



BS5837:2012

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

Tree Survey

Gordon McQuade

Holly Cottage

Wrotham Road

Meopham

DA13 0AH

3 August 2021

Author: Chris Wren BSc (Hons)

Introduction

Arbtech Consulting Limited (Arbtech) received written instruction on 29th June 2021 from Gordon McQuade to attend Holly Cottage, Wrotham Road, Meopham, DA13 0AH; grid reference, TQ 64357 65959 (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 Tree Constraints Plan.

I am Chris Wren, an arboricultural surveyor for Arbtech Consulting Ltd. I undertook the tree survey on 19th July 2021 and subsequently, have produced this summary of my findings.

I have ten years of industry experience and hold a BSc (Hons) in arboriculture and urban forestry. I am a member of the Arboricultural Association and the Institute of Chartered Foresters.

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	GMA-EXSP1
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 Chris Wren on 19th July 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 21No individual trees, 8No groups of trees, 2No hedges and 1No major shrub groups were surveyed. Details for each of the trees surveyed are provided in the Schedule of Trees (see Appendix 2).

Multiple small saplings exist within the scrub area to the north of Holley Cottage, all of which are >75mm diameter at 1.5m from ground level. Multiple formally maintained shrubs line the southern boundary, all of which are >75mm diameter at 1.5m from ground level.

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

Document	Originator	Reference Number	Title
OS Tile	GJS design consultants	GMA-EXSP1	Existing site plan

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

Two residential houses with attached area of unmanaged land. Site is uniformly level and sits to the south of Meopham village. Four outbuildings occupy the Southwestern quarter of the site

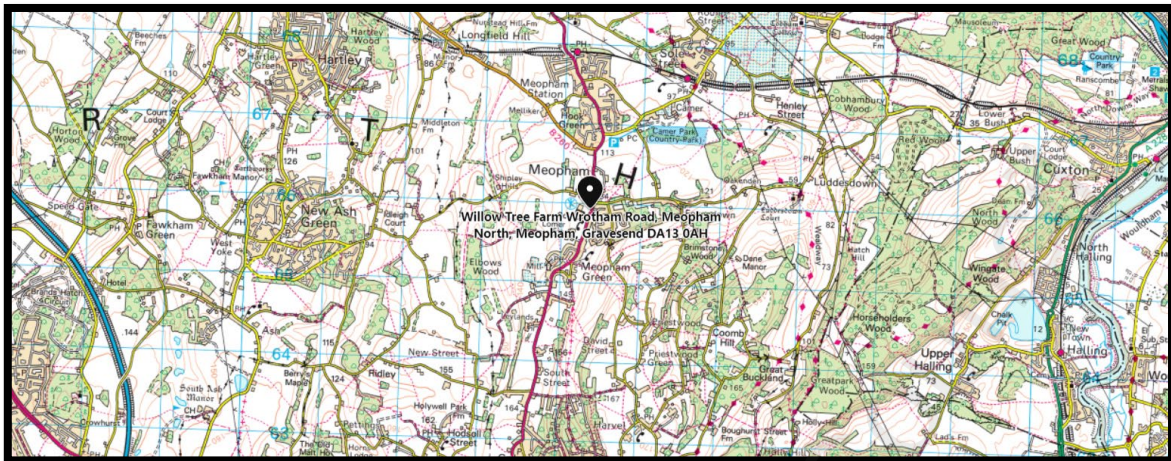


Figure 1: OS Map (Bing Maps)



Figure 2: Aerial Image of Site (Google Maps)

Short description of the proposed development

It is proposed to demolish the northern residence and build 8 residential houses on the northern half of the area and some of the southwestern quarter of the area.

