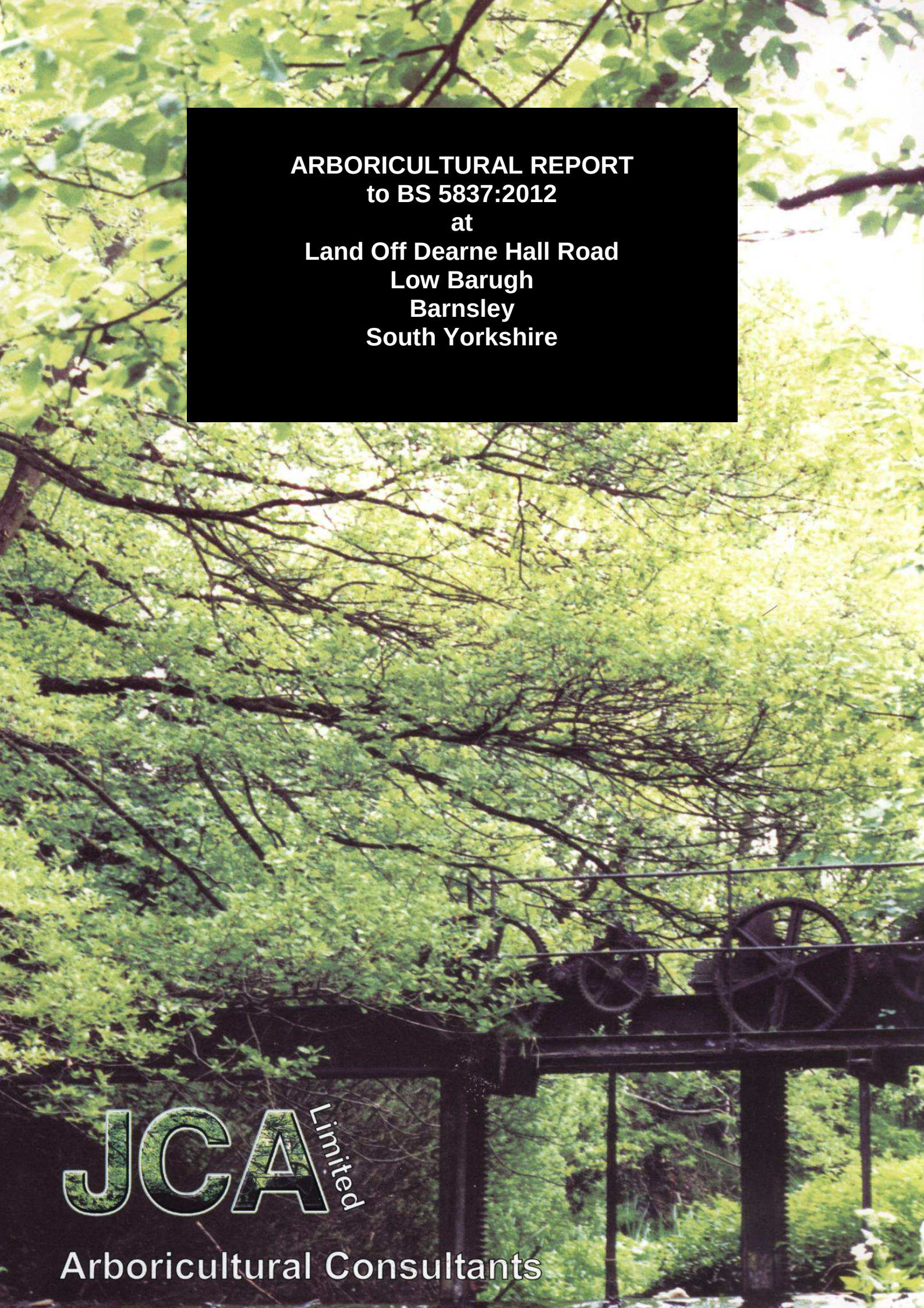


ARBORICULTURAL REPORT
to BS 5837:2012
at
Land Off Dearne Hall Road
Low Barugh
Barnsley
South Yorkshire

JCA Limited

Arboricultural Consultants

Client:
Commercial Estates Projects and Hallam Land Management

JCA Ref:
10974/AJB

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1. Introduction

1.1 Purpose of the Report

1.1.1 A report is required at **Land off Dearne Hall Road, Low Barugh, Barnsley**, to provide detailed, independent, arboricultural advice on the trees present, in the context of potential development.

