

SF2782 Rowley Lane, Lepton

ARBORICULTURAL SURVEY REPORT | BS 5837:2012

Revision D - February 2022

SMEEEDEN FOREMAN

Landscape Architecture • Ecology • Arboriculture

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1.0 Introduction

Smeeden Foreman Ltd has been appointed to undertake an arboricultural survey of trees at Rowley Lane, Lepton.

The survey was undertaken on 13th March 2018 and was based upon topographical survey plan S1096 produced by Turnbull Surveying. The trees have been surveyed in accordance with BS5837:2012. The limitations of survey techniques and analysis are included in Appendix A.

1.1 Site Description

The site is located at Rowley Lane, Lepton (see Figure 1). The overall site comprises farmland which falls steeply in places from north to south. The majority of trees within the site are located within field boundary hedgerows. Great Lepton Wood is a site of Ancient Woodland which is located adjacent to the eastern boundary (see section 3.5 for details).

1.2 Legal status of trees

There are three trees on site which are protected by a Tree Preservation Order (ref: TPO No.02/86). The site is not situated within a Conservation Area (*Information from Digital mapping provided by Kirklees Council, 06.03.2018*). The trees which are subject to the Tree Preservation Order are identified in the survey schedules and on drawing SF2782 TC01.

Trees may be subject to legal protection under a range of other legislation, much of which is aimed at wildlife and habitat protection, particularly nesting birds and bats.

No work should be done to any trees until either suitable permission has been granted or it has been verified that the intended work does not require permission.



Figure 1 – Site location

2.0 Aims and Methodology

2.1 Aims

The aims of the survey are to undertake a non-invasive survey of the identified trees and any trees which have the potential to be affected by future works within the vicinity. The Tree Constraints Plan shows the location and category of the surveyed trees.

2.2 Survey Methodology

The survey was carried out to British Standard 5837:2012 using the categories explained below:

2.2.1 The trees were assessed visually from ground level. Where potential problems were identified, further inspection by tree climbing is recommended. No digging or drilling methods were employed during this survey

2.2.2 The tree numbers or group numbers within the schedules refer to the order in which the trees were recorded and shown on the tree survey plan

2.2.3 The approximate height of each tree is measured from ground level to top of canopy using a clinometer;

2.2.4 The diameter of each tree is measured at 1.5m above ground level. Where a tree stem divides below 1.5m each stem is measured at 1.5m above ground level in accordance with Annex C of the British standard. The diameter of trees where the trunk was inaccessible have been estimated and marked as such within the schedules.

2.2.5 The age of each tree is based upon our experience and is divided into young, semi-mature, early-mature, mature, over-mature.

2.2.6 The water demand of each tree (As listed in table 12, appendix 4.2 – A, NHBC standard chapter 4.2) noted on or adjacent to the site is recorded. Shrinkable soils are subject to changes in volume as their moisture content is altered. Soil moisture content varies seasonally and is influenced by a number of factors including the action of tree roots. The resulting shrinkage or swelling of the soil can cause subsidence or heave damage to foundations, the structures they support or services.

Engineers should consider the soil condition and the potential impact of the species of the trees/hedges on and adjacent to the site when preparing building/structure design.

2.2.7 The physiological condition of the trees is based upon our experience and is an assessment of the health and vigour of the tree.

2.2.8 The structural condition and description is also based on our experience.

2.2.9 Estimated remaining contribution and category/rating of each tree is based on our experience;

2.2.10 The retention category of each tree or group of trees is based upon the information detailed above using the following categories:

- A Trees of high quality and estimated remaining life expectancy of at least 40 years (Light green on plan)**
- B Trees of moderate quality and estimated remaining life expectancy of at least 20 years (Mid blue on plan)**
- C Trees of low quality and estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm Grey on plan)**
- U Trees cannot realistically be retained as living trees in context of current land use for longer than 10 years (Dark red on plan)**

2.2.10 The following subcategories have been used in rating tree value:

- 1 Mainly arboricultural value**
- 2 Mainly landscape value**
- 3 Mainly cultural values, including conservation**

