Land off Keresforth Road, Dodworth, Barnsley

Arboricultural Survey

December 2021

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Contents

1 Introduction

1.1.1.1 This report presents the results of an Arboricultural Survey undertaken at the site of Land off Keresforth Road, Dodworth, Barnsley S75 3QY. The study area (see Figure 1) extends to approximately 8.1 hectares and is centred at approximate grid reference SE 3243 0522.

1.1.1.2 The Arboricultural Survey has been undertaken to provide supporting information for proposed development of the site.

1.1.1.3 The Arboricultural Survey included a Tree Constraints Survey which was conducted on13th December 2021 by James Stacey M.Arbor.A and James Blades TechArborA.

Figure 1. Approximate boundary of the proposed development outlined in red (aerial imagery dated 2021).

2 Methodology

2.1.1.1 This arboricultural survey covers those trees or groups of trees which are considered relevant for the brief. During the survey all relevant individual trees and groups of trees located within and close to the boundary of the site were assessed. Trees with an estimated stem diameter of 75 mm or more that overhang the study area or are located within a distance of up to 12 times their estimated stem diameter were included in the survey.

2.1.1.2 The objective of the survey was to collect tree data relevant to the proposed works at the site and to categorise individual trees or tree groups in accordance with BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'1 based on their condition, quality and future potential.

2.1.1.3 The purpose of the categories within BS 5837:2012 is not to determine whether retention of trees is desirable, 'The purpose of the tree categorization method, which should be applied by the arboriculturist, is to identify the quality and value (in a non-fiscal sense) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained in the event of the development occurring.' (BS 5837:2012, Section 4.5.2). This survey should therefore be regarded as an initial appraisal with observations recorded for trees within and adjacent to the site. Remedial tree works, foundation design and material specification are not covered within this report.

2.1.1.4 The location of the trees is shown within the attached Tree Constraints Plan (TCP) (Appendix 3). A detailed inspection of the trees with respect to decay, defects and hazard is not included. The tree locations are as shown on the topographical drawing supplied.

2.1.1.5 The site survey was conducted on 13th December 2021 by James Stacey M.Arbor.A and James Blades TechArborA in accordance with the BS 5837:2012 methodology[1]. The surveyors are appropriately qualified and experienced arborists, having worked in the arboricultural industry for over 16 years, undertaken tree surveys and completed training in BS 5837:2012 survey methodology. Information collected during the survey included species, height, stem diameter, branch spread, height of crown clearance, age class, physiological condition, structural condition, estimated remaining contribution and category grade. The survey was made at ground level using visual assessment of the tree canopy and stem. No removal of vegetation, digging or drilling was undertaken during the survey and parts of the stems of some trees remained partly obscured by vegetation.

2.1.1.6 The TCP in Appendix 3 shows the positions, canopy spreads and Root Protection Areas RPA of the trees included within the survey. The RPA's have been calculated in accordance with Section 4.6 of BS 5837:2012. Where significant ground constraints, such as roads, walls, buildings, water bodies are likely to restrict and influence root development, the RPA circles have been adjusted to form a polygon of equivalent area, in order to show the likely rooting area for trees subjected to significant constraints, in accordance with paragraph 4.6.2 of BS5837:2012.

2.1.1.7 When considering the layout of the site and the retention of trees, proposals should generally be kept outside of both the RPA and the canopy spreads. However, it may be possible to encroach into these with access roads, footpaths and parking areas assuming the existing ground levels can be maintained and the appropriate construction methods are used. No liability can be accepted by Quants Environmental in respect of the trees or for events which happen after the time of the survey.

1 British Standards Institution (BSI) BS 5837:2012. Trees in relation to design, demolition and construction – Recommendations. Published by BSI Standards Limited 2012. ISBN 978 0 58069917 7.

3 Results

3.1.1.1 The survey results are shown in Appendix 2 (Tree Survey Results – Table 1) and Appendix 3 (Tree Constraints Plan). The trees included within this survey comprise of 50 individual trees, 25 tree groups, 3 woodland groups and 1 hedge group.

- 3 individual trees were classified as BS5837:2012 Category A.
- 1 woodland group was classified as BS5837:2012 Category A.
- 16 individual trees were classified as BS5837:2012 Category B.
- 7 tree groups were classified as BS5837:2012 Category B.
- 2 woodland groups were classified as BS5837:2012 Category B.
- 21 individual trees were classified as BS5837:2012 Category C.
- 17 tree groups were classified as BS5837:2012 Category C.
- 1 hedge group was classified as BS5837:2012Category C.
- 10 individual trees were classified as BS5837:2012 Category U.
- 1 tree group was classified as BS5837:2012 Category U.

3.1.1.2 This report is concerned with trees found within the site as well as trees that are up to 15 m from the boundary of which the RPA is likely to encroach within the site. The site is comprised of number of disused agricultural fields, 2 of which are accessible to the public and 2 of which are used for horses. The fields are separated by trees and hedgerows with a small woodland separating the two main fields at the location of a stream. Trees surround the site boundaries in the form of young woodland groups and shelter belt planting on embankments. Species identified within the site consist of ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus*, oak *Quercus robur*, hawthorn *Crataegus monogyna*, cherry *Prunus avium*, birch *Betula pendula,* field maple *Acer campestre*, willow *Salix sp* and elder *Sambuccus nigra*.

