



**BS5837:2012**

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

**Land at Wrexham Road, Abermorddu,  
Flintshire.**

---

**Author: Alan Thompson FdSc (Arb), M Arbor A**

Ian Stevens  
Fisher German LLP  
The Clarke Estate  
c/o Edward Clarke  
4 Vicars Lane  
Chester  
Cheshire  
CH1 1QU

26/07/16

Dear Ian

## **BS5837 Tree Survey – Land at Wrexham Road, Abermorddu, Flintshire.**

---

Fisher German LLP appointed Arbtech Consulting Ltd. in July 2016 to undertake a BS5837 Tree Survey and Tree Constraints Plan at the aforementioned site. Our arboricultural consultant, Mr. Alan Thompson undertook the survey on the 20<sup>th</sup> July 2016; weather conditions were hot, dry & bright. Subsequently we have produced this summary of our findings. Mr. Alan Thompson FdSc has over 7 years experience in both local authority and private practice environments.

### **Tree Survey Executive Summary**

All trees within the property have been surveyed using techniques demanded by BS:5837 2012, Trees in Relation to Construction.

A total of 44 individual trees, four grouped areas of trees and two hedgerows were surveyed. In general the tree stock on site is young to mature in age range.

Management recommendations have been made below where significant defects are suspected to be present.

All of the trees surveyed were in an acceptable or good condition at the time of the survey. No trees were deemed to be in a hazardous or unstable condition.

Individual notes on the tree's structural and physiological condition are found in the Notes section of the survey schedule.

*The following content is for educational and informative purposes; so parts of it are reproduced with the kind permission of BSI Global.*

## **BS5837 Scope**

This standard recognizes that there can be problems of 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.

## **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 m<sup>2</sup>.

## Construction Exclusion Zone (*also termed Tree Protection Zone*)

A construction exclusion or tree protection zone is an area based on the RPA (in m<sup>2</sup>), 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.

## Tree Protection Plan

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

## Arboricultural 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.

## 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.

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

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

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

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

- I. reference number (to be recorded on the tree survey plan);
- II. species (common or scientific names);
- III. height in metres;
- IV. stem diameter in millimetres at 1.5 m above adjacent ground level or immediately above the root flare for multi-stemmed trees;
- V. branch spread in metres taken at the four cardinal compass points;
- VI. height in metres of crown clearance above adjacent ground level;
- VII. age class (young, middle aged, mature, over-mature, veteran);
- VIII. physiological condition (e.g. good, fair, poor, dead);
- IX. structural condition, e.g. collapsing, the presence of any decay and physical defect;
- X. preliminary management recommendations, including further investigation of suspected defects that require more detailed assessment and potential for wildlife habitat; and
- XI. category grading to be recorded in plan on the tree survey plan.

## 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 (PDF)

If you require clarification of information contained herein, please do not hesitate to contact me on 07703 676 216

Yours Sincerely,

A handwritten signature in black ink, appearing to read 'A.S. Thompson'.

**Alan Thompson FdSc (Arb.), M Arbor A**

**Arboricultural Consultant**

## BS5837:2012 Tree Survey

## Arbtech Consulting Ltd.

Client: Fisher German LLP  
 Project: Land at Wrexham Road, Abermorddu, Flintshire.  
 Survey Date: 20/07/2016  
 Surveyor: Alan Thompson



Unit 3  
 Well House Barns  
 Chester Road  
 Chester  
 CH4 0DH  
 Phone: 01244 66 11 70