2.3

Key to Survey Schedules

Tree no.	Tree number as recorded on the plan: T1, T2 etc and for tree groups: G1, G2 etc. Hedges: H1, H2 etc. Woodland: W1, W2 etc.
Species	Common name / <i>Scientific name</i>
Height	Overall estimated height of the tree in metres (rounded up to the nearest metre for trees over 10m high).
Stem Dia	Stem diameter measured in millimetres at 1.5m above ground (on sloping ground measured on the upslope of the stem) in accordance with Annex C of BS5837:2012.
Branch spread	Measured in metres (rounded up to the nearest half metre) along the four cardinal points: north, east, south and west to derive an accurate representation of the crown.
Ht crown clearance	The existing height, measured in metres, above ground level of: the first significant branch and direction of growth and the canopy.
Age class:	
Young (Y)	Recently planted or establishing tree. Typified by vigorous growth and distinct apical dominance (definite, discernible leader).
Semi-mature (SM)	Tree that has not reached its ultimate potential height. Phase includes considerable girth thickening and the start of crown spreading.
Early mature (EM)	A tree that is reaching its ultimate potential height. The growth rate is slowing down but the tree, will still increase in stem diameter and crown spread.
Mature (M)	The tree has attained its largest proportions and has reached its ultimate height. The tree is typified by thicker bark plates and a large spreading crown.
Over-mature (OM)	The tree has attained its maximum height and growth rate slows considerably. Characterised by the loss of large limbs, large amounts of deadwood and decay. Limited safe life expectancy.
Water Demand	High, Moderate, Low (As listed in table 12, appendix 4.2 – A, NHBC standard chapter 4.2)
Physiological condition	Good (G), moderate (M), poor (P), dead (D).
Structural condition	Overall form of tree, presence of any decay, any physical defects and observations
Preliminary Management Recommendations	Including any further investigations required, wildlife habitat potential, management or pruning works.
ERC	The estimated remaining contribution measured in years: <10, 10+, 20+, 20-30+, 40+)
Cat	Category U or A to C grading as defined in Table 1 BS 5837: 2012
RPA	Root protection area measured in square metres, calculated according to BS 5837:2012

Other abbreviations used:

N – North

S – South

E – East

W – West

GL – ground level

Asym. – asymmetrical (crown shape)

OSB - Outside site boundary

MS Multi-stemmed

Estimate

3.0 Tree Survey Schedules

3.1 Individual Trees

Tree No.	Tag No.	Species	Height (m)	Branch Spread (m)	Stem Dia (mm)	Ht crown clearance (m)	Age Class	Water Demand	Physiological condition	Structural condition and observations	Preliminary management recommendations	ERC (years)	Cat
TI TPO	0965	Oak <i>Quercus robur</i>	18	N 9 E 10 S 9 W 8	1000	2	M	High	Good	Large branch wound, lower S side. Woodpecker holes in large branch W at 4m. Main branches from 3m. Tear out wound to branch SE at 4m. Deadwood.	No action required	40+	A2
T2	OSB	Cherry	10	N 3 E 5 S 5 W 5	350	1.5	EM	Moderate	Good	OSB. Some crossing branches in crown. Branches from 2m.	N/A	20+	B2
T3	OSB	Apple	7	N 3 E 5 S 5 W 5	250 200	1	M	Moderate	Good	OSB. Tension fork union at 1m.	N/A	20+	B2
T4	OSB	Black pine	16	N 4 E 6 S 7 W 5	550	2	M	Moderate	Good	OSB. Branches from 2m S. No visible defects.	N/A	40+	A2
T5	OSB	Silver birch	12	N 3 E 3 S 3 W 3	200 120 150 100	2 E	SM	Low	Good	OSB. MS. Some lower stem wounds.	N/A	20+	B2
T6	Not tagged	Ash	5	N 2 E 2 S 2 W 2	100	2 E	Y	Moderate	Good	Wire fence included in stem.	No action required	40+	C2

* Shaded schedule indicates tree subject to Tree Preservation Order

Tree No.	Tag No.	Species	Height (m)	Branch Spread (m)	Stem Dia (mm)	Ht crown clearance (m)	Age Class	Water Demand	Physiological condition	Structural condition and observations	Preliminary management recommendations	ERC (years)	Cat
T7	Not tagged	Ash	6	N 2 E 2 S 2 W 2	100 150	2 E	Y	Moderate	Good	MS. Wire fence included in stem.	No action required	40+	C2
T8	OSB	Sycamore	15	N 5 E 5 S 6 W 6	600	6 N	EM	Moderate	Good	OSB. Crown lifted to 5m.	N/A	40+	B2
T9 TPO	0966	Oak	16	N 9 E 8 S 7 W 7	815	3	M	High	Good	Branches from 2m. Lower deadwood. Crossing rubbing branch on lower W side.	No action required	40+	A2
T10 TPO	0967	Oak	12	N 6 E 7 S 6 W 7	880	2	M	High	Good	Pruning work to lower stem with epic. growth forming. Leader has developed slight curve to E.	No action required	40+	A2
T11	OSB	Oak	10	N 6 E 7 S 7 W 7	600	4 E	EM	High	Good	Branches from 3m. Some lower deadwood. Deadwood in top of stem.	N/A	40+	A2
T12	0968	Oak	12	N 7 E 8 S 6 W 5	750	1.5	EM	High	Good	Branches from 2m. Roots visible on surface S side with wounds and decay.	Monitor root decay and check for fungus in autumn	20+	B2

