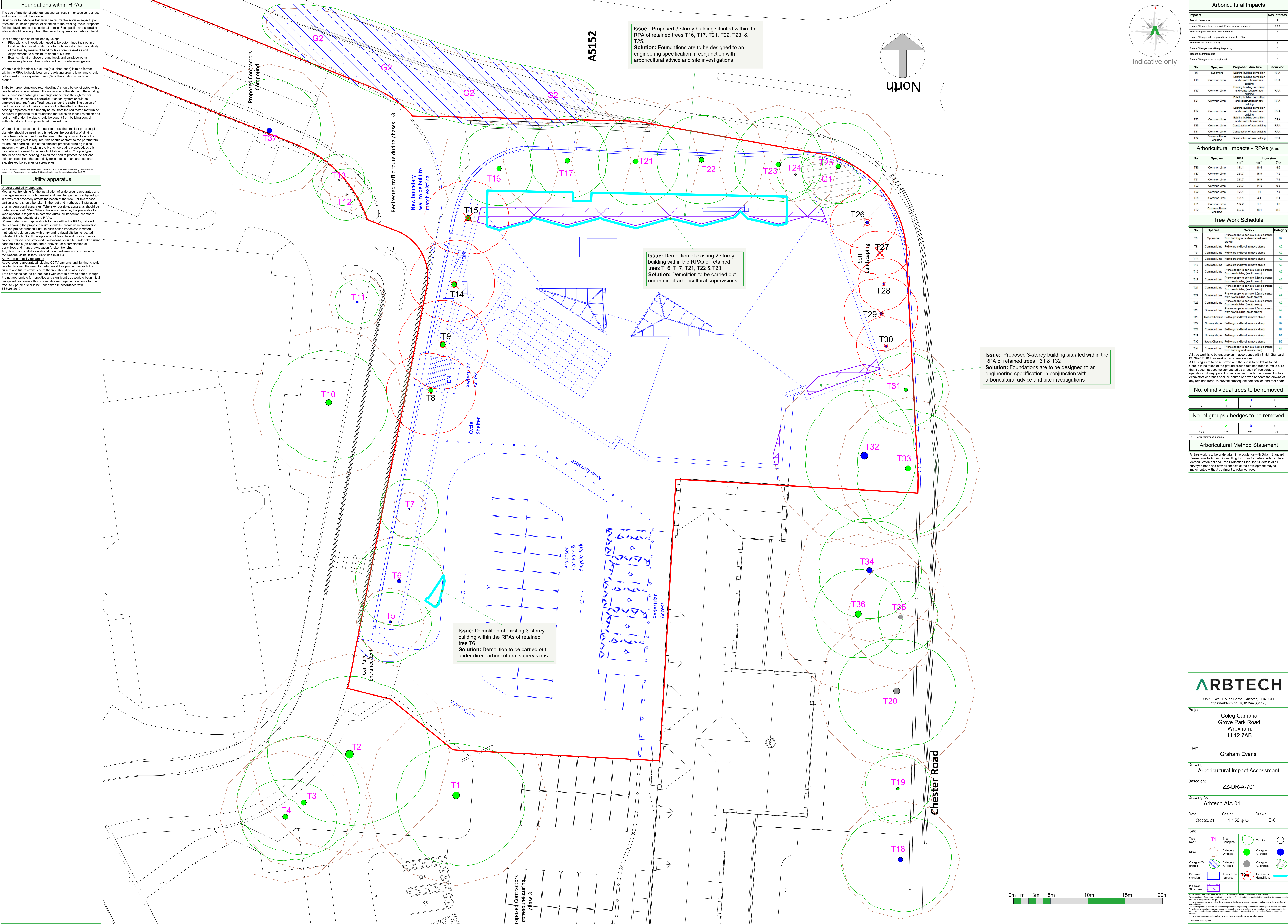
**the regulations that delivered by the UK's commitments to the Habitats Directive.*

Breeding birds

All nesting birds are protected under the Wildlife and Countryside Act (as amended) 1981, which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. Furthermore a number of birds enjoy further protection under that Act and are listed on Schedule 1 of the Act. These further protected birds are also protected from disturbance and it may be necessary to operate “no-go” buffer zones around such nests – typically out to 100m.

Planning policy guidance on the treatment of species identified as priorities under the biodiversity action programme suggests that local authorities should take measures to protect the habitats of these species from further decline through policies in local development documents and should ensure that they are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations. The conservation of these species should be promoted through the incorporation of

Appendix 1: Arboricultural Impact Assessment Plan



Foundations within RPAs

The use of traditional deep foundations can result in excessive root loss and as such should be avoided.