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
A Group	4	1	130	N	2.5	0.5	Y	A: 7.6 R: 1.55	Good	C: Good S: Good B: Good	Linear boundary screening group is comprised of Hazel, Wild cherry, Rowan, Ash and Elder. Measurements given are estimated averages for the group.	C.1.2	
- -				E	2.5	0.5						>40 yrs	
				S	2.5	0.5							
				W	2.5	0.5							
G2													Estimated Measurements
A Group	7.5	10	221 (Eq)	N	5	1	M	A: 22.2 R: 2.65	Good	C: Good S: Good B: Good	Group is comprised of approximately 25 mature Hazel coppices, interspersed with occasional Hawthorn, Holly and Elder. Measurements given are estimated averages for the group.	B.1.2.3	
- -				E	5	1						>40 yrs	
				S	5	1							
				W	5	1							
G3													Estimated Measurements
A Group	10	1	400	N	4.5	3	M	A: 72.4 R: 4.8	Good	C: Good S: Good B: Good	Group is comprised of 12 Alder and Sycamore trees. Understory is comprised of Holly, Hawthorn, Hazel and Elder. Measurements given are estimated averages for the group.	B.2	
- -				E	4.5	3						>40 yrs	
				S	4.5	3							
				W	4.5	3							
G4													Estimated Measurements
A Group	6	6	171 (Eq)	N	4	0.5	SM	A: 13.3 R: 2.05	Good	C: Good S: Good B: Good	Large group is comprised of Goat willow and Hazel interspersed with Hawthorn, Elder and Occasional Silver birch. Measurements given are estimated averages for the group.	B.2	
- -				E	4	0.5						>40 yrs	
				S	4	0.5							
				W	4	0.5							
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					

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			
H1											Estimated Measurements		
A Hedgerow - <i>Unknown</i>	2	1	80	N	0.7	0.2	M	A: 2.9 R: 0.96	Good	C: Good S: Good B: Good	Fragmented, partially lapsed Hawthorn hedgerow. Measurements given are estimated averages for the group.		C.1.2 20 to 40 yrs
H2											Estimated Measurements		
A Hedgerow - <i>Unknown</i>	2	1	80	N	0.7	0.1	M	A: 2.9 R: 0.96	Good	C: Good S: Good B: Good	Well maintained hedgerow. Predominantly Hazel intersperced with Hawthorn and Holly. Measurements given are estimated averages for the group.		C.1.2 >40 yrs
T1													
Goat Willow <i>Salix caprea</i>	5	6	171 (Eq)	N	3	0.5		A: 13.3 R: 2.05	Good	C: Good S: Good B: Good	Tree of limited amenity value.		C.1 >40 yrs
T2													
Goat Willow <i>Salix caprea</i>	4.5	7	132 (Eq)	N	2	0.5	Y	A: 7.9 R: 1.58	Good	C: Good S: Good B: Good	Tree of limited amenity value.		C.1 >40 yrs
T3													
Common Alder <i>Alnus glutinosa</i>	8.5	3	386 (Eq)	N	3	2	SM	A: 67.4 R: 4.63	Good	C: Good S: Good B: Good			B.1 >40 yrs
T4													
Common Alder <i>Alnus glutinosa</i>	7	2	163 (Eq)	N	4	1.5	Y	A: 12 R: 1.95	Good	C: Fair S: Good B: Good	Tree's crown is suppressed to the south by T3.		C.1 >40 yrs
Age Classifications:	N	Newly planted	EM	Early Mature	Condition:			C	Crown	Stems:	Ø	Diameter	
	Y	Young	M	Mature				S	Stem		(Eq)	Equivalent stem diameter using BS5837:2012 definition	
	SM	Semi-mature	OM	Over Mature				B	Basal area				



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			
T5													
Common Oak <i>Quercus robur</i>	3	1	90	N	0.5	1	Y	A: 3.7 R: 1.08	Fair	C: Fair S: Good B: Good	Tree of limited amenity value. Tree's crown is suppressed by T3.		C.1 >40 yrs
T6													
Common Alder <i>Alnus glutinosa</i>	3	6	49 (Eq)	N	1.5	0.5	Y	A: 1.1 R: 0.59	Good	C: Good S: Good B: Good	Tree of limited amenity value.		C.1 >40 yrs
T7													
Common Ash <i>Fraxinus excelsior</i>	6	1	240	N	3.5	2	Y	A: 26.1 R: 2.88	Good	C: Good S: Fair B: Good	Tree of limited amenity value. Tree's stem has grown through and included adjacent chainlink fencing.		C.1 >40 yrs
T8													
Common Ash <i>Fraxinus excelsior</i>	10	1	250	N	3	2	Y	A: 28.3 R: 3	Good	C: Good S: Good B: Good	Tree of limited amenity value.		C.1 >40 yrs
T9													
Common Ash <i>Fraxinus excelsior</i>	8.5	1	240	N	3	2	Y	A: 26.1 R: 2.88	Good	C: Good S: Good B: Good	Tree of limited amenity.		C.1 >40 yrs
T10													
Lombardy Poplar <i>Populus nigra 'Italica'</i>	22	1	550	N	3	3	M	A: 136.9 R: 6.6	Good	C: Good S: Good B: Good	Offsite tree on neighbouring land could not be fully inspected and the stem diameter measurement given is an estimate.		B.1 >40 yrs
Age Classifications: N Newly planted EM Early Mature Condition: C Crown Stems: Ø Diameter Y Young M Mature S Stem (Eq) Equivalent stem diameter using BS5837:2012 definition SM Semi-mature OM Over Mature B Basal area													