* Shaded schedule indicates tree subject to Tree Preservation Order

Tree No.	Tag No.	Species	Height (m)	Branch Spread (m)	Stem Dia (mm)	Ht crown clearance (m)	Age Class	Water Demand	Physiological condition	Structural condition and observations	Preliminary management recommendations	ERC (years)	Cat
T13	0965	Oak	9	N 10 E 12 S 9 W 7	680	1.5	EM	High	Good	Bark wounds to buttrees S side. Stem kinks to NE at 1m. Reaction wood forming around stem, resulting from fibre buckling (bulge wood - <i>Mattheck</i>). Low spreading crown shape.	No action required	40+	B2
T14	0970	Ash	16	N 7 E 10 S 4 W 7	675	1.5	EM	Moderate	Good	Stem curves over to E. Bark wounds to buttress S side - some decay. Asym. crown - favours N.	No action required	20+	B2
T15	0971	Ash	17	N 6 E 5 S 6 W 8	850	1	M	Moderate	Moderate	Large buttress - some wounds. Large tear out wound and cavity at 4m E.	Removal in context of development	<10	U
T16	0972	Ash	12	N 4 E 6 S 9 W 9	595	1.5	EM	Moderate	Good	Asym. crown - due to competition. Stem has slight curve to SE.	No action required	20+	B2
T17	0973	Oak	12	N 4 E 9 S 9 W 10	700	1	EM	High	Good	Deadwood - branch fracture lower W side. Asym. crown shape - favours S. Minor hanging deadwood. Minor wounds to buttress.	Crown clean.	40+	B2
T18	0974	Oak	8	N 3.5 E 4 S 5 W 7	710	2.5	EM	High	Good	Large vertical wound with decay on E side of stem. Dense growth in crown above.	Removal in context of development	<10	U

Tree No.	Tag No.	Species	Height (m)	Branch Spread (m)	Stem Dia (mm)	Ht crown clearance (m)	Age Class	Water Demand	Physiological condition	Structural condition and observations	Preliminary management recommendations	ERC (years)	Cat
T19	0980	Sycamore	16	N 6 E 5 S 4 W 5	350 280 165	2 N	SM	Moderate	Good	MS. From edge of stream bank. Lower deadwood.	No action required	10+	C2
T20	OSB	Willow	20	N 10 E 10 S 10 W 10	1000 #	10 N	M	High	Good	OSB. Branches have failed on E side - deadwood and wounds throughout remaining crown.	N/A	<10	U
T21	OSB	Ash	25	N 10 E 10 S 10 W 10	900 #	8 N	M	Moderate	Good	OSB. Forks in 2 at 6m - ivy obscured visual inspection of stem and fork union. Large tree which overhangs the site boundary.	N/A	20+	B2
T22	0984	Oak	10	N 5 E 6 S 8 W 6	620	2	EM	High	Good	Tear out wound 3m S - some decay - some deadwood - and on opposite side of stem.	Monitor decay and check for fungus in autumn.	10+	C2
T23	Not tagged	Holly	7	N 3 E 3 S 3 W 3	100 x10	GL	SM	Low	Good	Narrow pyramidal form. MS. Form affected by oak T24.	No action required	10+	C2
T24	0985	Oak	16	N 7 E 8 S 9 W 8	850	I	EM	High	Good	Cavity E at 3m - occluding edges. Deadwood in top of leader with vertical wound down stem. Branch wound E side at 5m - epic. shoots forming.	Crown clean and continue to monitor	20+	B2

Tree No.	Tag No.	Species	Height (m)	Branch Spread (m)	Stem Dia (mm)	Ht crown clearance (m)	Age Class	Water Demand	Physiological condition	Structural condition and observations	Preliminary management recommendations	ERC (years)	Cat
T25	0986	Oak	10	N 5 E 6 S 5 W 6	580	1.5	SM	High	Good	Minor deadwood.	No action required	40+	A2
T26	0987	Oak	10	N 6 E 6 S 7 W 6	760	2	EM	High	Good	Hollow stem with two large cavity openings - Basal cavity opening on E side 450/500mm deep, joins with cavity opening at 2/3m N side of stem. Adaptive reaction wood has formed to edges of cavities. Crown appears healthy.	Removal in the context of development.	<10	U
T27	0988	Oak	16	N 7 E 7 S 9 W 9	740	1.5 N	EM	High	Good	Occluding wound to stem W at 3m. Fractured broken hanging branch lower W side. Deadwood near top of leader. Asym. crown.	Crown clean	40+	B2
T28	0989	Oak	5	N 2 E 1 S 5 W 4	400	1	SM	High	Moderate	Small suppressed tree - extensive basal hollow.	Removal	<10	U
T29	0990	Oak	12	N 7 E 11 S 8 W 10	740	1.5 N	EM	High	Good	Lower pruning stubs N side. Some deadwood.	Crown clean	40+	A2
T30	0991	Oak	15	N 5 E 6 S 7 W 8	690	2	EM	High	Good	Decayed stump in E side of buttress. Tension fork union at 1.8m. Deadwood.	Crown clean	40+	B2