1.2 Terms of Reference

1.2.1 I am instructed by **Commercial Estates Projects** and **Hallam Land Management**, to visit the site and prepare my findings in a report.

1.2.2 For this purpose I have been supplied with a topographical survey, Drawing No. **hlm2625-3a**.

1.2.3 This survey only showed the tree location of **T3, G34** and **G35** within this report. As such; the location of the remaining items of vegetation shown on the Tree Constraints Plan at **Appendix 6** should be treated as indicative with regards to tree, hedge and group positions.

1.3 Scope of the Report

1.3.1 This report is compiled in accordance with *BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations.*

1.3.2 Preliminary recommendations are given with a view to the long-term management of a sustainable tree cover.

1.3.3 All trees within the site boundary with a stem diameter above 75mm are included.

1.3.4 Where applicable trees outside the site boundary, but close enough to be affected by the proposed development, are included.

1.3.5 The specific design of any proposed development is not generally taken into account at this stage.

1.4 Survey Details

The survey took place during the month of January 2013 and was conducted by Andrew Bussey.

1.4.1 Inspection was made at ground level. Further investigation, such as climbed inspections or decay detection surveys, may be recommended where appropriate.

1.4.2 Measurements were obtained using clinometers, specialist tapes and electronic distometers. Where this was not possible measurements were estimated.

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2. Site Description

2.1 Land Use

2.1.1 The site is currently occupied by arable land.

2.2 Topography

2.2.1 The site generally gently down from the west towards the eastern boundary.

2.3 Treescape

2.3.1 To the western and north-western boundary is a residential area containing occasional garden trees.

2.3.2 The industrial area to the south has trees bordering the site which act as a good visibility buffer.

2.3.3 The trees on this site have a moderate impact on the local treescape.

2.4 Visual Amenity Value

2.4.1 The trees on site collectively provide a reasonable visual amenity to the surrounding area.

2.5 Age Class Mix

2.5.1 The trees surveyed ranged in age from young to mature. However, the trees were predominantly semi-mature and early-mature.

2.6 Species Diversity

2.6.1 Species surveyed include Sycamore, Cherry, Common Ash, Hawthorn, Elder, Lombardy Poplar, Goat Willow, Leylandii, Rowan, Silver Birch, Plum, Common Alder, Common Beech, Apple, Cherry Laurel, Privet, Common Oak, Black Poplar and Hornbeam.

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3. Status of the Trees

3.1 A check was made on 10th January 2013 with: ***Barnsley Metropolitan Borough Council.***

3.2 We are informed that there is no Tree Preservation Order in force and that the site is not within a Conservation Area.

3.3 Due to the large potential penalties for illegally carrying out work to protected trees, JCA recommend that a further check is carried out prior to any works being undertaken. We are able to arrange this and to organise and supervise professional contractors.

4. Tree Descriptions and Recommendations

4.1 Full details of all individual trees surveyed are recorded in the tables at **Appendix 1**, a full explanation of the tables can be found at **Appendix 2**. Please refer also to the Tree Constraints Plan at **Appendix 6** for tree locations.