3.1.1.3 The site is located along the eastern extent of the residential town of Dodworth and is located approximately 1.6 miles to the west of the city of Barnsley. The site is bordered to the east by the M1 motorway along its full length. The site is surrounded on all other sides by built up land of residential use. Tree cover in the surrounding landscape is considered to be good with a number of woodlands within 2km to the north, west and south of the site.

3.1.1.4 A TPO check was made via Barnsley Metropolitan Borough Council, it was found that there is a woodland TPO covering the woodland group of W2 and a group TPO covering trees within G15. A group TPO also covers trees adjacent Keresforth Road, to the west of the stream at the footpath entrance to the site. This TPO covers T2 within this survey. The site does not fall within a Conservation Area.

3.1.1.5 The most notable arboricultural feature of the site is the woodland of W2. This is a mature woodland with dense canopy cover. The woodland is on 3rd party land and borders the site. It is covered by a TPO designation. W2 is considered to be Category A2.

3.1.1.6 Two mature oak trees are located within a small woodland copse within the southern central part of the site. Both T15 and T16 are large mature oaks which are of an open grown form and present significant value on both a landscape and environmental basis. Both are considered to be Category A trees.

3.1.1.7 A large mature sycamore, T7, is located within a neighbouring garden along the boundary. This is a significantly large tree with high visibility from Keresforth Road. The tree is considered to be in good condition and is therefore considered to be Category A.

3.1.1.8 A large mature oak is located along the access footpath from Keresforth Road. T4 is a large tree with a significantly large stem diameter. Previous limb failures have occurred with old fractured limb failure stubs in the lower crown. There are a number of small cavities forming at old pruning /limb failure wounds along with deadwood in the lower crown. This tree is beginning to develop veteran tree features and is a valuable habitat feature. Although it does not yet present full veteran features, it is likely to become veteran and will provide a valuable future ancient tree. T4 is therefore considered at present to be Category B3.

3.1.1.9 Adjacent to T7 is T6, a large mature sycamore. This tree is as large as T7 and has similar visibility, however, there is dieback of the outer crown with deadwood forming. T6 is therefore considered to be Category B.

3.1.1.10 Along the access footpath from Keresforth Road are a number of large mature trees, which present good value canopy along this section of the site. T1, T2 and T10 are all in reasonable condition. T1 and T2 are both ash which do not exhibit obvious signs and symptoms of ash dieback, however the survey was carried out in the winter months. T10 is a large mature sycamore exhibiting fair to good condition. All are considered to be Category B trees.

3.1.1.11 Trees T12, T13, T14 and trees within G13 and G14 are located within and form a small woodland copse over a steep sided land form. This presents a valuable habitat feature and area of mature canopy with a diverse range of canopy age. Understorey trees provide good structure to the group. All except T14 are considered to be Category B.

3.1.1.12 Trees T28 – T48 and trees within G18 – G22 are located within the central section of the site between the two large open fields. These trees form a small woodland area over the stream which intersects the site. Overall this presents a valuable habitat feature and is a significant area of mature canopy for the central part of the site. A number of willows are located within the group which have collapsed or are in a poor structural condition, however they provide the small woodland with valuable deadwood habitat. The majority of trees here are Category B with smaller understorey trees designated as Category C. Failed and damaged trees have been classified as Category U for arboricultural purposes, however, they still provide valuable environmental benefits.

3.1.1.13 Along the western boundary are continuous woodland groups with young to early mature trees. Both W1 and W3 present the boundary with a dense area of mature canopy and screen the site from the adjacent residential areas. Trees in W1 are all located on a steep embankment. Both woodland groups have a high proportion of ash and this may lead to thinning of the canopy in the future as ash trees succumb to ash dieback disease *Hymenoscyphus fraxinea*. Both groups are considered to be Category B.

3.1.1.14 Trees along the eastern boundary are a mix of species, predominantly oak, all are considered to be young to early mature trees. All are located beyond the site boundary and are on the embankment to the motorway. Trees in G12 and G25 are considered to be Category B.

3.1.1.15 Trees within G9 are all located centrally within the site and are growing out of an old haha wall. All are ash and there is evidence of early signs of ash dieback. All are self sown trees with many in a poor growth form and are either growing out of the wall or from the base, damaging the structure in some places. Trees in G9 are considered to be Category C.

3.1.1.16 Two large mature trees are in a poor structural condition and are considered to be Category U. T8 is a large mature horse chestnut *Aesculus hippocatanum*, there is a large decay cavity at the base and the tree has been colonised by honey fungus *Armillaria mellea*. T11 is a large ash which has suffered significant limb/stem failures and has large decay cavities, further collapse of the stems is anticipated.

3.1.1.17 All remaining trees and tree groups are generally in the form of young self sown trees or unmanaged hedgerows across the site. All are considered to be Category C.

4 Conclusions and Recommendations

4.1.1.1 During the survey 50 individual trees, 25 tree groups, 3 woodland groups and 1 hedge group were surveyed (refer to Appendices 2 and 3).

4.1.1.2 Trees are located throughout the site and it is likely there will be considerable constraint to development due to the trees.