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:

- Sequential reference number (to be recorded on the tree survey plan);
- Species (common and/or taxonomic names);
- Height in meters (m);
- Trunk diameter in millimetres (mm) at 1.5 m above adjacent ground level or immediately above the root flare for multi-stemmed trees;
- Crown (branches) spread in meters taken at the four cardinal and/or intercardinal compass points;
- Height of crown clearance above adjacent ground level in meters (m);
- Age class
- Physiological condition
- Structural condition
- Comments/description of features
- Estimated remaining contribution
- Retention Category as described by application of the BS5837:2012 **Cascade Chart for Tree Quality Assessment (Appendix 1)**

Definitions

Arboriculturist

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

Tree Survey

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

Tree Constraints Plan

A TCP is a plan, typically delivered as an AutoCAD drawing (.dxf or .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

This is a study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

Tree Protection Plan

A TPP is a plan, typically delivered as an AutoCAD drawing (.dwg file format), prepared by an arboriculturist showing the finalized layout proposals, tree retention and tree and landscape protection measures detailed within the arboricultural method statement, which can be shown graphically.

Arboricultural Method Statement

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

Recommendations

With the benefit of making an assessment of your planning proposals, 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/.dxf & .pdf)

If you require clarification of information contained herein, please do not hesitate to contact us via 01244 660558.

Yours Sincerely,



Chris Wren BSc (Hons). Arboricultural Surveyor

Appendix 1: Cascade Chart for Tree Quality Assessment

Cascade Chart for Tree Quality Assessment (BS5837:2012)

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 dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	Light green
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remedial defects, including unsympathetic management and storm damage), such that they are unlikely to be suitable for retention 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: Gordon McQuade
 Project: Holly Cottage
 Survey Date: 19/07/2021
 Surveyor: Chris Wren



Unit 3, Well House Barns
 Chester Road
 Chester
 Cheshire
 CH4 0DH
 Phone: 01244 661170