Tree No.	Tag No.	Species	Height (m)	Branch Spread (m)	Stem Dia (mm)	Ht crown clearance (m)	Age Class	Water Demand	Physiological condition	Structural condition and observations	Preliminary management recommendations	ERC (years)	Cat
T31	0992	Oak	17	N 9 E 8 S 10 W 9	750 960	2	M	High	Good	MS at GL. Lower deadwood.	Crown clean	40+	A2
T32	0993	Oak	14	N 7 E 9 S 9 W 12	750	1.5	EM	High	Good	Large lateral branch from base E side. Deadwood. Some tear out wounds to branches. Stem kinks from GL - inclusion on W side of stem may indicate underlying crack in stem.	Remove to facilitate development	20+	B2
T33	0994	Oak	17	N 9 E 10 S 9 W 9	780	1 E	EM	High	Good	Large branch to lower W side with occluding wound. Fractured stubs and pruning stubs to lower crown - with some decay.	Crown clean	40+	B2
T34	0997	Oak	11	N 5 E 7 S 5 W 5	590	2	EM	High	Good	Basal stump with decay S side. Lower crown deadwood.	Crown clean. Monitor extent of decay in basal stump.	20+	B2
T35	0998	Oak	10	N 5 E 6 S 5 W 5	410	2	SM	High	Good	Restricted crown shape due to competition.	No action required	40+	B2
T36	0999	Oak	8	N 5 E 6 S 6 W 7	750 270	2	SM	High	Good	MS. Basal hollow - only shallow but some decay evident. Tension fork unions. Asym. crown shape - favours W. Deadwood.	Crown clean. Monitor extent of decay.	20+	B2

Tree No.	Tag No.	Species	Height (m)	Branch Spread (m)	Stem Dia (mm)	Ht crown clearance (m)	Age Class	Water Demand	Physiological condition	Structural condition and observations	Preliminary management recommendations	ERC (years)	Cat
T37	OSB	Golden cypress	9	N 2 E 2 S 2 W 2	300 #	1.5	SM	High	Good	OSB. Crown lifted to 1.5m.	N/A	20+	B2
T38	OSB	Oak	17	N 2 E 3 S 9 W 5	400 500	2	EM	High	Good	MS at GL. Stump at GL. Some bark stripping evident on branches. Asym. crown shape.	N/A	20+	B2
T39	OSB	Silver birch	8	N 3 E 3 S 3 W 3	200	2	SM	Low	Good	Slight lean to N.	N/A	20+	B2

3.2 Tree Groups

Tree No.	Tag No.	Species	Height (m)	Branch Spread (m)	Stem Dia (mm)	Ht crown clearance (m)	Age Class	Water Demand	Physiological condition	Structural condition and observations	Preliminary management recommendations	ERC (years)	Cat
G1	OSB	Silver birch	12	N 3 E 3 S 3 W 3	150 200	1.5	Y/ SM	Low	Good	OSB. No visible defects.	N/A	20+	B2
G2	0975 0977 0978	Oak Sycamore Oak Willow Silver birch	10	N 6 E 6 S 6 W 6	465 220 340	1	SM	High	Good	MS willow has collapsed with branches lying in the site. Predominantly birch and willow. Oak and sycamore have restricted crowns due to competition. Trees attract collective landscape value.	Remove willow	20+	B2
G3	OSB	Oak	14	N 9 E 10 S 8 W 6	400 300 x2	2	EM	High	Good	OSM. 3 stems - growing from edge of ditch. Lower deadwood.	N/A	40+	B2
G4	Not tagged	Hawthorn	6	N 3 E 3 S 3 W 3	100 ave	GL	SM	High	Good	MS. Typical dense form and habit.	No action required	10+	C3
G5	0981 0982	Sycamore Alder Willow	15	N 5 E 5 S 5 W 5	255 440	1	EM	High	Moderate	Narrow restricted forms. MS. Bark wounds, decay and deadwood. Growing from edge of ditch.	No action required	10+	C2
G6	0983	Sycamore Alder Willow	12	N 9 E 8 S 6 W 11	500 400 800	1	EM	High	Good	Willow collapsed with branches lying in the site and in the crown of sycamore (0983). Sycamore has tension fork union at 1m. Asym. crown affected by competition.	Remove willow and re-inspect sycamore for damage.	10+	C2 U