4.1.1.3 Trees along the boundaries to the site, such as woodland groups of W1, W3 and tree groups G12 and G25 are not considered to present significant constraint upon development due to their location along steep embankments and their generally small stem size. It is recommended that a green margin is considered to provide a stand off from the boundaries, however significant encroachment of RPAs into the site is not likely.

4.1.1.4 The woodland group of W2 will require designs to provide a suitable stand off to prevent any construction within the RPAs of these trees. The woodland is protected by TPO and RPAs must therefore be protected.

4.1.1.5 Significant constraint upon development and designs from trees will occur along the access track from Keresforth Road. There are significant trees in this location, many with large stem diameters leading to overlapping RPAs. Careful design will be required to ensure retention of as many mature trees as possible can occur.

4.1.1.6 The central woodland over the stream will also present significant constraint upon development. This will be required as a link between the two fields and will likely result in the loss of trees and the fragmentation of the woodland.

4.1.1.7 Large Category U trees should be considered for retention where possible following remedial works such as pollarding, to retain standing deadwood habitat.

4.1.1.8 All retained trees will require protection of their RPA's and canopies during any development of the site.

4.1.1.9 When a proposed site plan is available, an Arboricultural Impact Assessment should be completed to determine the impact of the development on the trees on site. The information presented in this report should be used to inform the layout of the development. Further survey work may subsequently be required in order to inform the development and to guide mitigation options.

4.1.1.10 An Arboricultural Tree Protection Plan and Working Method Statement should be produced prior to works commencing on site. This should be informed by the Arboricultural Impact Assessment based on the final site layout. The Arboricultural Tree Protection Plan and Working Method Statement should cover detailed methods for construction and operation within any of the RPAs in order to minimise the potential for adverse effects on these trees, e.g. digging using hand tools and supervision by a suitably qualified arboriculturist, in accordance with BS5837:2012. During supervised work within the RPAs and canopies, if trees are considered to become unsafe (e.g. due to unavoidable severance of significant roots), such trees may need to be felled by a qualified tree surgeon. Any such loss of trees should be mitigated where practicable with replacement tree planting on site, to be agreed with the Local Planning Authority. The Arboricultural Tree Protection Plan and Working Method Statement should cover compensation planting as required.

4.1.1.11 Detailed methods for construction and operation should be developed in order to minimise the potential for adverse effects on trees.

4.1.1.12 Where appropriate, all the trees to be retained should be protected with a tree protection fence in line with BS5837:2012 current recommendations.

4.1.1.13 The loss of any trees should be mitigated where practicable with suitable replacement tree planting on site, to be agreed with the Local Planning Authority. Any new landscaping should be maintained to promote longevity.

Appendix 1. Photographs

Image 1 – Trees in W2

Image 2 – Trees T6 – T8 (T6 right, T8 left)

Image 3 – Rhizomprphs of honey fungus on T8.

Image 4 – Looking SW to Keresforth Road with T4 (right) and T5 (left) in foreground.

Image 5 – Trees in central woodland

Image 6 – Internal view of trees in centeal woodland

Image 7 – Looking S to trees in W1

Image 8 – Trees within W3

Image 9 – Trees in G12 along E boundary

Image 10 – Trees in G9 on haha wall

Appendix 2. Tree Survey Results – Table 1

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
T1	Ash	21	8	6.5	8	7.5	2.5	530	M	F	F	Mature ash, no obvious signs of ash dieback, surveyed in winter. Crown suppressed to NW from neighbouring tree with crown growth over road and public footpath.	Retain where possible.	10+	B1	6.36	127.09
T2	Ash	22.5	10	7.5	7	6.5	4	600	M	F	F	No obvious signs of ash dieback, surveyed in winter. Heavy ivy colonisation on stem and into crown break, makes inspection difficult, stem located on adjacent bank of stream.	Requires ivy removal and eta Ilex assessment and inspection if to be retained.	10+	B1	7.2	162.88
T3	Ash	9	4.5	1.5	6.5	5.5	2	260	EM	F	F	Self sown tree located adjacent entrance onto public footpath. Tree is heavily suppressed with poor growth form leaning over road, damage and cavities on main stem.	Retain or remove as per development plans	10+	C1	3.12	30.59
T4	Oak	19	9	6	9.5	9	2.5	1110	M	F	F	Large mature oak with large stem diameter. Failed branches and limbs in lower canopy with cavities and openings. Deadwood in lower crown. Large tear out wound in mid	Retain	20+	B3	13.32	557.46

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
												crown at 10m. Tree is exhibiting veteranising features.					
T5	Ash	18.5	7	6	5.5	6	3	560	M	F	F	Mature ash, no obvious signs of ash dieback. Tear out cavity in main crown fork union with potential decay progression into stem, potential weak point. Moderately sized tree with limited visibility.	Retain or remove as per development plans	10+	C1	6.72	141.89
T6	Syacmore	19.5	8	6	10	9	4	850*	M	F	F	Third party tree, large mature tree with good visibility from external areas. Deadwood in upper canopy due to dieback of outer crown	Retain	20+	B2	10.2	326.89
T7	Sycamore	21.5	8.5	4	5.5	8	5	800*	M	F	F	Large mature tree, no obvious defects or signs of ill health identified. 3rd party tree, with significant visibility from external areas.	Retain	30+	A2	9.6	289.57
T8	Horse chestnut	21	7.5	8	3.5	8	1.5	1000	M	F	P	Large mature tree, open cavity at base of stem with significant hollowing of stem base, buttresses on east have decay and are beginning to rot. Rhizomorphs of honey fungus found on stem with decay of cambial and heart wood from outer stem side as	Remove where located close to development	<10	U	12	452.45

