



Arboricultural Survey to BS5837:2012

Omi Johal

**White Ridges,
29 Kewferry Drive,
Northwood,
Hillingdon,
HA6 2NT**

27 April 2023

Jim Green MArborA

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If this report has been released electronically the appendices referred to herein can be found in the annexed zip folder/s as .pdf files. If this report has been released in hard copy the appendices will be bound into the back of this report. Plans are annexed separately as A0, A1, A2 or A3 as appropriate.

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1. Introduction

Arbtech Consulting Limited (Arbtech) received written instruction on 16th March 2023 from Kevin Padilla on behalf of client to attend White Ridges, 29 Kewferry Drive, Northwood, Hillingdon, HA6 2NT; grid reference, TQ080920 (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 and a Tree Constraints Plan.

I am Jim Green, an arboricultural consultant at Arbtech Consulting Ltd. I undertook the tree survey on 26th April 2023 and subsequently have produced this summary of my findings.

I have over thirty years of industry experience, hold the LANTRA Professional Tree Inspection certificate and am a Professional Member of the Arboricultural Association.

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	OS Tile: White Ridges
LPA pre-app comments	N/A
British Standard 5837:2012	“BS5837”
Tree Survey Schedule	Arbtech TS 01
Tree Constraints Plan	Arbtech TCP 01

2. Survey

Survey: An arboricultural survey to BS5837 of all trees within impacting distance of the site was undertaken by Jim Green on 26th 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 11 (eleven) individual trees, 6 (six) groups of trees and 2 (two) hedges were surveyed. Details for each of the trees surveyed are provided in the Schedule of Trees (see Appendix 2).

Multiple other small trees and shrubs occupy the site, none of which meet the minimum diameter requirements to be considered for this survey.

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

Document	Originator	Reference Number	Title
OS Tile	Ordnance Survey	-	White Ridges

Limitations: The survey was made at ground level using visual observation only. Detailed examinations, such as climbing inspections and advanced 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 sits in a residential setting to the south of Kewferry Drive, a private road to the northwest of Northwood.

The site is accessed from the north via an existing, private tarmac in-out drive. Passing the existing house to the rear of the property, the back garden is mainly laid to lawn with surrounding trees.

The trees surveyed are mainly around the periphery and the whole site exhibits a general level incline from northeast to southwest of approximately 1:10.

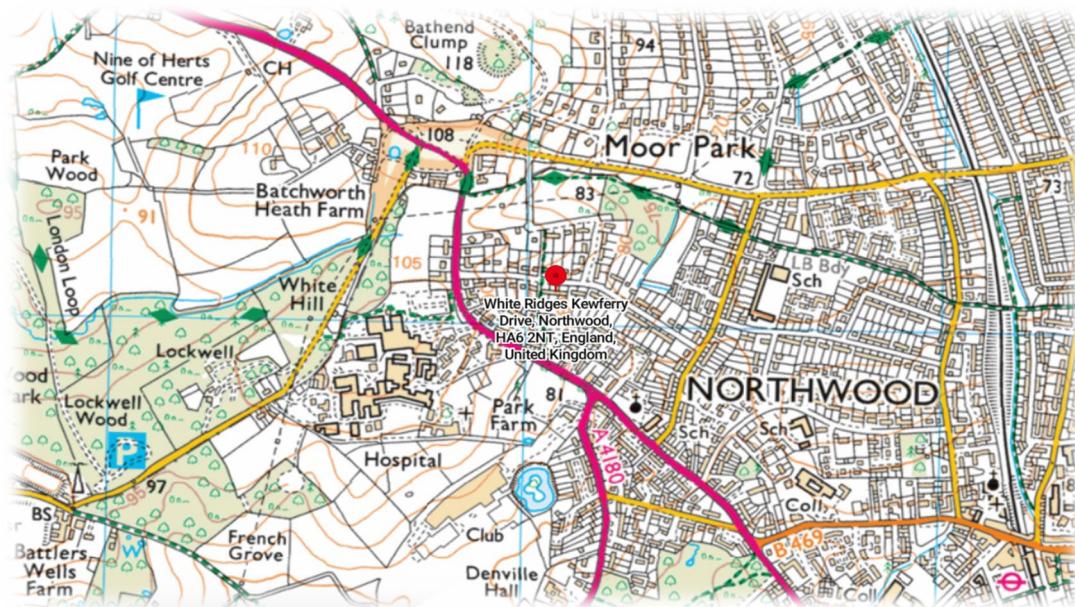


Figure 1: OS Map (Bing Maps)



Figure 2: Aerial Image of site with **approximate** red line boundary (Google Earth)

Proposed scheme

The proposal is to replace the existing house with a new 5-bedroom, 2-storey dwelling.