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			
G01											Estimated Measurements			
Various		15	1	450	N	4	4	M	A: 91.6	Good	C: Good		B.2	
See comments for details					E	4	3		R: 5.39		S: Not visible	Off site group of sycamore and ash. Stems obscured by 2m tall boundary fence and undergrowth. Dimensions recorded represent average for the group.	20+ yrs	
					S	4	2				B: Not visible			
					W	4	3							
G02												Estimated Measurements		
Various		7	1	350	N	3	0	M	A: 55.4	Good	C: Good		C.2	
See comments for details					E	3	0		R: 4.19		S: Not visible	Off site group primarily comprising of hazel and hawthorn. Stems and basal area obscured by undergrowth. Dimensions recorded represent average for the group.	20+ yrs	
					S	3	0				B: Not visible			
					W	3	0							
G03												Estimated Measurements		
Various		2.5	1	100	N	1	0	M	A: 4.5	Good	C: Good		C.2	
See comments for details					E	1	0		R: 1.19		S: Not visible	Major shrub group comprising of rhododendron, roses and St John's wort. Dimensions recorded represent average for the group.	20+ yrs	
					S	1	0				B: Not visible			
					W	1	0							
G04												Estimated Measurements		
Various		7	1	200	N	2	0	EM	A: 18.1	Good	C: Good		C.2	
See comments for details					E	2	0		R: 2.4		S: Not visible	Group of western red cedar, buddleia and lawsons cypress. Stems and basal area obscured by undergrowth and tree crowns. Dimensions recorded represent average for the group.	20+ yrs	
					S	2	0				B: Not visible			
					W	2	0							
Gravesham Borough Council														
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		
G05											Estimated Measurements	
Various <i>See comments for details</i>	6	1	150	N	3	1	M	A: 10.2 R: 1.8	Good	C: Good S: Not visible B: Not visible	Group of plum, buddleia and sweet chestnut. Basal area and stems obscured by and inaccessible due to dense undergrowth. Dimensions recorded represent average for the group.	C.2 20+ yrs
G06											Estimated Measurements	
Various <i>See comments for details</i>	6	1	350	N	3	0	EM	A: 55.4 R: 4.19	Good	C: Good S: Not visible B: Not visible	Off site group primarily comprising of hazel and hawthorn. Stems and basal area obscured by undergrowth and 2m Harris rail boundary fence. Dimensions recorded represent average for the group.	C.2 20+ yrs
G07											Estimated Measurements	
Various <i>See comments for details</i>	15	1	450	N	4	4	M	A: 91.6 R: 5.39	Good	C: Good S: Not visible B: Not visible	Off site group of holly and ash. Stems obscured by 2m tall boundary fence and undergrowth. Dimensions recorded represent average for the group.	B.2 20+ yrs
G08												
Lawson Cypress <i>Chamaecyparis lawsoniana</i>	9	1	200	N	2	0	M	A: 18.1 R: 2.4	Good	C: Good S: Not visible B: Not visible	Group of four lawson's cypress. Multi stemmed habit typical of species, unions not visible due to ivy and proliferation of stems. Basal area and stems obscured by parked cars, ivy and proliferation of stems. Stems diverge at ground level. Dimensions recorded represent average for the group.	C.2 20+ yrs
G09											Estimated Measurements	
Various <i>See comments for details</i>	6	1	200	N	1	0	M	A: 18.1 R: 2.4	Good	C: Good S: Not visible B: Not visible	Off site boundary hedge primarily comprising of hawthorn and holly with areas of ash and buddleia. Dimensions recorded represent average for the group.	C.2 20+ yrs
Gravesham Borough												
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		
H01											Estimated Measurements	
Various <i>See comments for details</i>	3	1	60	N	0.5	0	SM	A: 1.6 R: 0.71	Good	C: Good S: Not visible B: Not visible	Blackthorn hedge. Basal area and stems obscured by undergrowth.	C.2 20+ yrs
H02												
Various <i>See comments for details</i>	2	1	90	N	0.5	0	M	A: 3.7 R: 1.08	Good	C: Good S: Good B: Good	Formally maintained cherry laurel hedge. No significant featured noted at time of survey.	C.2 20+ yrs
T01												
Strawberry Tree <i>Arbutus unedo</i>	3.5	1	110	N	1	0	M	A: 5.5 R: 1.32	Good	C: Good S: Good B: Good	Formally maintained in current dimensions. Multi stemmed habit, as typical of species.	C.2 20+ yrs
T02											Estimated Measurements	
Sycamore <i>Acer pseudoplatanus</i>	15	1	590	N	5	4	M	A: 157.5 R: 7.08	Good	C: Good S: Ivy B: Not visible	Steam and basal area obscured and inaccessible due to ivy and undergrowth.	B.2 20+ yrs
T03												
Strawberry Tree <i>Arbutus unedo</i>	4	2	100 (Eq)	N	2	0	M	A: 4.5 R: 1.19	Good	C: Good S: Good B: Good	Multi stemmed habit typical of species, unions included.	C.2 20+ yrs
T04												
Common Ash <i>Fraxinus excelsior</i>	8	1	200	N	1.5	3	SM	A: 18.1 R: 2.4	Good	C: Good S: Good B: Not visible	Lower 2m of stem and basal area obscured by undergrowth.	C.2 20+ yrs
Age Classifications: N Newly planted EM Early Mature Condition: C Crown Y Young M Mature S Stem SM Semi-mature OM Over Mature 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		
T05												
Common Hazel <i>Corylus avellana</i>	6	7	265 (Eq)	N E S W	4 4 3 4	2 2 2 2	M A: 31.7 R: 3.17	Good	C: Good S: Not visible B: Not visible	Multi stemmed habit typical of species. 40+ stems. Stems diverge at ground level, unions not visible due to prolific number of stems.		C.2 20+ yrs
T06												
Magnolia <i>Magnolia sp.</i>	3	1	100	N E S W	1.5 1.5 1 1.5	1 1 2 1	EM A: 4.5 R: 1.19	Good	C: Good S: Fair B: Good	Rope tied around base of tree, compressing vascular tissues. Asymmetrical crown due to proximity of adjacent shed.		C.2 20+ yrs
T07												
Common or Black Elder <i>Sambucas nigra</i>	5	3	166 (Eq)	N E S W	4 1 0 2	1 2 2 2	M A: 12.4 R: 1.98	Good	C: Good S: Good B: Fair	Asymmetrical crown due to proximity of companion trees.		C.2 20+ yrs
T08											Estimated Measurements	
Austrian Pine <i>Pinus nigra ssp. Nigra</i>	18	1	450	N E S W	5 5 5 5	6 4 4 4	M A: 91.6 R: 5.39	Good	C: Good S: Not visible B: Not visible	Off site tree. Stem and basal area obscured by boundary hedge and out buildings.		B.2 20+ yrs
T09												
Prunus <i>Prunus sp.</i>	5	5	326 (Eq)	N E S W	3 3 3 3	1 2 2 2	M A: 48.1 R: 3.91	Good	C: Good S: Good B: Good	Stems diverge at ground level, unions compressed. Multiple natural braces present in crown. Pruning wound on North side of stem at 0.5m from ground level. Wound 240mm in diameter, no callous wood visible.		C.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