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
												well as from internal hollowing. Potential for significant weakening of stem. Damage and limb failure throughout canopy also.					
T9	Cherry	15	5	5	5	5	2.5	250	EM	F	F	Tall cherry, woodland tree. No obvious defects or signs of ill health identified. Limited visibility in wider landscape,	Retain where possible	20+	B1	3	28.28
T10	Sycamore	18	8	3.5	10	6	0	780	M	F	F	Mature tree located on top of embankment, no obvious defects or signs of ill health identified.	Retain	20+	B2	9.36	275.27
T11	Ash	19.5	7	5	4.5	4	3	890	M	P	P	Mature tree, with multiple large limb failures, significant damage and openings in main tree structure, evidence of decay and hollowing of stem at base with open cavity.	Consider rentention following reduction works	<10	U	10.68	358.38
T12	Oak	11.5	3.5	4	1	3.5	4	300	EM	F	F	Tree in woodland copse, tall canopy, deadwood in lower crown and uneven form.	Retain	20+	B1	3.6	40.72
T13	Field maple	12.5	4	5.5	2.5	4.5	2	380	M	G	G	Tall slender maple, due to location in woodland copse. Minor deadwood, no obvious defects or signs of ill health identified	Retain	20+	B1	4.56	65.33

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
T14	Hawthorn	7	1	2	4	4	3	230	M	F	F	Small suppressed hawthorn beneath T15. Poor form.	Retain	10+	C1	2.76	23.93
T15	Oak	17.5	8.5	6.5	9	8.5	2	930	M	G	G	Large mature oak in woodland copse. Dominating tree within copse, deadwood lower crown. Good open grown form.	Retain	30+	A2	11.16	391.32
T16	Oak	18.5	6.5	5.5	5.5	7	3	710	M	G	G	Large mature oak in woodland copse, dominating feature, no obvious defects or signs of ill health identified. Good open grown form.	Retain	30+	A2	8.52	228.08
T17	Hawthorn	10	3	1.5	3	3	1.5	250	M	F	F	Field edge tree, poor form with suppression to north. Growing through the fence.	Retain or remove as per development plans	10+	C1	3	28.28
T18	Oak	8	3.5	3.5	3.5	3.5	2	290	EM	F	F	Small oak at edge of field, adjacent footpath. Suppressed form.	Retain or remove as per development plans	10+	C1	3.48	38.05
T19	Hawthorn	7	2.5	2.5	2.5	2.5	1.5	150, 180	EM	F	F	Self sown tree growing on and through fence line, poor form.	Retain or remove as per development plans	10+	C1	2.8	24.80

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
T20	Hawthorn	7	2	2	2	2	1.5	160	EM	F	F	Self sown tree growing on and through fence line, poor form.	Retain or remove as per development plans	10+	C1	1.92	11.58
T21	Hawthorn	6	2	2	2	2	1.5	180	EM	F	F	Self sown tree growing on and through fence line, poor form.	Retain or remove as per development plans	10+	C1	2.16	14.66
T22	Cypress	9	2	2	2	2	0	250*	M	F	F	Cypress on boundary to horse paddock, no access.	Retain or remove as per development plans	10+	C1	3	28.28
T23	Oak	11.5	4.5	4	5	3.5	2.5	330, 260	EM	F	F	Young twin stemmed oak, no obvious defects or signs of ill health identified.	Retain where possible	20+	B1	5	79.90
T24	Cherry	5	3	3	3	3	1.5	130	Y	F	F	Young cherry in shrub bed,	Retain	20+	C1	1.56	7.65
T25	Cherry	10	4	4	4	4	1.5	320	M	G	G	Cherry located in landscaped grass area, no obvious defects or signs of ill health identified.	Retain	20+	B1	3.84	46.33
T26	Apple	4	2.5	2.5	2.5	2.5	1	120	Y	G	G	Young tree in grass verge, no obvious defects or signs of ill health identified.	Retain	20+	C1	1.44	6.52

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
T27	Birch	9	3	3	3	3	1	220	EM	G	G	Tree adjacent footpath on grass verge, no obvious defects or signs of ill health identified.	Retain	20+	B1	2.64	21.90
T28	field maple	18	2	7	4	6	1	630	M	G	F	Large spreading maple near boundary, co-dominant from base with heavy contact between stems crown break at 2 m into multiple limbs, visible from motorway	Retain	20+	B2	7.56	179.58
T29	Willow	18	9	4	4	4	0.5	390x340	M	F	P	Mature willow co dominant from the base, west growing limb has partially collapsed with a shear crack, remaining upright stem has a large wound with decay on the east side with significant hollowing of the stem	Remove	<10	U	6.2	121.10
T30	Willow	16	10	2	2	2	2	270x250	M	F	F	Slender willow with very heavy lean to the west over the footpath, moderate deadwood, no obvious defects	Consider removal if foot traffic along footpath increases	10+	C1	4.4	61.30
T31	Willow	20	2.5	10	5	10	1.5	770	M	F	P	Large mature willow, tree is hollow with a large opening on the east side, tree is in a stage of collapse with junction failure on all main limbs, large limb	Consider retention due to habitat potential	<10	U	9.24	268.26