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												Estimated Measurements		
Hybrid Black Poplar <i>Populus x canadensis</i>		20	1	800	N E S W	10 8 6 7	5 5 5 5	M A: 289.6 R: 9.6	Fair	C: Good S: Fair B: Fair		Previous major limb loss has resulted in a large tear wound with decay in tree's stem (east) running from base to 2.5m. Tree's condition should be monitored on a biannual basis. Offsite tree on neighbouring land could not be fully inspected and the stem diameter measurement given is an estimate.		B.1 20 to 40 yrs
T12														
Western Balsam Poplar <i>Populus trichocarpa</i>		20	1	600	N E S W	9 8 7 8	3 3 3 3	M A: 162.9 R: 7.2	Good	C: Good S: Good B: Good		Offsite tree on neighbouring land could not be fully inspected and the stem diameter measurement given is an estimate.		B.1 >40 yrs
T13														
Common Ash <i>Fraxinus excelsior</i>		14	1	580	N E S W	7 7 7 7	3 4 3 3	M A: 152.2 R: 6.96	Good	C: Good S: Good B: Good		Naturally occurring minor deadwood observed in tree's lower crown.		B.1 >40 yrs
T14														
Common Oak <i>Quercus robur</i>		12.5	1	630	N E S W	7.5 7.5 7.5 7.5	3 3 3 3	SM A: 179.6 R: 7.56	Good	C: Good S: Good B: Good				B.1 >40 yrs
T15														
Common Ash <i>Fraxinus excelsior</i>		22	1	890	N E S W	9.5 9 9 8.5	3 3 3 4	M A: 358.4 R: 10.68	Fair	C: Good S: Ivy B: Fair		Veteran tree. Slight apical die back observed in tree's crown. Thick ivy is spreading throughout tree's stem into crown. Erosion of surrounding land with some root damage due to livestock.		A.3 20 to 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	

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			
T16													
Common Ash <i>Fraxinus excelsior</i>	22	1	1100	N	11	3.5	M	A: 547.5 R: 13.2	Good	C: Good S: Good B: Good	Boundary tree could not be fully inspected and the stem diameter measurement given is an estimate. Inonotus hispidus fruiting body observed in major limb in tree's crown (south) at 7m.		A.1 >40 yrs
T17													
Common Ash <i>Fraxinus excelsior</i>	20	1	950	N	10	4	M	A: 408.3 R: 11.4	Fair	C: Good S: Poor B: Fair	Tree's stem has previously failed at point of tight stem union due to included bark. Resulted in major tear wound with major decay running from base to 3.7m. Tree is laying down good amount of reactionary cambium growth around tear wound. Tree's condition should be monitored on a biannual		A.3 >40 yrs
T18													
Sycamore <i>Acer pseudoplatanus</i>	15	2	648 (Eq)	N	8.5	4	SM	A: 190.1 R: 7.77	Good	C: Good S: Good B: Fair	Tight stem union observed at tree's base.		B.1 >40 yrs
T19													
Sycamore <i>Acer pseudoplatanus</i>	14.5	1	450	N	7	5	SM	A: 91.6 R: 5.39	Good	C: Good S: Good B: Good			B.1 >40 yrs
T20													
Common Ash <i>Fraxinus excelsior</i>	12	4	440 (Eq)	N	6	5	SM	A: 87.6 R: 5.28	Good	C: Good S: Good B: Good			B.1 >40 yrs
Age Classifications:	N	Newly planted	EM	Early Mature	Condition:			C	Crown	Stems:	Ø	Diameter	
	Y	Young	M	Mature				S	Stem		(Eq)	Equivalent stem diameter using BS5837:2012 definition	
	SM	Semi-mature	OM	Over Mature				B	Basal area				