Tree No.	Tag No.	Species	Height (m)	Branch Spread (m)	Stem Dia (mm)	Ht crown clearance (m)	Age Class	Water Demand	Physiological condition	Structural condition and observations	Preliminary management recommendations	ERC (years)	Cat
G7	Not tagged	Hawthorn Holly	6	N 4 E 4 S 4 W 4	100 to 200	GL	M	High	Good	Remnants of defunct hedgerow. MS. Typical dense form and habit.	No action required	10+	C2
G8	0995 0996 0997	Oak	15	N 7 E 7 S 6 W 6	410 480 485 500	2	SM/ EM	High	Good	3 trees. Asym. crown shapes in competition. Share a common canopy. 0997: MS - tension fork union. Lower branch stubs. Dominates group.	Crown clean	40+	B2
G9	Not tagged	Sycamore Maple Cherry Oak Lime Rowan		N # E # S # W #	100 to 300	1.5	Y/ SM	High	Good	Row of mixed species planted along field boundary. Individual quality of trees is varied - attracts collective landscape value. Some cherry trees are in poor condition with gummosis and included bark unions.	Thin cherry in poor condition. Remove 15m section to facilitate road for development.	40+	B2
G10	OSB	Oak	16	N 7 E 6 S 5 W 5	500 700	2	EM	High	Good	Common canopy. Pruning wounds to lower stem W side.	N/A	40+	B2
G11	Not tagged	Sycamore	18	N 4 E 3 S 6 W 5	280 to 370	2	SM	Moderate	Good	1 x MS. - compression fork unions with included bark. narrow crown spreads.	No action required	10+	C2
G12	Not tagged	Hawthorn	4	N 3 E 3 S 3 W 3	150 ave.	GL	SM	High	Good	Remnants of defunct hedgerow. MS. Typical dense form and habit.	Remove to facilitate development	10+	C2

3.3 Hedges

Tree No.	Species	Height (m)	Width (m)	Stem Dia (mm)	Water Demand	Physiological condition	Structural condition
H1	Hawthorn Holly	1	1	150 ave.	High	Poor	Topped at 1m.
H2	Hawthorn Holly	5	9	150 ave.	High	Good	Overgrown.
H3	Hawthorn Holly Willow	8	10	150 ave.	High	Good	Mostly overgrown. Willow located on opposite side of stream. Overhangs boundary at eastern end of hedgerow.
H4	Hawthorn Holly	4/5	6	Up to 300	High	Good	Overgrown. Occasional large diameter hawthorn. Gaps. Mostly holly at Eastern end of hedgerow.
H5	Hawthorn Holly	5	6	150	High	Good	Mostly Holly. Overgrown.
H6	Hawthorn Holly	5	6	200	High	Good	Overgrown. Gaps.
H7	Hawthorn Holly Oak	6	6	150	High	Good	Overgrown. Gaps.
H8	Hawthorn	1	1	100 ave.	High	Good	Maintained.
H9	Hawthorn Holly	2	1	50 ave.	High	Good	Maintained.
H10	Cypress	2	1	--	High	Good	Maintained.

3.3 Hedges

Tree No.	Species	Height (m)	Width (m)	Stem Dia (mm)	Water Demand	Physiological condition	Structural condition
H11	Cypress	2	I	--	High	Good	Maintained.
H12	Beech	1.5	I	--	Moderate	Good	Maintained.

3.4 Woodland

Tree No.	Tag No.	Species	Height (m)	Branch Spread (m)	Stem Dia (mm)	Ht crown clearance (m)	Age Class	Water Demand	Physiological condition	Structural condition and observations	Preliminary management recommendations	ERC (years)	Cat
W1	Not tagged	Oak Sycamore Silver birch Beech Holly	20+	N 10 E 10 S 10 W 10	500 ave.	I	Y to M	High	Good	Ancient woodland. Diverse age range of trees. Generally in good condition. Predominantly oak/birch woodland with holly understorey. Some areas of sycamore. Occasional large veteran beech trees in close proximity to the edge of the woodland.	No action required	40+	A2

3.5 Summary of trees on site

- 3.5.1 Woodland WI (Lepton Great Wood) is located adjacent to the eastern site boundary. The wood is identified on the *Ancient Woodlands Inventory* as a site of Ancient and Semi-Natural Woodland (<http://www.natureonthemap.naturalengland.org.uk>). See Figure 2 which shows the site in relation to the Ancient Woodland.
- 3.5.2 The standing advice from Natural England and the Forestry Commission is to leave a 15m buffer zone of semi-natural habitat between a proposed development and a site of Ancient Woodland.
- 3.5.3 The woodland comprises predominantly oak and silver birch, with some areas colonised by sycamore. There are several large mature and veteran beech trees located in the woodland which are in close proximity to the site, with branches which overhang the boundary and Root protection Areas (RPA) which lie within the site. The locations of these trees are identified on drawings SF2782 TC02 and 3.