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
												is hung up In adjacent oak, potential wildlife value due to cavities					
T32	Willow	20	10	10	2	2	2	490	M	F	F	Large willow in small woodland adjacent to stem, single large limb has failed due to decay at 1.5 m, primary upright stem appears to be stable but is heavily weighted and leaning to the west	Retain or remove as per development plans	10+	C1	5.88	108.63
T33	Willow	12	15	2	8	2	0	420	M	P	P	Collapsed tree overhanging footpath	Remove	<10	U	5.04	79.81
T34	willow	16	6	8	6	6	0	700	M	F	P	Partially collapsed willow, large hangers and deadwood	Retain were possible for ecological value	<10	U	8.4	221.70
T35	willow	14	4	10	4	4	0	380	M	F	P	Partially collapsed willow, heavy deadwood	Retain were possible for ecological value	<10	U	4.56	65.33
T36	oak	14	4	4	4	4	3	280	M	F	F	Small oak heavily suppressed by larger willows, stem splits into two widely spaced stems at 3 m	Retaian where possible	10+	C2	3.36	35.47
T37	Hawthorn	7	3	3	3	3	0.5	150	SM	F	F	Small hawthorn part of understorey, heavily suppressed by willows	Retain where possible	10+	C2	1.8	10.18

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			W	N	S	E											
T38	Willow	20	4	9	2	4	0	380	M	F	P	Partially collapsed willow, several broken limbs and previous failures	Retain were possible for ecological value	<10	U	4.56	65.33
T39	Willow	15	1	10	1	10	0	490	M	F	F	Mature willow with heavy lean to the north east, some collapsed limbs at ground level	Retain were possible for ecological value	<10	U	5.88	108.63
T40	Willow	20	5	5	5	5	8	450	M	F	G	Slender tall willow, slight lean to the south, no obvious defects	Retain or remove as per development plans	10+	C1	5.4	91.62
T41	Sycamore	20	2	5	2	5	0	370	M	G	G	Slender sycamore adjacent to beck, tree is in good condition and form, partially suppressed by T16	Retain	20+	B2	4.44	61.94
T42	Oak	17	4	8	1	4	3	390	M	G	F	Mature oak in woodland area, suppressed by T16 with subsequent lean to the north away from larger tree, some large pieces of deadwood	Retain where possible	20+	C1	4.68	68.82
T43	Oak	15	8	8	2	2	1	180	EM	G	F	Small oak suppressed by T17, some basal damage and deadwood	Retain or remove as per development plans	10+	C2	2.16	14.66
T44	Willow	20	2	8	3	10	2	520x470	M	G	F	Large willow adjacent to beck, suppressing several other trees, large limb failure at 1 m north side leaving	Retain where possible	10+	C1	8.4	223.00

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			W	N	S	E											
												large open wound, moderate deadwood throughout crown					
T45	Willow	20	5	8	4	8	1	340x290x320x270	M	G	F	Willow multistemmed from base, some large pieces of deadwood, suppressing some other trees	Retain where possible	10+	C1	7.3	169.70
T46	Willow	20	2	2	10	2	5	520	M	F	P	Large willow adjacent to beck, appears to have partially collapsed to the south possibly due to erosion by the beck/stream, leaning on several trees to the south, large pieces of deadwood	remove	<10	U	6.24	122.34
T47	Willow	20	8	8	8	8	3	640	M	F	F	Large spreading willow adjacent to beck, large limb failure at 4 m north side due to included union, moderate deadwood throughout crown	Retain where possible	10+	C1	7.68	185.32
T48	oak	18	3	8	8	8	0	420	M	G	F	Mature oak within G5, spreading crown formed by long slender limbs, moderate deadwood, stem begins as two individual stems which meet and fuse at 1 m leaving a gap	Retain	20+	B2	5.04	79.81
T49	Oak	12	7	7	2	7	1	base 650	M	G	F	One of two multistemmed spreading oak trees by field entrance,	Retain	20+	B2	6.5	132.70

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
												some damage and vandalism, moderate deadwood, knurled feature visible frome surrounding area					
T50	Oak	12	7	2	7	7	1	base 700	M	G	F	One of two multistemmed spreading oak trees by field entrance, some damage and vandalism, moderate deadwood, knurled feature visible frome surrounding area	Retain	20+	B2	7	154.00
G1	Sycamore, ash, cypress	14.5	5	5	5	5	2	250	EM	F	F	Line of self sown trees along top of retaining wall construction. Damage throughout.	Retain or remove as per development plans	10+	C1	3	28.28
G2	Ash, elder, laurel, elm	10	3	3	3	3	0	150	Y-EM	F	F	Area of self sown young trees, all densely growing within unmanaged area of ground.	Retain or remove as per development plans	10+	C1	1.8	10.18
G3	Ash, oak, elder, hawthorn	13.5	4.5	4.5	4.5	4.5	1	300	EM-M	F	F	Group of trees mixed species located on steep embankment down to stream. Trees located up to top edge of embankment only.	Retain where possible	20+	B1	3.6	40.72
G4	Oak	10	2.5	2.5	2.5	2.5	1.5	100	Y	F	F	Area of young oak saplings.	Retain or remove as per development plans	20+	C1	1.2	4.52