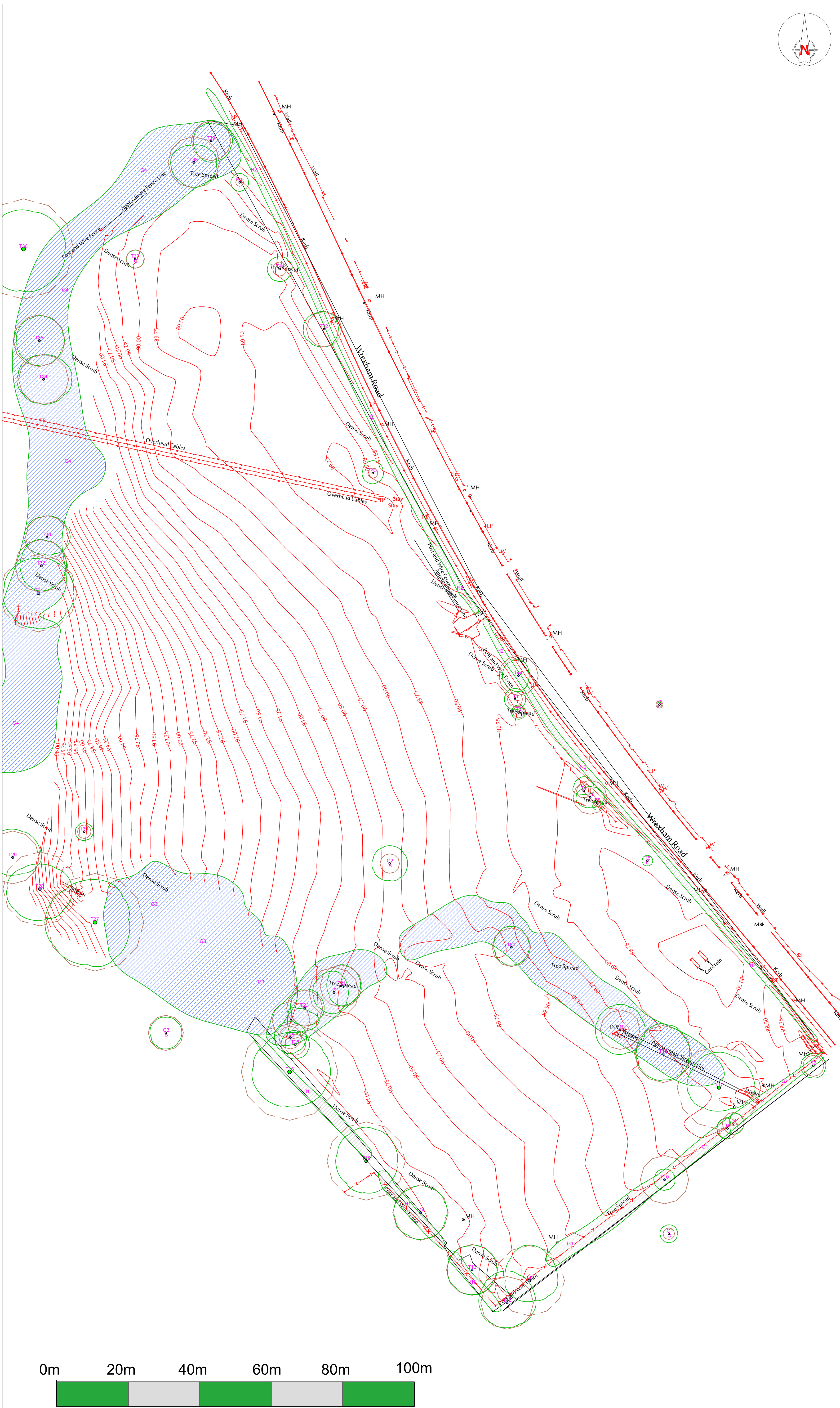
Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations			Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
T21													
Sycamore <i>Acer pseudoplatanus</i>	15.5	1	480	N	6	4	SM	A: 104.2	Good	C: Good			<b>B.1</b> >40 yrs
				E	5.5	4		R: 5.75		S: Good			
				S	5.5	4				B: Good			
				W	4	8							
T22													
Sycamore <i>Acer pseudoplatanus</i>	15	1	570	N	6	4	SM	A: 147	Good	C: Good			<b>B.1</b> >40 yrs
				E	4	8		R: 6.84		S: Good			
				S	6	4				B: Good			
				W	6	5							
T23													
Common Alder <i>Alnus glutinosa</i>	12.5	2	411 (Eq)	N	5.5	4	M	A: 76.5	Good	C: Good			<b>B.1</b> 20 to 40 yrs
				E	5.5	4		R: 4.93		S: Good			
				S	5	4				B: Good			
				W	4	4							
T24													
Common Alder <i>Alnus glutinosa</i>	12	1	430	N	3.5	2	M	A: 83.7	Poor	C: Fair			<b>C.1</b> 10 to 20 yrs
				E	8	2		R: 5.16		S: Fair			
				S	3.5	2				B: Poor		Tree has partially collapsed and has come to rest on T23. Tree is recommended for removal.	
				W	1	10							
T25													
Common Ash <i>Fraxinus excelsior</i>	13	1	260	N	4.5	8	Y	A: 30.6	Good	C: Good			<b>B.1</b> >40 yrs
				E	4.5	7		R: 3.12		S: Good			
				S	4.5	8				B: Good			
				W	4.5	8							
T26													
Common Alder <i>Alnus glutinosa</i>	13	1	240	N	4	5	SM	A: 26.1	Good	C: Good			<b>C.1</b> 20 to 40 yrs
				E	4	4		R: 2.88		S: Good			
				S	4	5				B: Good		Tree of limited amenity value.	
				W	4	5							
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	