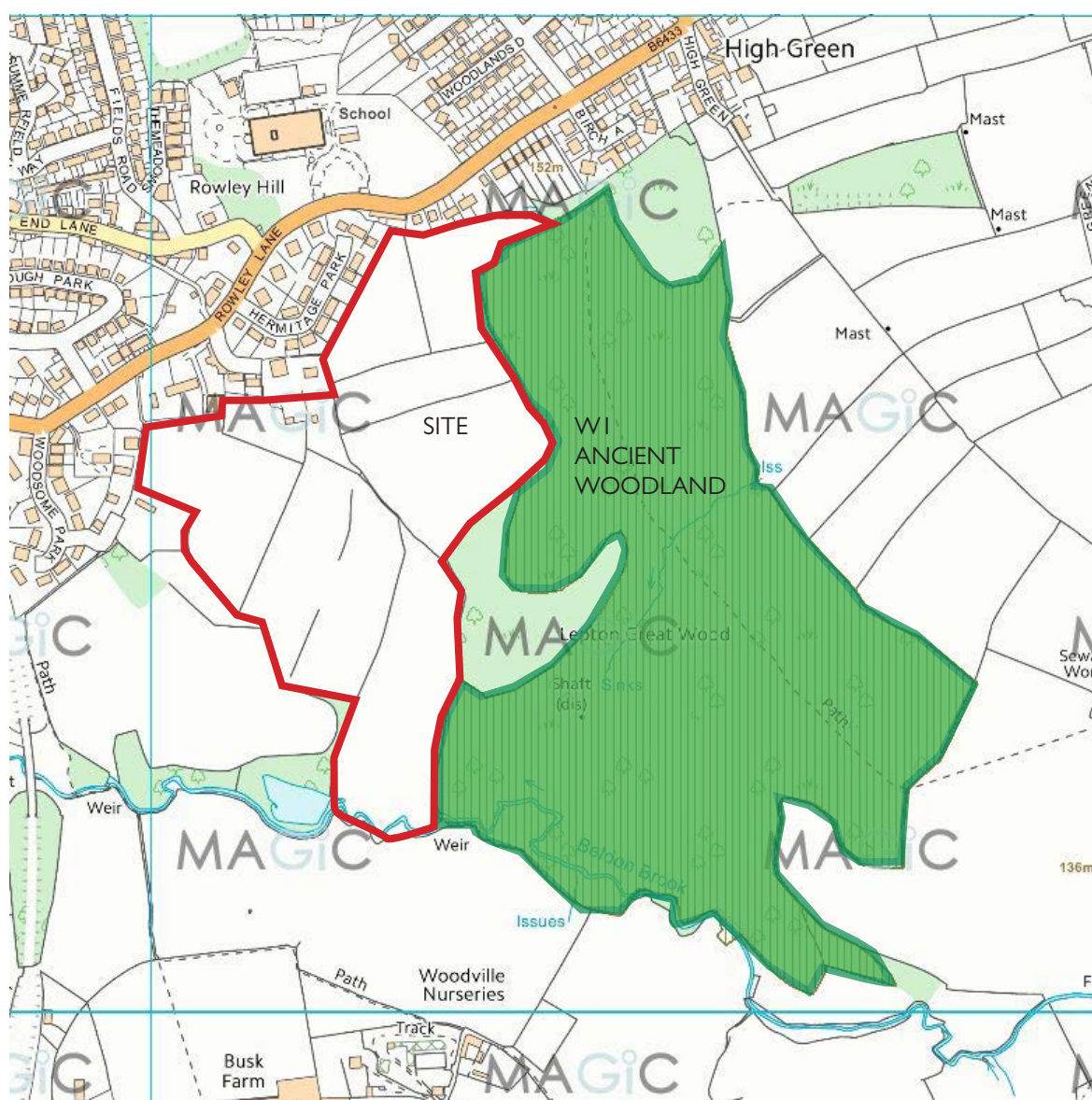


Figure 2 - Extract from *Ancient Woodlands Inventory* adapted to show the site in relation to the Ancient Woodland.

- 3.5.4 Trees T1, T9 and T10 (oak - category A) are mature trees of high quality located on the west side of the site (see photo 1). These three trees are subject to a Tree Preservation Order (ref: TPO No.02/86). Trees T4 (pine - category A) and T11 (oak - category A) are located outside the site adjacent to the western boundary. These are both trees of high quality and value, with crown spreads and RPAs which lie partially within the site boundary.

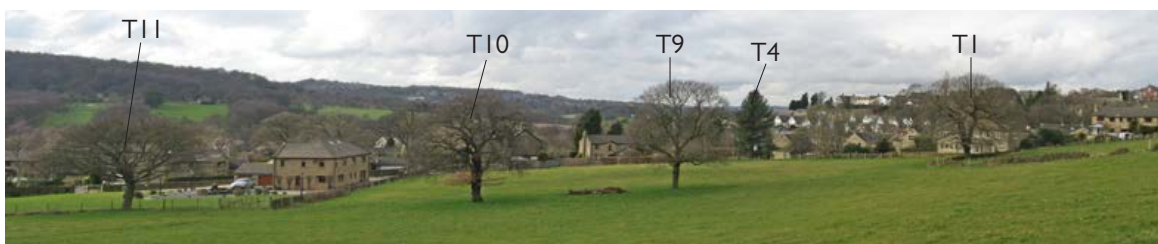


Photo 1 - Showing category A trees located on the west side of the site.