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
G5	Ash, elder, hawthorn	12	3.5	3.5	3.5	3.5	0	max 250	EM	F	F	Group of predominantly ash self sets on embankment. No obvious signs of ash dieback but disease is likely to have colonised trees in group.	Retain or remove as per development plans	10+	C1	3	28.28
G6	Hawthorn	9	4	4	4	4	0	max 200	M	F	F	Overgrown hawthorn hedge.	Retain where possible with management	20+	C1	2.4	18.10
G7	Ash	11	4	4	4	4	1	280	EM	F	F	2x self sown ash with signs of ash dieback disease.	Remove	<10	U	3.36	35.47
G8	Ash, hawthorn	8	2	2	2	2	0	150 max	Y	F	F	Group of self sown trees within grassed area, ash exhibit signs of ash dieback.	Remove to facilitate development	10+	C1	1.8	10.18
G9	Ash	15	4.5	4.5	4.5	4.5	1	200-400	EM	F	F	Line of self sown as trees, all are growing out of a ha ha wall and in places are causing damage to the structure. many are multi stemmed. All are showing early signs of ash dieback.	Retain or remove as per development plans	10+	C1	4.8	72.40
G10	Elder	8	3	3	3	3	0	200 max	M	F	F	Dense area of elder scrub, unmanaged and generally of poor form and quality.	Retain or remove as per development plans	10+	C1	2.4	18.10

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
G11	Blackthorn	5	2	2	2	2	0	max 100	Y	F	F	Dense area of blackthorn scrub at edge of woodland area.	Retain or remove as per development plans	10+	C1	1.2	4.52
G12	Oak, hawthorn	11	3.5	3.5	3.5	3.5	0	200	EM	G	G	Line of trees located on highways side of fence. Young oak trees and hawthorn. All act as a noise barrier and visual screen to the motorway.	Retain	30+	B2	2.4	18.10
G13	Elm	17	4.5	4.5	4.5	4.5	1.5	240	EM	F	F	Group of 4 even aged elms within woodland copse. 1 tree has failed at base and fallen into field.	Remove failed tree.	20+	B1	2.88	26.06
G14	Oak, hawthorn	12	4	4	4	4	0	max 200	EM	G	G	Group of trees, mostly young oak with hawthorn understorey forming small woodland copse over small valley landform. Good area of diverse aged canopy.	Retain	30+	B2	2.4	18.10
G15	Sycamore	6	2.5	2.5	2.5	2.5	1.5	400*	M	F	F	Pollarded trees within horse paddock boundary, no access.	Retain or remove as per development plans	10+	C1	4.8	72.39
G16	Sycamore, ash	10	3	3	3	3	1.5	150 max	Y	F	F	Group of self sown trees on boundary, all slender stems.	Retain or remove as per development plans	10+	C1	1.8	10.18

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
G17	Ash, hawthorn, elder	10	4	4	4	4	0	300	M	F	F	Mixed species boundary vegetation, all unmanaged and in generally poor form and condition.	Retain where possible with management	10+	C1	3.6	40.72
G18	Oak, sycamore, elm	18	4	4	6	4	2	max 350	M	G	F	Dense group of broadleaf trees, Minor general damage to tree stems with some standing deadwood, deadwood throughout, tall slender trees, visible from within site	Retain	20+	B2	4.2	55.42
G19	Hawthorn	12	3.5	3.5	3.5	3.5	0.5	avg 220	M	G	F	Group of hawthorn generally in good shape with moderate deadwood and dense slender crowns, visible from within site	Retain where possible	20+	C1	2.64	21.90
G20	Hazel	12	5	5	5	5	0	max 260	M	G	F	4x hazel understory, multistemmed from base, some inclusion and rubbing of tree stems typical of species	Retain where possible	10+	C2	3.12	30.59
G21	Hawthorn	12	6	6	6	6	0	max 350	M	G	F	Group of mature hawthorn, multistemmed from the base with dense crowns, moderate deadwood, some ivy colonisation, visible from within site	Retain where possible	10+	C1	4.2	55.42
G22	Oak, sycamore, hazel, hawthorn	18	5	5	5	5	1	avg 450	EM-M	G	F	Large group of mainly slender mature oak with hazel and hawthorn undercanopy, trees are generally in fair	Retain	20+	B2	5.4	91.62