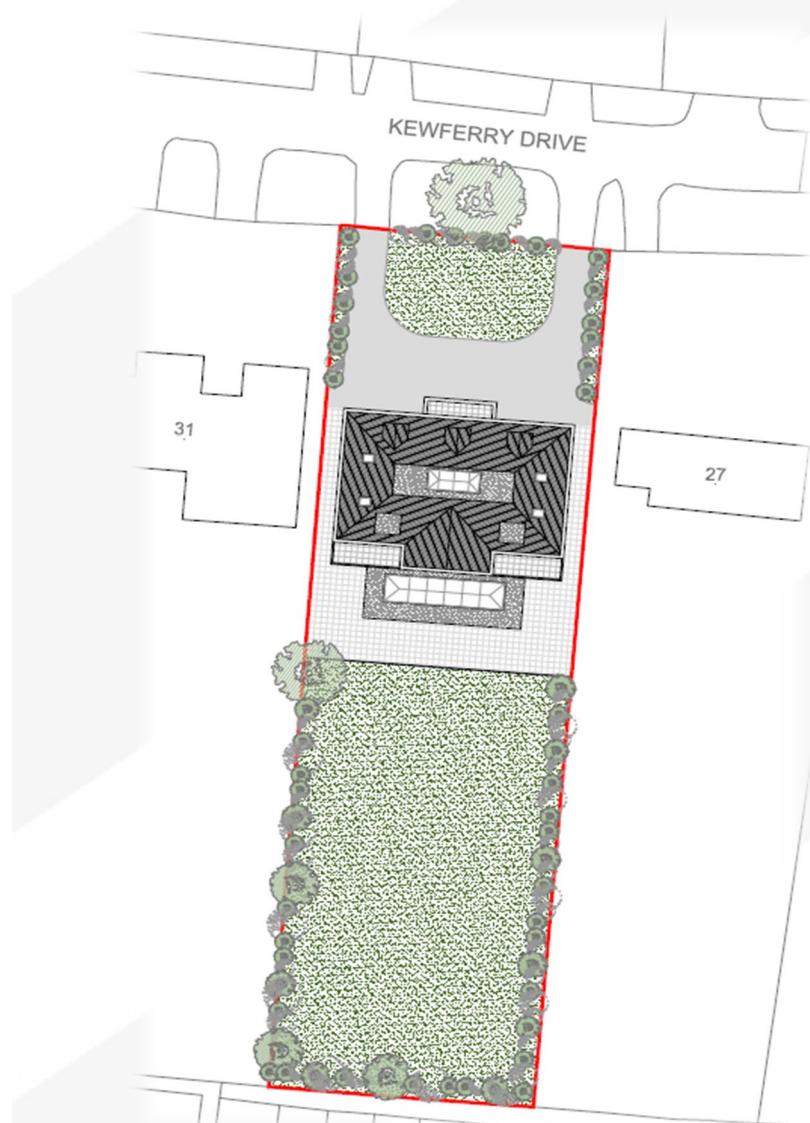


Figure 3: Proposed scheme, drawing number P102 Rev.C

It is possible that arboricultural impacts may need to be addressed with arboricultural methodology or minor amendments to the proposal.

3. 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.