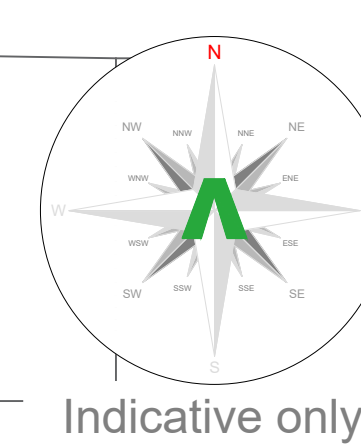
Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment		
T10												
Prunus <i>Prunus sp.</i>	7	5	326 (Eq)	N E S W	3 3 3 3	2 2 2 2	M A: 48.1 R: 3.91	Good	C: Good S: Good B: Good	Stems diverge at ground level, unions compressed. Multiple natural braces present in crown. Wounds on southern side of eastern stem, 1m and 2m from ground level. Wounds approx 140mm diameter, no callous wood visible but epicormic growth (5mm diameter, 50mm long) present around both wounds.		C.2 20+ yrs
T11												
Viburnum <i>Viburnum sp.</i>	5	3	166 (Eq)	N E S W	2 1 3 3	1 1 1 1	M A: 12.4 R: 1.98	Good	C: Good S: Good B: Good	Asymmetrical crown due to proximity of companion trees. Multi stemmed habit typical of species, stems diverge at ground level.		C.2 20+ yrs
T12												
Dawn Redwood <i>Metasequoia glyptostroboides</i>	7	1	210	N E S W	2 2 2 2	4 4 4 3	EM A: 20 R: 2.52	Fair	C: Fair S: Ivy B: Not visible	Ivy on stem to 6m obscuring visual inspection. Crown topped at 2m from stem. No regeneration visible. Remaining foliage appears normal.		C.2 10+ yrs
T13												
wild olive <i>Elaeagnus augustifolia</i>	5	1	190	N E S W	3 3 2 1	2 4 4 2	M A: 16.3 R: 2.27	Good	C: Fair S: Good B: Good	Asymmetrical crown due to proximity of companion trees.		C.2 20+ yrs
T14												
Red Robin <i>Photinia fraseri</i>	5	3	139 (Eq)	N E S W	2 2 2 2	2 3 2 2	M A: 8.7 R: 1.66	Good	C: Good S: Good B: Good	Stems diverge at ground level, union included.		C.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 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		
T15												
Monterey Cypress <i>Cupressus macrocarpa</i>	13.5	1	800	N E S W	6 6 6 6	2 4 4 2	M A: 289.6 R: 9.6	Good	C: Good S: Good B: Good	Stem diverges into approx 10 stems at 2m unions compressed.		B.2 20+ yrs
T16												
Lawson Cypress <i>Chamaecyparis lawsoniana</i>	6	1	190	N E S W	0 1 2 1	SM 2 2 2	A: 16.3 R: 2.27	Good	C: Good S: Good B: Good	Asymmetrical crown due to proximity of companion trees. Crown raised to current dimensions.		C.2 20+ yrs
T17												
Lawson Cypress <i>Chamaecyparis lawsoniana</i>	7	1	270	N E S W	0.5 3 0.5 0	2 2 2	EM A: 33 R: 3.24	Good	C: Good S: Good B: Good	Asymmetrical crown due to proximity of companion trees. Stem bifurcates at 2m union included.		C.2 20+ yrs
T18												
Plum <i>Prunus domestica</i>	5	1	110	N E S W	3 2 0 0	2 2 0 0	EM A: 5.5 R: 1.32	Good	C: Good S: Good B: Good	Asymmetrical crown due to proximity of companion trees.		C.2 20+ yrs
T19												
Lawson Cypress <i>Chamaecyparis lawsoniana</i>	3.5	1	240	N E S W	1 1 1 1	0 0 0 0	M A: 26.1 R: 2.88	Good	C: Fair S: Not visible B: Not visible	Formally maintained as a domed barrel. Previously topped at current dimensions.		C.2 20+ yrs
T20												
Birch 'Youngii' <i>Betula youngii</i>	4	1	300	N E S W	3 3 3 3	2 2 2 2	M A: 40.7 R: 3.59	Good	C: Good S: Good B: Good	Crown previously raised to current dimensions. Wounds >60mm diameter, no visible callous wood. Stem diverges at 2m, cup union formed.		C.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		
T21												
Unknown	5	1	180			SM	A: 14.7 R: 2.16	Dead	C: S: Poor B: Not visible	Dead standing tree.		U n/a
- -												
Gravesham Borough Council												