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			
T27													
Common Oak <i>Quercus robur</i>	21	1	1110	N	12	2	M	A: 557.5 R: 13.32	Good	C: Good S: Good B: Good	Naturally occurring (shaded out) deadwood observed in tree's crown.	A.1 >40 yrs	
T28													
Sycamore <i>Acer pseudoplatanus</i>	16	1	840	N	7	4	M	A: 319.2 R: 10.07	Good	C: Good S: Good B: Good		B.1 >40 yrs	
T29													
Sycamore <i>Acer pseudoplatanus</i>	14.5	2	601 (Eq)	N	8	3	M	A: 163.7 R: 7.21	Good	C: Good S: Good B: Good	Thick Ivy is spreading throughout tree's stem into crown.	B.1 >40 yrs	
T30													
Common Ash <i>Fraxinus excelsior</i>	5.5	4	154 (Eq)	N	2.5	1.5	Y	A: 10.7 R: 1.84	Good	C: Good S: Good B: Good	Tree of limited amenity value.	C.1 >40 yrs	
T31													
Sycamore <i>Acer pseudoplatanus</i>	19	1	880	N	10	3	M	A: 350.4 R: 10.56	Good	C: Good S: Good B: Good		B.1 >40 yrs	
T32													
Sycamore <i>Acer pseudoplatanus</i>	11	2	601 (Eq)	N	7.5	4	SM	A: 163.5 R: 7.21	Good	C: Good S: Good B: Good	Thick Ivy is spreading throughout tree's stem into crown.	B.1 >40 yrs	
Age Classifications: N Newly planted EM Early Mature Condition: C Crown Stems: Ø Diameter Y Young M Mature S Stem (Eq) Equivalent stem diameter using BS5837:2012 definition SM Semi-mature OM Over Mature B Basal area													