Design for foundations that would minimise the adverse impact upon trees should include particular attention to the existing levels, proposed finished levels and cross sectional details. Site specific and specialist advice should be sought from the project engineers and arboriculturalist.

Root damage can be minimised by using:

- Piles with site investigation used to be determined their optimal location whilst avoiding damage to roots important for the stability of the tree, by means of hand tools or compressed air soil displacement to a minimum depth of 600mm.
- Beams, laid at or above ground level, and cast/overlaid as necessary to avoid tree roots identified by site investigation.

Where a slab for minor structures (e.g. shed bases) to be formed within the RPA, it should bear on the existing ground level, and should not exceed an area greater than 20% of the existing unsurfaced ground.

Slabs for larger structures (e.g. dwellings) should be constructed with a ventilated air space between the underside of the slab and the existing soil surface (to enable gas exchange and venting through the soil surface). In such cases, a specialist irrigation system should be employed (e.g. roof run-off redirected under the slab). The design of the foundation should take into account the effect on the load bearing properties of the underlying soil from the redirected roof run-off.

Approval in principle for a foundation that relies on topsoil retention and root run-off under the slab should be sought from building control authority prior to this approach being relied upon.

Where piling is to be installed near to trees, the smallest practical pile diameter should be used, as this reduces the possibility of striking major tree roots, and reduces the size of the rig required to sink the pile. If a piling rig is required, this should conform to the parameters for ground boring. Use of the smallest practical piling rig is also important where piling within the branch spread is proposed, as this can reduce the need for access facilitation pruning. The pile type should be selected bearing in mind the need to protect the soil and adjacent roots from the potentially toxic effects of uncured concrete, e.g. sleeved bored piles or screw piles.

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Utility apparatus

Underground utility apparatus

Mechanical trenching for the installation of underground apparatus and drainage serves any roots present and can change the local hydrology in a way that adversely affects the health of the tree. For this reason, particular care should be taken in the root and methods of installation of all underground apparatus. Wherever possible, apparatus should be routed outside of RPAs. Where this is not possible, it is preferable to keep apparatus together in common ducts, all inspection chambers should be sited outside of the RPAs.

Where underground apparatus is to pass within the RPAs, detailed plans showing the proposed route should be drawn up in conjunction with the project arboriculturalist. In such cases trenchless insertion methods should be used with entry and retrieval pits being located outside of the RPAs. If this option is not feasible and providing roots can be retained and protected excavations should be undertaken using hand held tools (air-spade, forks, shovels) or a combination of trenchless and manual excavation (broken trench).

Any design and installation should be undertaken in accordance with the National Joint Utilities Guidelines (NJUG).

Above-ground utility apparatus

Above-ground apparatus (including CCTV cameras and lighting) should be sited to avoid the need for detrimental tree pruning, as such the current and future crown size of the tree should be assessed. Tree branches can be pruned back with care to provide space, though it is not appropriate for repetitive and significant tree work to be an initial design solution unless this is a suitable management outcome for the tree. Any pruning should be undertaken in accordance with BS3998:2010.

Arboricultural Impacts

Impacts	Nos. of trees
Trees to be removed	0
Group A trees to be removed (Partial removal of groups)	0 (0)
Trees with proposed incisions into RPAs	0
Group A hedges with proposed incisions into RPAs	0
Trees that will require pruning	0
Group A hedges that will require pruning	0
Trees to be transplanted	0
Group A hedges to be transplanted	0

No.	Species	Proposed structure	Incursion
T6	Sycamore	Existing building demolition	RPA
T16	Common Lime	Existing building demolition and construction of new building	RPA
T17	Common Lime	Existing building demolition and construction of new building	RPA
T21	Common Lime	Existing building demolition and construction of new building	RPA
T22	Common Lime	Existing building demolition and construction of new building	RPA
T23	Common Lime	Existing building demolition and construction of new building	RPA
T25	Common Lime	Construction of new building	RPA
T31	Common Lime	Construction of new building	RPA
T32	Common Horse Chestnut	Construction of new building	RPA

Arboricultural Impacts - RPAs (Area)

No.	Species	RPA (m²)	Incursion (m²)	%
T16	Common Lime	151.1	95.4	6.6
T17	Common Lime	221.7	15.9	7.2
T21	Common Lime	221.7	15.9	7.6
T22	Common Lime	221.7	14.5	6.5
T23	Common Lime	191.1	14	7.3
T25	Common Lime	191.1	4.1	2.1
T31	Common Lime	194.2	1.7	1.6
T32	Common Horse Chestnut	452.4	15.1	3.6