Appendix 3: Tree Constraints Plan

Note: Existing dwelling(s), retaining wall(s), road(s) and structures are likely to be partial or complete root barriers. We currently do not have enough information with regards to the existing and surrounding properties and structures, foundations, soil types etc. to definitively determine the root barriers. Site features that are significant enough to be considered barriers to root development, irrespective of proximity to trees, have been identified with a light blue hatch (see key for details).

 Tree Categories

Trees are categorised in accordance with the cascade chart in Table 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 - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

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

Category 'C' - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

 Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Areas (RPAs) should be plotted around each of the category A, B and C trees. This is a minimum area of 1 m² which should be left undisturbed around each retained tree.

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

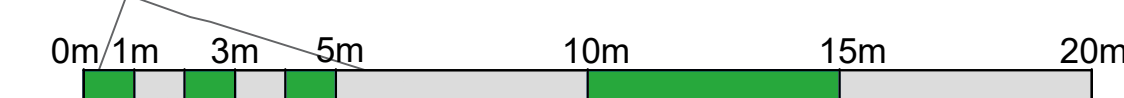
The calculated RPA is capped to 707m², which is the equivalent to a circle with a radius of 15m. Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Tree Survey Report

Please refer to Arblech Consulting Ltd. Tree Survey Report and Tree Schedule for full details on all surveyed trees, hedgerows and major shrub groups.

All trees were surveyed and categorised in accordance with the guidance as set out in the British Standard BS5837:2012 Tree in relation to design, demolition and construction - Recommendations.

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



ARBTECH

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

Project: Holly Cottage
Wrotham Road
Meopham
DA13 0AH,

Client: **Gordon McQuade**

Drawing: **Tree Constraints Plan**

Based on:

GMA-EXSP1

Drawing No: Arbtech TCP 01	Rev:
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Date:	Scale:	Drawn:
July 2021	1:150 @ A0	CMW

Key:

Tree Nos.:	T01	Tree Canopies:		Trunks:	
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Category 'U' trees:		Category 'B' trees:	
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Category 'C' trees:		Category 'C' groups:		Category 'B' groups:	
Potential root					

All dimensions should be checked on site. No dimensions are to be scaled from this drawing.
 Please notify us of any discrepancies found. Arttech Consulting Ltd. cannot be held responsible for inaccuracies
 in the base drawing in which this plan is based.
 This drawing is designed to reflect the principles of the layout or design only, and relates only to the protection of
 retained trees.

This drawing is not to be read as a definitive part of the engineering or construction designs or method statements. An architect or structural engineer should be consulted over any matters of construction, detailing or specification and for any standards or regulatory requirements relating to proposed structures, hard surfacing or underground services.

This drawing was produced in colour - a monochrome copy should not be relied upon.

Document Production Record

Document number	Editor	Signature	Position	Issue number	Date
Arbtech TSR 01	Chris Wren		Surveyor	1	03/08/2021

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