- 3.5.5 Trees T12 to T18 and T22 to T29 are located in the field boundaries and hedgerows on the hillside in the southern half of the site (see photo 2). These trees are early-mature/mature oak and ash which are mostly in good condition and are of moderate to high landscape value. There are however several trees (T15, T18 and T26 - category U) which are in poor condition, with significant defects which would make them unsafe for retention in the context of the proposed development.



Photo 2 - Showing trees located on the hillside in the southern half of the site.

- 3.5.6 Oak tree T26 (category U) has a hollow stem with two large cavity openings (see photo 3). The tree still has approximately one third of its residual sound wood intact, which would normally be considered sufficient for the tree to remain stable, however this does not take into account the two cavity openings in the stem, which may further weaken the structural condition of the tree. Oak trees are known to gradually hollow and T26 could be left in its current land use to naturally decay and retrench, however this tree would pose a risk in close proximity to housing and we would therefore recommend the tree be removed in the context of development.



Photo 3 - Showing cavity openings in T26 oak.

- 3.5.7 Trees T19 to T21 and groups G2 to G6 are located around the stream on the lower ground at the southern end of the site (see photo 4). These trees are mostly low to moderate quality. Some of the trees within G2, G6 and T21 (willow - category U) are in poor condition with large limbs which have collapsed and in some instances have damaged other trees and are lying within the site. Willow is a relatively short lived, fast growing species which has a non durable heartwood with poor resistance to decay and as such is prone to failure.



Photo 4 - Showing trees located at the southern end of the site.

- 3.5.8 Trees T30 to T36 and G8 (oak - category B and A) are located along the field boundary hedgerow (H7) in the northern half of the site (see photo 5). These trees are mostly early-mature oak and ash which are in good condition and are of moderate to high landscape value.



Photo 5 - Showing trees T30 to G8 (oak) located in the northern half of the site.

- 3.5.9 Tree group G9 (mixed species - category B) is located along the field boundary hedgerow (H9) in the northern half of the site. This group comprises young/semi-mature trees which have been planted in a row along the field boundary. Whilst the quality of individual specimens is varied, the trees attract a higher collective landscape value.

3.6 Tree Surgery/Removal

- 3.6.1 Where suggested as 'Preliminary Management Recommendations' within the Tree Survey Report, tree surgery/removal shall be carried out to existing trees on site and shall be in accordance with BS 3998:2010 Recommendations for Tree Work, industry best practice and in line with any works already agreed with the Local Authority.
- 3.6.2 The Tree Surgeon shall be chosen from The Arboricultural Association's Approved Contractor list and all work shall be undertaken at the appropriate time and with the consent and approval of the Site Agent who shall approve a programme of work.
- 3.6.3 Operations shall be carefully carried out to avoid damage to the trees being treated or neighbouring trees. No trees to be retained shall be used for anchorage or winching purposes.
- 3.6.4 If appropriate, it is suggested that the arisings from felled trees are placed within these areas to benefit and encourage habitat diversity.

4.0 Above Ground Constraints

- 4.1 The potential for retaining trees on a development site includes the extent of the influence of the tree at the time of survey. Consideration is also given to the effects of future growth within the context of the proposed development. In addition, the potential nuisance caused by shading to new buildings both after construction and also once trees reach their ultimate size is also considered.
- 4.2 The extent to which a tree may represent a constraint to development will depend both upon the location of the trunk and size and nature of the canopy and also the extent of the roots below ground. The tree constraints drawing (SF2782 TC01) plots the location and extent of the tree above ground.

5.0 Below Ground Constraints

- 5.1 The Root Protection Area (RPA) represents a potential constraint to development which may be modified in pattern, although not overall area, by existing site conditions such as structures and surfaces, soil types and drainage, and an appreciation of the nature of particular tree species and root morphology.
- 5.2 Within the tree root protection area there should be a presumption against excavation, excess vehicular or pedestrian movement, storage of materials, construction, or changes in ground level unless consideration is given to the potential effects on the tree to be retained and the efficacy of any construction techniques designed to reduce adverse effects on the tree.
- 5.3 The tree constraints drawing (SF2782 TC01) plots the location and extent of the tree below ground through application of the calculation provided in section 4.6 of the BS5837:2012 Trees in relation to design demolition and construction – Recommendations.

6.0 Ash Die-Back

- 6.1 *Hymenoscyphus fraxineus* (formerly *Chalara fraxinea*), commonly known as ash die-back, is a fungus which causes leaf loss and crown die-back and usually death of ash trees. First confirmed within the UK in 2012, the fungus has been confirmed widely and poses a devastating effect upon the British landscape. Existing ash should be monitored for symptoms and reported accordingly (www.forestry.gov.uk). If new planting is proposed as part of the development, this should aim to provide a variety of alternative woodland scale tree species such as sycamore, hornbeam, oak, beech and lime.