4. 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:

- a) reference number (to be recorded on the tree survey plan);
- b) species (common or scientific names);
- c) height in meters (m);
- d) stem diameter in millimetres (mm) at 1.5m above adjacent ground level or immediately above the root flare for multi-stemmed trees;
- e) branch spread in meters taken at the four cardinal compass points;
- f) height of crown clearance above adjacent ground level in meters (m);
- g) age class (newly planted, young, semi-mature, early mature, mature, over mature);
- h) physiological condition (e.g. good, fair, poor, decline and dead);
- i) structural condition (e.g. good, fair, poor or not visible);
- j) comment about the tree, its location and preliminary management recommendations, including further investigation of suspected defects that require more detailed assessment and potential for wildlife habitat;
- k) The retention category referring to the quality and useful contribution in years; **U** = <10yrs; **A** = >40yrs; **B** = >20yrs; **C** = >10yrs. The retention subcategory referring to the type of amenity; 1 = Arboricultural; 2 = Landscape; 3 = Cultural including conservation (see Appendix 1 Cascade chart for tree quality assessment).

5. 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 (.DWG 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 (AIA)

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 (TPP)

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 (AMS)

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.

6. 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.

7. 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,



Jim Green MArborA
Arboricultural Consultant

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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.	<ul style="list-style-type: none"> 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. <p><i>NOTE Category U trees can have existing or potential conservation value which might be desirable to preserve; see 4.5.7.</i></p>	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.
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.
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.	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

Appendix 2: Schedule of Trees

Client: Omi Johal
 Project: White Ridges
 Survey Date: 26/04/2023
 Surveyor: Jim Green

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 (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment		
G1												
A Group <i>See comments for details</i>	9	1	240	N 2	0 SM	A: 26.1	Good	C: Good	S: Good			C.1.2
				E 1	0	R: 2.88						
				S 1	0							
				W 2	0							
G2												
A Group <i>See comments for details</i>	10	1	210	N 1	4 SM	A: 20	Fair	C: Fair	S: Fair			U
				E 1	4	R: 2.52						
				S 1	3							
				W 1	4							
G3												
A Group <i>See comments for details</i>	11	1	150	N 2	2 SM	A: 10.2	Fair	C: Fair	S: Fair			U
				E 2	2	R: 1.8						
				S 2	2							
				W 2	2							
G4												
A Group <i>See comments for details</i>	10	1	370	N 2	2 SM	A: 61.9	Good	C: Good	S: Fair			B.1.2
				E 2	2	R: 4.43						
				S 2	2							
				W 2	2							
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 Contribution		

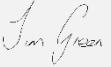
Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment		
G5											Estimated Measurements	
Cupressus <i>Cupressus sp.</i>	10	1	160	N E S W	1 1 1 1	2 2 2 2	SM R: 1.92	A: 11.6	Dead	C: Poor S: Poor B: Poor	Group of two standing-dead cypress.	U n/a
G6												
A Group <i>See comments for details</i>	18	1	320	N E S W	2 5 2 3	4 3 4 5	SM R: 3.83	A: 46.3	Good	C: Good S: Good B: Good	Linear screening group of ~18 thuja. No significant features. Dimensions recorded for typical member of group.	B.1.2 20+ yrs
H1												
A Hedge <i>See comments for details</i>	5	1	240	N E S W	1 1 1 1	0 0 0 0	SM R: 2.88	A: 26.1	Good	C: Good S: Good B: Good	Linear boundary cypress hedge. Dimensions recorded for typical member of hedge.	C.1.2 10+ yrs
H2												
A Hedge <i>See comments for details</i>	1.5	1	30	N E S W	0.5 0.5 0.5 0.5	0 0 0 0	SM R: 0.35	A: 0.4	Good	C: Good S: Good B: Good	Linear hedge of predominantly privet. Dimensions recorded for typical member of hedge.	C.1.2 10+ yrs
T1												
Common Oak <i>Quercus robur</i>	11	1	860	N E S W	5 5 5 5	2 2 2 2	M R: 10.32	A: 334.6	Good	C: Good S: Good B: Good	Small patch of dark exudate to stem to north at 1.2m. Historically heavily crown-reduced, leaving stubs up to 150mm diameter and 1m long, partial occlusion, necrotic heartwood visible.	B.1.2 20+ yrs
T2											Estimated Measurements	
Common Oak <i>Quercus robur</i>	12	1	600	N E S W	6 8 7 6	3 3 3 3	SM R: 7.2	A: 162.9	Good	C: Good S: Good B: Good	Off site tree. Stub from storm damage at 8m to north, 100mm diameter and 1m long.	B.2 20+ 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 Contribution									

Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment		
T3 Lawson Cypress <i>Chamaecyparis lawsoniana</i>	13	3	340	(Eq)	N 3 E 2 S 2 W 2	1	SM R: 4.07	A: 52.2	Good C: Good S: Good B: Not visible	Boundary tree trifurcated from base into dominant and lesser stems, basal area somewhat obscured by debris and ivy restricting detailed inspection.		C.1.2 10+ yrs
T4 Magnolia <i>Magnolia sp.</i>	6	1	150	N 2 E 1 S 2 W 3	3	SM R: 1.8	A: 10.2	Good C: Good S: Good B: Good	Stem lean to west of 30° from upright before correcting phototropically at 2m. Crown bias to west.		C.1.2 10+ yrs	
T5 Norway Maple <i>Acer platanoides</i>	7	1	150	N 3 E 1 S 2 W 2	2	SM R: 1.8	A: 10.2	Good C: Good S: Fair B: Good	Small patches of dark exudate to stem to west at 1m, surface roots visible to north and south. Adjacent ground to west waterlogged.		C.1.2 10+ yrs	
T6 Norway Maple <i>Acer platanoides</i>	12	1	290	N 4 E 2 S 4 W 5	3	SM R: 3.48	A: 38.1	Good C: Good S: Fair B: Good	Stem lean to west of 15° from upright before correcting phototropically at 3m where stem trifurcates into dominant and lesser stems. Recovered lesions to lower stem, surface roots visible to north and south. Adjacent ground to west waterlogged.		C.1.2 10+ yrs	
T7 Blue Atlas Cedar <i>Cedrus atlantica 'Glauca'</i>	11	1	390	N 6 E 4 S 5 W 5	3	SM R: 4.67	A: 68.8	Good C: Good S: Poor B: Poor	Historic mechanical damage to lower stem to west leaving open cavity from base to 2m, 150mm at widest point, soft and necrotic timber visible, partial occlusion.		U <10 yrs	
T8 Lawson Cypress <i>Chamaecyparis lawsoniana</i>	13	1	290	N 2 E 2 S 2 W 2	0	SM R: 3.48	A: 38.1	Good C: Good S: Good B: Good	Tight union with lesser stem at 5m.		C.1.2 10+ yrs	
Age Classifications:		N	Newly planted	EM	Early Mature	Condition:		C	Crown	Stems:		Ø Diameter (Eq) Equivalent stem diameter using BS5837:2012 definition
Y		Young		M	Mature	S Stem				ERC: Estimated Remaining Contribution		
SM		Semi-mature		OM	Over Mature	B Basal area						

Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC	
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
T9 Common Yew <i>Taxus baccata</i>	10	3	383 (Eq)	N E S W	3 3 4 2	0	SM R: 4.59	A: 66.3	Good	C: Good S: Good B: Good	No significant features.	B.1.2 20+ yrs	
T10 Norway Spruce <i>Picea abies</i>	17	1	460	N E S W	4 5 6 6	2	SM R: 5.51	A: 95.7	Good	C: Good S: Good B: Good	Pronounced buttresses to west, surface roots visible to east. Stem lean to south of 10° from upright. Crown-lifted to current dimensions leaving stubs up to 30mm diameter and 80mm long. Apical leader historically lost at 14m, lateral limbs have corrected phototropically to become leaders.	B.1.2 20+ yrs	
T11 Western Red Cedar <i>Thuja plicata</i>	20	1	730	N E S W	7 7 4 6	4	M R: 8.76	A: 241.1	Good	C: Good S: Good B: Good	Slight stem and crown bias to northeast. Otherwise, no significant features.	B.1.2 20+ 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 Contribution					

Appendix 3: Tree Constraints Plan

8. Document Production Record

Document number	Editor	Signature	Position	Issue number	Date
Arbtech TSR 01	Jim Green		Arboricultural Consultant	01	27/04/23

Limitations

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