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
												condition but many have some type of lower stem damage, visible from within site					
G23	Oak, hazel	8	3.5	3.5	3.5	3.5	0.5	180	EM	G	F	1 hazel and 2 oak along boundary, squat gnarled.form due to previous use as a hedge	Retain or remove as per development plans	10+	C1	2.16	14.66
G24	Ash, sycamore, willow	15	4	4	4	4	1	200-350	SM-M	G	F	Broken group of self sown trees along boundary on slip road embankment, generally in good health with some overhang into site	Retain	10+	C1	4.2	55.42
G25	cherry, oak, hawthorn, ash	10	3	3	3	3	1	avg 250, max 350	SM	G	G	Mixed group of trees beyond fenceline on slip road embrace with some established but small oaks, some overhang into site, good screen	Retain	20+	B2	3	28.28
W1	Ash, sycamore, elder	15	4	4	4	4	0	250 avg	EM	F	F	Young woodland group, located on steep embankment. Provides continuous area of canopy along site boundary. High proportion of ash within group, limiting longevity of effective canopy.	Retain	20+	B2	3	28.28
W2	Oak, sycamore, beech	20	7.5	7.5	7.5	7.5	2.5	600 Avg	M	G	G	Area of mature woodland, overall good form and condition, good visibility and dense	Retain	30+	A2	7.2	162.88

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Stem diameter (mm)	Age class	Physiological Condition	Structural Condition	Condition	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			W	N	S	E											
												area of mature canopy.					
W3	Birch, wild cherry, Scots pine, field maple, ash, cherry plum, hazel, hawthorn	10-15	4	4	4	4	0	250-350	SM-M	G	F	Large mixed woodland belt, generally in good condition with slender tall trees, high portion of birch stock have succumb to horse shoe fungus with standing deadwood common, ash appear to be healthy, good diverse mix of trees visible from surrounding area	Retain	20+	B2	4.2	55.42
H1	Hawthorn	2	0.5	0.5	0.5	0.5	0	100	SM	F	F	Heavily flailed boundary hedge		10+	C2	1.2	4.52

Key:

***** - Denotes estimated measurement where access to tree stems was restricted or not accessible.

Tree/ Group Ref No. – tree/group number, to be recorded on tree survey plan where necessary.

Species – common and scientific names where possible.

Height – overall height of tree in metres.

Stem Dia – stem diameter, in millimetres at 1.5m above adjacent ground level (on sloping ground to the taken on the upslope of the tree base) or immediately above the roof flare for multi-stemmed trees.

Branch spread – in meters taken at the four cardinal points to derive an accurate representation of the crown (to be recorded on the tree survey plan where necessary).

Height of cc – height of crown clearance – in meters above adjacent ground level to inform on ground clearance, crown stem ratio and shading.

Age class – young (Y), young mature (YM), mature (M), over mature (OM) and veteran (V).

Physiological condition – e.g. good (G), fair (F), poor (P) and dead (D).

Structural condition – e.g. collapsing, the presence of decay and any physical defect.

Management recommendations – including further investigations of suspected defects that require more detailed assessment and potential wildlife habitat.

ERC – estimated remaining contribution – in years e.g. less than 10, 10-20, 20-40, more than 40.

Cat grade – category grade – U or A to C, to be recorded in plan on the tree survey plan where possible.

RPA – Root protection area calculated from BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations in sq/m. Where indicated, dimensions of radius of circle or sides of square based around centre point of trunk calculated for design purposes.

Table 2. Cascade Chart for the Quality Assessment[2]

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention				
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 or irreversible overall decline. Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees supressing adjacent trees of better quality. *Note: Category U trees can have existing or potential conservation value which it might be desirable to preserve.*			See Table 2
	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 arboricultual and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran or trees or wood pasture).	See Table 2
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 were downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation.	Trees present in numbers, usually growing groups or woodlands, such that they attract a higher collective rating than they might attract 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.	See Table 2
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter of <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 benefits.	Trees with no material conservation or other cultural value.	See Table 2

2 The British Standards Institute 2012, Page 9 – Table 1.

Appendix 3. Tree Constraints Plan

Notes

Do not scale off drawing - refer to the tree data schedule for accurate crown spread measurements.
Depictions of tree canopies are based on measurements taken to four cardinal compass points.

N

Sheet Key

1

Tree Constraints Plan showing tree categories and root protection zones.

BS5837:2012 Tree Categories

Category A
Trees of high quality with an estimated remaining life expectancy of at least 40 years. Groups shown as hatched shapes.

Category B
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. Groups shown as hatched shapes.

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 150 mm. Groups shown as hatched shapes.

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. Groups shown as hatched shapes.

Tree groups.
Shown as dashed centre line. Colour represents category (see above).

BS 5837:2012 Root Protection Area

Tree
Showing Canopy extents, category colour and tag number (with category) .
T35-B1

Tree/Group/Hedge numbering: G1-G3, H1-H2.

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Client
Keepmoat

Project
Land off Keresforth Road, Dodworth

Drawing Title
Tree Constraints Plan -Sheet 1

Scale	Date	DB	CB
1:400 A0	Dec 2021	JS	JB

Drawing Number 153.01b
Rev 1

1:400
0 10 20 30 40m

Notes

Do not scale off drawing - refer to the tree data schedule for accurate crown spread measurements.
Depictions of tree canopies are based on measurements taken to four cardinal compass points.
No liability of any kind is accepted for any omissions or inaccuracies in respect of this plan.

N

Sheet Key

2

Tree Constraints Plan showing tree categories and root protection zones.