Tree Work Schedule

No.	Species	Works	Category
T6	Sycamore	Prune canopy to achieve 1.5m clearance from building to be demolished west (2020)	B2
T8	Common Lime	Fell to ground level, remove stump	A2
T9	Common Lime	Fell to ground level, remove stump	A2
T14	Common Lime	Fell to ground level, remove stump	A2
T15	Common Lime	Fell to ground level, remove stump	A2
T16	Common Lime	Prune canopy to achieve 1.5m clearance from new building (south cross)	A2
T17	Common Lime	Prune canopy to achieve 1.5m clearance from new building (south cross)	A2
T21	Common Lime	Prune canopy to achieve 1.5m clearance from new building (south cross)	A2
T22	Common Lime	Prune canopy to achieve 1.5m clearance from new building (south cross)	A2
T23	Common Lime	Prune canopy to achieve 1.5m clearance from new building (south cross)	A2
T25	Common Lime	Prune canopy to achieve 1.5m clearance from new building (south cross)	A2
T26	Sweet Chestnut	Fell to ground level, remove stump	B2
T27	Norway Maple	Fell to ground level, remove stump	B2
T28	Common Lime	Fell to ground level, remove stump	B2
T29	Norway Maple	Fell to ground level, remove stump	B2
T30	Sweet Chestnut	Prune canopy to achieve 1.5m clearance from building (north-west cross)	B2
T31	Common Lime	Prune canopy to achieve 1.5m clearance from building (north-west cross)	A1

All tree work is to be undertaken in accordance with British Standard BS 3968:2010 Tree work - Recommendations.

All arisings are to be removed and the site is to be left as found.

Care is to be taken of the ground around retained trees to make sure that it does not become compacted as a result of tree surgery operations. No equipment or vehicles such as timber trailers, tractors, excavators or cranes shall be parked or driven beneath the crowns of any retained trees, to prevent subsequent compaction and root death.

No. of individual trees to be removed

U	A	B	C
0	4	5	0

No. of groups / hedges to be removed

U	A	B	C
0 (0)	0 (0)	0 (0)	0 (0)

(-) Partial removal of a group

Arboricultural Method Statement

All tree work is to be undertaken in accordance with British Standard BS 3968:2010 Tree work - Recommendations.

Please refer to ArborTech Consulting Ltd. Tree Schedule, Arboricultural Method Statement and Tree Protection Plan, for full details of all surveyed trees and how all aspects of the development may be implemented without detriment to retained trees.

ARBTECH

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<https://arbtech.co.uk>, 01244 661170

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

Client: Graham Evans

Drawing: Arboricultural Impact Assessment

Based on: ZZ-DR-A-701

Drawing No: Arbtech AIA 01

Date: Oct 2021 Scale: 1:150 @ A0 Drawn: EK

Key:

Tree No.	Tree Category	Trunk	Canopy
T1	Category 'A' trees	Green circle	Blue circle
Category 'B' trees	Category 'B' trees	Green circle	Blue circle
Category 'C' trees	Category 'C' trees	Green circle	Blue circle
Proposed site plan	Trees to be removed	Red X	Red X
Incursion Structures	Incursion - demolition	Red X	Red X

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Appendix 2: Tree Survey Schedule

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	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	20+ yrs	
						S	3	1				B: Not visible			
						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	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.	40+ yrs	
						S	9.5	5				B: Good			
						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		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			
T2														
Common Beech <i>Fagus sylvatica</i>		16	1	1100	N E S W	10.5 11 9.5 11	2.5 2 2 7	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 E S W	9 7.5 7 9	2 2 2 5	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 E S W	5 7 6 6	2 2 2 4	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 E S W	4 5.5 5.5 4	3 4 5 4	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	
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			
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 Diameter (Eq) 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 Newly planted EM Early Mature Y Young M Mature SM Semi-mature OM Over Mature Condition: C Crown S Stem B 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	
				E	7	2							
				S	9	2							
				W	8	2							
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	
				E	8	6							
				S	9	2							
				W	7	3							
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	
				E	7	4							
				S	6.5	4							
				W	7	4							
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	
				E	5	2							
				S	5	2							
				W	3	5							
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	
				E	6	3							
				S	6	3							
				W	6	3							
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		
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: Contact Details

Name	Position	Company	Contact
	Client		
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