5. Discussion

5.1 Tree Condition & Recommended Works

5.1.1 The tree survey revealed a total of 35 items of vegetation (18 individual trees, 13 groups of trees and 4 hedges). Of these, 11 trees and groups were identified as retention category 'B', 23 trees, groups and hedges were identified as retention category 'C' and 1 group was identified as retention category 'U'. No retention category 'A' trees were identified on this occasion. Please refer to **Appendix 2** for retention category and definition criteria.

5.1.2 **G35** was identified as retention category 'U'. These trees have defects listed in **Appendix 1** and require removal for arboricultural reasons regardless of any on site development, as a matter of **low priority**.

5.1.3 No other tree works are required at this moment in time; however, attention should be given to **T5, T6** and **T7** which border the site as well as trees within **G34**. These trees were noted to have structural or physiological defects, as detailed at **Appendix 1**. Although these trees were considered to be in an acceptable condition at the time of the inspection, the defects observed may lead to their early demise or render them unsafe in the future. As such, it is recommended that these trees be monitored (re-inspected) on an annual basis to assess if their condition is still acceptable.

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5.2 Potential Arboricultural Implications & Design Advice

5.2.1 The details of the proposed development are not known at present, although a framework masterplan showing the proposed developable areas has been prepared.

5.2.2 The following comments can be made about the site in terms of its tree cover in relation to the proposed development.

5.2.3 **G31** and **G33** were not fully inspected due to site constraints, which included dense vegetation and restricted access. However; both these groups are outside the application site boundary and are not present any restrictions in the full development of the site.

5.2.4 However; if the potential development is to encroach upon **G31** or **G33**, it is recommended that a topographical survey which shows individual tree locations within these groups is obtained and provided to JCA Ltd. in order that a full assessment of these areas of vegetation can be carried out.

5.2.5 Those trees located within the site boundary listed at **G34** within this report are of a poor quality, as such; their retention should not present an obstacle to the development of this northern section of the site.

5.2.6 During development the part of the tree most commonly under threat, and most commonly ignored, is the rooting system. When trees are damaged, particularly the roots, their long-term health and stability can be affected. Most development activity can have an impact on the future condition and safety of a tree, and therefore careful planning and management of tree protection should ensure a continued sustainable tree cover with minimal stress to existing trees.

5.2.7 In order to ensure that the retained trees on site are properly protected during the development phase, the tree rooting zones are to be considered. For the purpose of development the rooting zone of the tree is known as the Root Protection Area or RPA. The RPA of each tree or group is marked on the Tree Constraints Plan at **Appendix 6** and represents the rooting zone which, where possible, should remain undisturbed. The protection of retained trees can therefore be achieved by erecting a temporary barrier (based on the RPAs), so creating a **Construction Exclusion Zone**.

5.2.8 Damage caused by any construction activity such as demolition, soil stripping, and provision of services needs to be considered at the design stage. Care must be taken to avoid damage to tree roots when existing structures such as tarmac surfaces are removed within an RPA.

5.2.9 The laying of access roads, driveways, parking areas or any other hard surfaces planned in proximity to retained trees needs to be considered. There are solutions available allowing for the construction of hard surfaces within the RPAs without causing significant damage to the trees.

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5.2.10 Boundary walls or other light structures can be constructed without damage to roots through the use of piled foundations rather than the more traditional strip foundations.

5.2.11 The location of drainage and utilities within the RPA can be achieved if need be, using special techniques and supervision.

5.2.12 The position of the site compound is a major consideration. It is recommended that this, which typically includes the site office, facilities, toilets, storage of materials and parking, is located away from trees and outside the RPA.

5.2.13 Consideration must be given to movement of both vehicle and pedestrian traffic. If possible traffic should be diverted away from the RPAs. If this is not possible a range of temporary surfaces are available to distribute the weight of traffic and allow the roots to receive moisture and air.

5.2.14 Generally, the alteration of ground levels within the RPA is not acceptable. However, should ground levels need to be lowered in areas adjacent to trees or within the minimum distance recommended, appropriate measures must be taken to minimise the detrimental effects on the trees and their root systems. With regards to raising levels, it is necessary to maintain adequate supplies of moisture and oxygen through the soil to the tree roots. Therefore, no material must be placed within the RPA without arboricultural advice.