7.0 Arboricultural Impact Assessment

7.1 Development Proposals

The proposals for the site are for a housing development. The proposals have been assessed in relation to the existing trees on drawing SF2782 TPP01 (Appendix B).

7.2 Summary of proposed tree removal to facilitate development

Tree No.	Species	Proposed Works	Category
T32	Oak	Removal	B2
H1	Hawthorn	Removal of small section to facilitate pumping station	N/A
H6	Hawthorn	Removal of 10m section to facilitate road.	N/A
H7	Hawthorn	Removal of sections to facilitate road.	N/A
H8	Hawthorn	Removal of section to facilitate drainage.	N/A
H9	Hawthorn	Removal of section to facilitate road and drainage.	N/A
G9	Mixed species	Removal of section to facilitate road and drainage.	B2
G12	Hawthorn	Removal	C2

7.3 Summary of proposed access facilitation pruning

Tree No.	Species	Proposed Works	Category
T33	Oak	Access facilitation pruning to south branches over plot 41.	B2
G9	Mixed species	Removal of small section to facilitate pumping station	B2

7.3.1 All pruning to be carried out in accordance with BS3998 Table B.1 – ‘Pruning of selected branches or stems’, ‘To prevent interference between trees and infrastructure, in particular: buildings’. Pruning should be to ‘natural target pruning points’ as outlined in BS 3998:2010 Recommendations for Tree Work, section 7.2.4 and 7.2.5.

7.3.2 The Tree Surgeon shall be chosen from The Arboricultural Association’s Approved Contractor list and all work shall be undertaken at the appropriate time and with the consent and approval of the Site Agent who shall approve a programme of work.

7.4 New tree planting

7.4.1 The removal of trees will be mitigated with replacement tree planting. New planting will diversify the range of tree species on site and provide a sustainable long term population of better quality trees. Appropriate species selection will take account of the mature tree sizes and existing available space and site conditions. This will ensure new tree planting will successfully establish and will have sufficient space (above and below ground) and light requirements to attain a full term healthy life.

APPENDIX A

Tree survey to BS 5837:2012 -Trees in relation to design demolition and construction limitation notes

This survey to BS 5837:2012 is a visual assessment undertaken from ground level without any physical investigation and should be regarded as a preliminary overview of the trees on site. *'This term [visual] describes a general approach to tree surveying using visual observation and recording, combined with experience and knowledge of tree biology and structure to draw conclusions about tree condition'* p8[1]

Observations on structural condition, preliminary management recommendations, (e.g. pruning) and the estimated remaining contribution are based on visual indicators present at the time of inspection (i.e. a single point in time).

It should be noted that numerous potential defects may not be detectable dependent upon timing of inspection, in particular wood decay fungi which may only occasionally produce external fructifications or may not provide external symptoms until an advanced state of invasion is achieved.

Trees are long lived organisms with a significant proportion of growth below ground, (in addition to what is evident above ground) that naturally lose branches and may potentially fail in many ways.

Risk Assessments

Whilst hazards may be identified in this document e.g. a defect *'that may cause harm'*. The risk, (i.e. *'the chance high or low*) *that somebody could be harmed by these and other hazards, together with an indication of how serious the harm could be'* **is not** assessed. [2]

Requirements for ongoing inspections (to monitor observed defects) and risk assessments will be suggested as necessary in the body of the report. The level and frequency of assessment required (in line with HSE advice) will depend on a range of factors for example *'the frequency of public access to the tree'* p4 [3]. A balanced and proportionate approach to tree safety management is advocated in the National Tree Safety Group publication *'Common sense risk management of trees'*. [4]

The health, (condition) and resulting safety of trees for a risk assessment should be checked on a cyclical basis, alternating between early and late seasons to ensure a full picture of the trees current health is established. Therefore the assessment of risk that trees present on a particular site would be additional to the scope of this BS 5837:2012 tree survey.

Arboricultural Impact Assessments, Tree Protection Plans, Method Statements, Tree Management Plans

These items are additional services identified relating to design demolition and construction in BS5837:2012 which may form part of a strategy to manage risks.

NHBC Guidelines

The technical requirements of the National House Building Council Chapter 4.2 Building near trees are not fully met under the requirements of BS BS5837:2012 in relation to shrinkable soils and 'vegetation surveys' (which include hedgerows and shrubs.). p4 [5]

References/ Further reading

[1] The Arboricultural Association Guidance Note 7 Tree Surveys: A Guide to good Practice.

[2] Health and Safety Executive Guidance <http://www.hse.gov.uk/risk/risk-assessment.htm>

[3] HSE guidance on Tree Management SIM01 /2007/05 Management of the risk from falling trees or branches.

[4] National Tree Safety Group Guidance – Common Sense Risk Management of Trees.

[5] National House Building Council Chapter 4.2 Building near trees (Part 4 Foundations).

APPENDIX B

SF2782 TPP01 Tree Protection Plan