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			
T33													
Sycamore <i>Acer pseudoplatanus</i>	15.5	1	490	N	6	3	SM	A: 108.6	Good	C: Good			B.1
				E	6.5	4		R: 5.87		S: Good			>40 yrs
				S	5	3				B: Good			
				W	6.5	2							
T34													
Common Oak <i>Quercus robur</i>	14	1	570	N	7	4	SM	A: 147	Good	C: Good			B.1
				E	8	4		R: 6.84		S: Good			>40 yrs
				S	7	4				B: Good			
				W	7.5	4							
T35													
Sycamore <i>Acer pseudoplatanus</i>	13.5	1	590	N	7	2	M	A: 157.5	Good	C: Good			B.1
				E	7	2		R: 7.08		S: Good			>40 yrs
				S	7	2				B: Good			
				W	6.5	4							
T36													
Common Ash <i>Fraxinus excelsior</i>	20	1	1140	N	11	4	M	A: 588	Good	C: Good			A.1
				E	12	1		R: 13.68		S: Good			>40 yrs
				S	12	3				B: Good			
				W	12	3							
T37													
Common Alder <i>Alnus glutinosa</i>	5.5	2	210	(Eq) N	2.5	1.5	Y	A: 20	Good	C: Good			C.1
				E	2.5	1.5		R: 2.52		S: Good			>40 yrs
				S	2.5	1.5				B: Good		Tree of limited amenity value.	
				W	2.5	1.5							
T38													
Common Alder <i>Alnus glutinosa</i>	15.5	2	587	(Eq) N	5	7	M	A: 155.9	Good	C: Good			B.1
				E	6.5	3		R: 7.04		S: Good			20 to 40 yrs
				S	7	2				B: Fair		Included bark observed at tree's base at point of tight stem union.	
				W	6.5	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 (Eq)	Diameter Equivalent stem diameter using BS5837:2012 definition	

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			
T39													
Common Alder <i>Alnus glutinosa</i>	15	1	450		N E S W	5 6 6 5	4 3 2 4	M	A: 91.6 R: 5.39	Good	C: Good S: Good B: Good		<b>B.1</b> >40 yrs
T40													
Common Hawthorn <i>Crataegus monogyna</i>	4	3	88	(Eq)	N E S W	2.5 2.5 2.5 2.5	1.5 1.5 1.5 1.5	Y	A: 3.5 R: 1.05	Good	C: Good S: Good B: Good	Tree of limited amenity value.	<b>C.1</b> >40 yrs
T41													
Goat Willow <i>Salix caprea</i>	4.5	7	159	(Eq)	N E S W	3.5 3.5 3.5 3.5	1 1 1 1	Y	A: 11.4 R: 1.9	Good	C: Good S: Good B: Good	Tree of limited amenity value.	<b>C.1</b> >40 yrs
T42													
English Elm <i>Ulmus procera</i>	10	3	402	(Eq)	N E S W	5 4 5 6	3 4 3 2	SM	A: 73 R: 4.82	Good	C: Good S: Ivy B: Good	Thick Ivy is spreading throughout tree's stem into crown.	<b>B.1</b> 20 to 40 yrs
T43													
Goat Willow <i>Salix caprea</i>	3	2	113	(Eq)	N E S W	3.5 3 3 3	0.5 0.5 0.5 0.5	Y	A: 5.8 R: 1.35	Good	C: Good S: Good B: Good	Tree of limited amenity value.	<b>C.1</b> >40 yrs
T44													
Common Oak <i>Quercus robur</i>	8.5	1	450		N E S W	4.5 3 4.5 4.5	4 4 3 4	SM	A: 91.6 R: 5.39	Fair	C: Fair S: Ivy B: Good	Thick Ivy is spreading throughout tree's stem into crown. Slight apical die back observed in tree's crown.	<b>B.2</b> 20 to 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





Tree Categories

Trees are categorised in accordance with the cascade chart in Table 1 of the British Standard BS 5837:2005 'Trees in relation to construction - Recommendations'

Category 'U' - Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.

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

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

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

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Areas (RPAs) should be plotted around each of the category 'A', 'B' and 'C' trees. This is a minimum area in m<sup>2</sup> which should be left undisturbed around each retained tree.

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

The calculated RPA is capped to 707m<sup>2</sup>, 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.



Project:		Land at Wrexham Road, Abermorddu, Wrexham, Flintshire	
Client:		Fisher German LLP	
Drawing:		Tree Constraints Plan	
Based on:		Abermorddu 2D	
Drawing No:		Arbtech TCP 01	Rev:
Date:	Jul 2016	Scale:	1:500 @ A1
		Drawn:	AST
Key:			
Tree Nos.:	T1	Tree Canopies:	
RPAs:		Category 'A' trees:	
Category 'C' trees:		Category 'B' trees:	
<small>All dimensions should be checked on site. No dimensions are to be taken from this drawing. Please notify us of any discrepancies found. Arbtech Consulting Ltd. cannot be held responsible for inaccuracies in the base drawing on 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 design or method statement. An architect or structural engineer should be consulted over any matters of construction, including in 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. © Arbtech Consulting Ltd. 2016</small>			