5.2.15 The shade that will be cast by the retained trees must also be considered. Where buildings are to be positioned within the shade cast area of trees, these should be designed in order to maximise light levels. If required, JCA can provide a shade cast prediction plan.

5.2.16 Many development sites contain areas of nature conservation interest. Trees and hedgerows, in particular, provide an important habitat for birds, bats, invertebrates and fungi and appropriate attention needs to be paid to preserving habitats throughout the development process. JCA can provide Ecological Surveys and Bat Surveys where required.

5.2.17 Where a landscape planting scheme is proposed, consideration must be made at the planning stage as to where this is to be implemented on site. Such locations should be protected in order to prevent soil compaction and/or contamination and should therefore form part of the Construction Exclusion Zone. JCA can provide Tree Planting Schemes where required.

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6. Conclusions

6.1 The trees surveyed were generally found to be in good or fair condition.

6.2 Trees within **G35** have been recommended for removal for arboricultural reasons. These are discussed in **Section 5.1.2** and detailed at **Appendix 1**.

6.3 **T5, T6**, **T7** and **G34** require an annual inspection as they have structural or physiological defects. These are discussed in **Section 5.1.4** and detailed at **Appendix 1**.

6.4 Potential arboricultural implications and design advice has been given at **Section 5.2.**

6.5 All development work carried out in close proximity to trees must be done so in a manner sympathetic to their needs. Otherwise the condition of the trees may deteriorate in the months and years following the development, leading to a loss of amenity and potentially hazardous trees.

6.6 Care must be taken at the design stage to ensure that the retained trees are protected. The protection of the retained trees can be achieved by installing a temporary barrier to create a Construction Exclusion Zone (based on the Root Protection Areas). The Root Protection Area of each tree or group is marked on the Tree Constraints Plan at **Appendix 6**.

6.7 The proposed development should be accompanied by an Arboricultural Method Statement detailing the specific protection measures necessary for each tree. This should specify the temporary protective barrier standards and positions (the creation of the Construction Exclusion Zone), acceptable construction techniques and necessary tree works.

6.8 This Method Statement may be required by the LPA in order to discharge the planning conditions attached to any outline planning consent