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T35-B1

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Project: Land off Keresforth Road, Dodworth

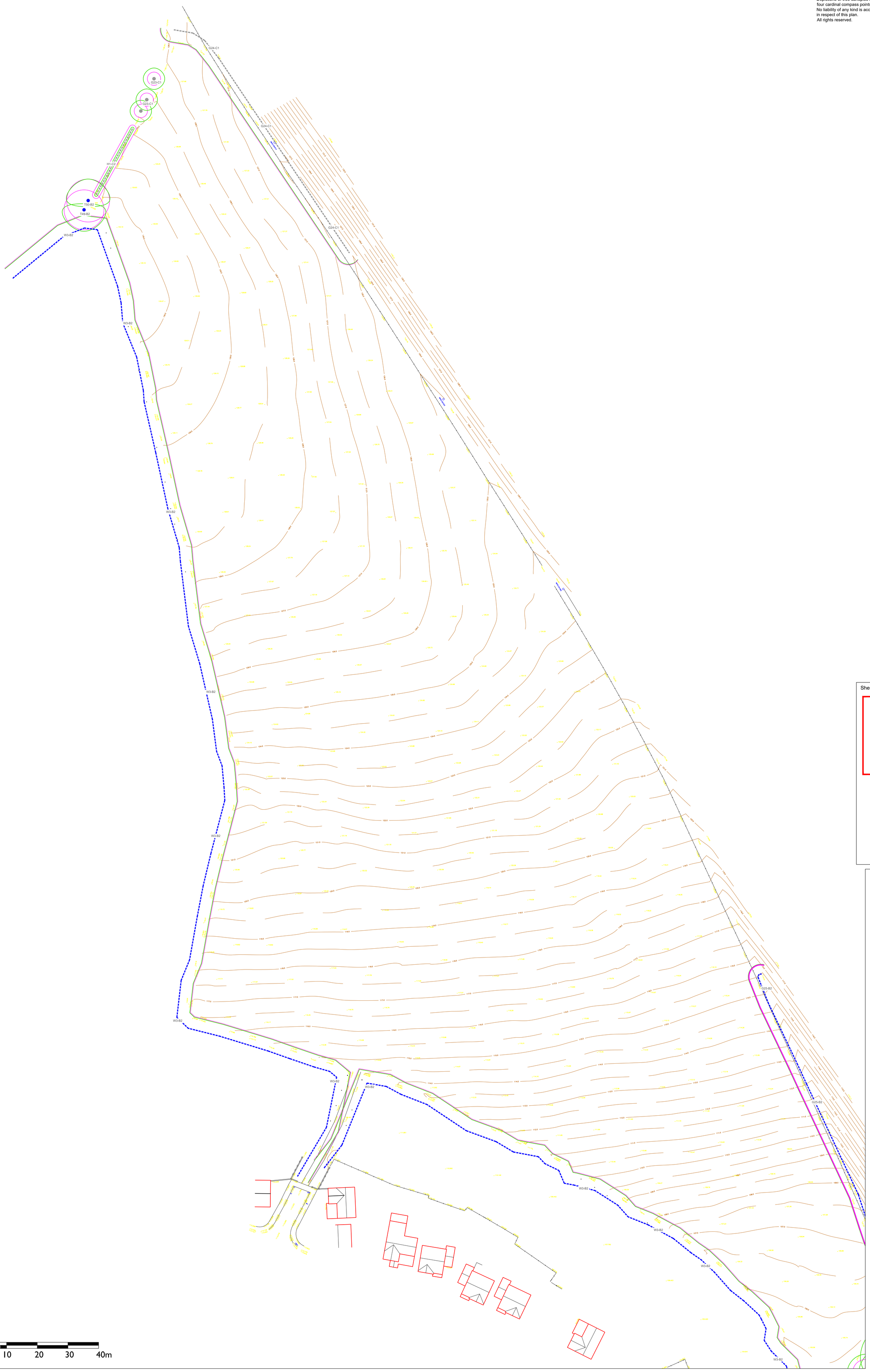
Drawing Title: Tree Constraints Plan - Sheet 2

Scale	Date	DB	CB
1:400 A0	Dec 2021	JS	JB

Drawing Number: 153.01b
Rev: 1

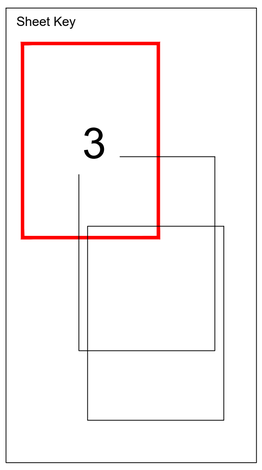
Notes

Do not scale off drawing - refer to the tree data schedule for accurate crown spread measurements.
Depictions of tree canopies are based on measurements taken to four cardinal compass points.



N

Sheet Key



Tree Constraints Plan showing tree categories and root protection zones.

BS5837:2012 Tree Categories

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Trees of high quality with an estimated remaining life expectancy of at least 40 years. Groups shown as hatched shapes.

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BS 5837:2012 Root Protection Area

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T35-B1

Tree/Group/Hedge numbering: G1-G3, H1-H2.

1:400
0 10 20 30 40m

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Drawing Title: Tree Constraints Plan - Sheet 3

Scale	Date	DB	CB
1:400 A0	Dec 2021	JS	JB

Drawing Number: 153.01b
Rev: 1