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Appendices

Tree Ref.	Age Species *Latin Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
T 1	Early-mature Sycamore *Acer pseudoplatanus*	7	4	4 S	29 #	2.5 # 3 # 3.5 # 3.5 #	Situated on adjacent land. Twin-stemmed at 1m with an unbalanced crown. Occasional pruning wounds yet no major visible defects.	No action required.	GOOD	GOOD	MOD	20-40	C
T 2	Early-mature Cherry *Prunus sp*	6	3	3 N	28 #	4 # 4 # 5 # 5 #	Situated on adjacent land. Multi-stemmed at 1m with a balanced crown. Occasional pruning wounds yet no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
T 3	Early-mature Common Ash *Fraxinus excelsior*	9	2	2.5 N	38	5 # 4 4 4	Twin-stemmed at 3m with a balanced crown which overhangs the footpath and the road. Occasional pruning wounds yet no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
G 4	Semi-mature Hawthorn *Crataegus monogyna*	To 5	0 +	0 n/a	To 20	See plan.	Boundary trees of little significance, which are multi-stemmed at ground level with balanced crowns.	No action required.	GOOD	GOOD	LOW	20-40	C
T 5	Early-mature Lombardy Poplar *Populus nigra 'Italica'*	17	1	1 S	45 #	3 0.5 4 # 3	Presumed to be located in adjacent land. Single stemmed and leaning with an unbalanced crown. No evidence of significant pruning. Significant bark wounds with decay. Deadwood noted. Limited inspection due to vegetation and access.	No action required due to off site location.	GOOD	FAIR	LOW	10-20	C
T 6	Early-mature Lombardy Poplar *Populus nigra 'Italica'*	17	5	5 S	70 #	5.5 # 4 # 4 # 5.5	Presumed to be located in adjacent land. Multi-stemmed at 2m with an unbalanced crown. No evidence of significant pruning. Bark wounds with decay. Deadwood noted. Limited inspection due to vegetation and access.	No action required due to off site location.	GOOD	FAIR	LOW	10-20	C
T 7	Early-mature Lombardy Poplar *Populus nigra 'Italica'*	16	4	4 S	52 #	2.5 # 4 # 3 # 4.5	Presumed to be located in adjacent land. Twin-stemmed at 2.5m with an unbalanced crown. No evidence of significant pruning. Deadwood noted. Limited inspection due to vegetation and access.	No action required due to off site location.	GOOD	FAIR	LOW	10-20	C
G 8	Young to Semi-mature Goat Willow *Salix caprea*	To 6	2	2 n/a	To 23 #	See plan.	Situated on adjacent land. Four garden trees of good form. Bark wounds noted. Limited inspection due to access.	No action required.	GOOD	FAIR	LOW	20-40	C
H 9	Semi-mature Leylandii *X Cupressocyparis leylandii*	To 4	0	0 n/a	To 15 #	See plan.	Situated on adjacent land. Maintained hedge with no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
T 10	Young Hawthorn *Crataegus monogyna*	3.8	0	0 n/a	12	0.8 1.3 1.3 0.7	Multi-stemmed at ground level with a balanced crown. Occasional pruning wounds yet no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C

Tree Ref.	Age Species *Latin Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
H 11	Semi-mature Leylandii & Hawthorn *X Cupressocyparis leylandii & Crataegus monogyna*	To 4	0	0 n/a	To 15	See plan.	Partially on adjacent land. Maintained hedge with no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
T 12	Early-mature Sycamore *Acer pseudoplatanus*	7	1	1 SW	35 #	4.5 # 4 # 4 # 4 #	Situated on adjacent land. Multi-stemmed at 2m with a balanced crown. Occasional pruning wounds yet no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
T 13	Semi-mature Rowan *Sorbus aucuparia*	5	0.5	0.5 E	16 #	3 # 3.5 # 2.5 # 2 #	Situated on adjacent land. Twin-stemmed at ground level with an unbalanced crown. Occasional pruning wounds. Bark scars to stem.	No action required.	GOOD	GOOD	LOW	20-40	C
G 14	Semi-mature to early-mature Mixed *Mixed*	To 9	0 +	0 n/a	To 29 #	See plan.	Situated on adjacent land. Garden trees of good form. Species include Silver Birch, Plum, Common Alder and Common Beech. No major visible defects. Limited inspection due to access.	No action required.	GOOD	GOOD	LOW	40+	B
T 15	Semi-mature Rowan *Sorbus aucuparia*	5	1.5	1.5 n/a	18 #	2 # 3 # 3 # 1 #	Situated on adjacent land. Garden tree of poor form. Limited inspection due to access.	No action required.	GOOD	FAIR	LOW	10-20	C
G 16	Semi-mature to early-mature Mixed *Mixed*	To 6	0 +	0 n/a	To 25 #	See plan.	Situated on adjacent land. Garden trees of good form. Species include Rowan, Cherry and Apple. No major visible defects. Limited inspection due to access.	No action required.	GOOD	GOOD	LOW	40+	C
H 17	Semi-mature Cherry Laurel *Prunus laurocerasus*	To 2.5	0 +	0 n/a	To 10 #	See plan.	Situated on adjacent land. Maintained hedge with no major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
T 18	Early-mature Common Alder *Alnus glutinosa*	13	2	2 S	26 #	4 # 3.5 # 3.2 # 3 #	Situated on adjacent land. Single stemmed and leaning with a balanced crown. No evidence of significant pruning and no major visible defects. Limited inspection due to access.	No action required.	GOOD	GOOD	LOW	40+	B
G 19	Early-mature Common Alder *Alnus glutinosa*	To 11	0 +	0 n/a	To 30 #	See plan.	Situated on adjacent land. Garden trees of good form. Limited inspection due to access.	No action required.	GOOD	GOOD	LOW	20-40	B
T 20	Semi-mature Silver Birch *Betula pendula*	12	2	2 S	25 #	3 # 2.5 # 3 # 2.5 #	Situated on adjacent land. Garden tree which is single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects. Limited inspection due to access.	No action required.	GOOD	GOOD	LOW	20-40	B

Tree Ref.	Age Species *Latin Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
T 21	Semi-mature Rowan *Sorbus aucuparia*	4.5	1	1 n/a	18 #	3 # 3 # 3 # 3 #	Situated on adjacent land. Garden tree which is multi-stemmed at ground level with a balanced crown. Occasional pruning wounds yet no major visible defects. Limited inspection due to access.	No action required.	FAIR	GOOD	LOW	20-40	C
T 22	Mature Elder *Sambucus nigra*	3	0	0 n/a	19 #	2 # 1 # 1.5 # 1.5 #	Multi-stemmed at ground level with an unbalanced crown. No evidence of significant pruning. Decay to stem.	No action required.	FAIR	FAIR	LOW	10-20	C
T 23	Early-mature Silver Birch *Betula pendula*	13	3	3 SE	40 #	5 # 5 # 6 # 5 #	Situated on adjacent land. Multi-stemmed at 3m with a balanced crown. Occasional pruning wounds. Garden tree with tree house built across low bows. Limited inspection due to access.	No action required.	GOOD	GOOD	LOW	20-40	B
H 24	Semi-mature to Early-mature Mixed *Mixed*	To 6	0	0 n/a	To 20	See plan.	Hedgerow which is partly in adjacent land. No major visible defects observed. Species include Cherry Laurel, Hawthorn and Privet.	No action required.	GOOD	GOOD	LOW	20-40	C
T 25	Early-mature Sycamore *Acer pseudoplatanus*	4.5	0	0 n/a	To 28	3 # 3 # 3 # 3 #	Multi-stemmed at ground level with a balanced crown. Previously topped.	No action required.	GOOD	GOOD	LOW	10-20	C
T 26	Early-mature Common Oak *Quercus robur*	6	1	1 n/a	29 #	3.5 5 # 5 # 5 #	Situated on adjacent land. Multi-stemmed at 1.5m with a balanced crown. No evidence of significant pruning and no major visible defects. Limited inspection due to access.	No action required.	GOOD	GOOD	LOW	40+	B
G 27	Early-mature Mixed *Mixed*	To 12	0 +	0 n/a	To 40	See plan.	Situated on adjacent land. Row of planted trees of good form. Providing boundary screening from industrial units. Species include Cherry, Goat Willow and Hawthorn. Limited inspection due to access.	No action required.	GOOD	GOOD	LOW	40+	B
G 28	Mature Black Poplar *Populus nigra betulifolia*	To 16	0 +	0 n/a	To 85 #	See plan.	Three trees on boundary, each is multi-stemmed at 1m with an unbalanced crown. No evidence of significant pruning. Minor deadwood noted. Limited inspection due to vegetation and access.	No action required.	GOOD	GOOD	LOW	20-40	B
G 29	Semi-mature to early-mature Common Oak & Hornbeam *Quercus robur & Carpinus betulus*	To 11	0 +	0 n/a	To 29 #	See plan.	Three trees of poor form in tight group. No major visible defects observed.	No action required.	GOOD	GOOD	LOW	20-40	C
G 30	Young to semi-mature Mixed *Mixed*	To 7	0 +	0 n/a	To 20	See plan.	Intermittent self seeded trees adjacent to the footpath. Species include Hawthorn, Goat Willow, Elder and Oak.	No action required.	GOOD	GOOD	LOW	20-40	C

Tree Ref.	Age Species *Latin Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
G 31	Early-mature Common Oak *Quercus robur*	To 13	0	0 n/a	To 48 #	See plan.	Row of good quality trees. Previously topped in places to provide clearance for overhanging power lines. Not fully inspected due to vegetation and poor access, yet no major visible defects observed.	No action required.	GOOD	GOOD	LOW	40+	B
T 32	Early-mature Common Oak *Quercus robur*	7	0	0 n/a	47	5 5 5 5	Single stemmed and vertical with a balanced crown. No evidence of significant pruning and no major visible defects.	No action required.	GOOD	GOOD	LOW	40+	B
G 33	Young to early-mature Mixed *Mixed*	To 14	0 +	0 n/a	To 45 #	See plan.	Woodland plantation which includes Common Oak, Silver Birch, Hawthorn, Common Alder and Goat Willow. Not fully inspected due to vegetation and poor access, yet no major visible defects observed.	No action required.	GOOD	GOOD	MOD	40+	B
G 34	Early-mature Lombardy Poplar *Populus nigra 'Italica'*	To 17	0 +	/ n/a	To 68	See plan.	Ten trees, each typically single stemmed and leaning with an unbalanced crown. No evidence of significant pruning. Deadwood, bark scars and decay cavities noted.	Monitor annually.	FAIR	FAIR	LOW	20-40	C
G 35	Early-mature Lombardy Poplar *Populus nigra 'Italica'*	To 17	0	0 n/a	To 68	See plan.	Four trees with severe defects rendering them unsafe.	Remove.	POOR	POOR	LOW	<10	U

Appendix 2: Explanation of Tree Descriptions

A2.1 Measurements

A2.1.1 *HEIGHT* of the tree is measured from the stem base in metres. Where the ground has a significant slope the higher ground is selected.

A2.1.2 *CROWN HEIGHT* is an indication of the average height at which the crown begins. Also recorded is the height of the first significant branch and the direction of growth.

A2.1.3 *STEM DIAMETER* is measured at 1.5 metres above (higher) ground level. Where the tree is multi-stemmed below a height of 1.5 metres, the diameter is measured at the narrowest point below the fork.

A2.1.4 *CROWN SPREAD* is measured from the centre of the stem base to the tips of the branches in all four cardinal points.

A2.2 Evaluations

A2.2.1 *AGE CLASS* of the tree is described as young, semi-mature, early-mature, mature, or over-mature.

A2.2.2 *PHYSIOLOGICAL CONDITION* is classed as good, fair, poor, or dead. This is an indication of the health of the tree and takes into account vigour, presence of disease and dieback.

A2.2.3 *STRUCTURAL CONDITION* is classed as good, fair or poor. This is an indication of the structural integrity of the tree and takes into account significant wounds, decay and quality of branch junctions.

A2.2.4 *LIFE EXPECTANCY* is classed as; less than 10 years, 10-20 years, 20-40 years, or more than 40 years. This is an indication of the number of years before removal of the tree is likely to be required.

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A2.3 Retention Categories

A2.3.1 ***A (marked green on the plan) = trees of high quality; retention most desirable.***

These trees are of high quality and value with a good life expectancy. They may be further sub-divided as follows:

A1) Particularly good examples; perhaps rare or unusual species, or forming an essential part of arboricultural features e.g. avenues.

A2) Groups of trees having a significant landscape impact or with excellent screening properties, or those softening the effect of existing structures.

A3) Those having significant conservation or historical value e.g. veteran trees.

A2.3.2 ***B (marked in blue on the plan) = trees of moderate quality; retention desirable.***

These trees are of moderate quality and value with a significant life expectancy. They may be further sub-divided as follows:

B1) Trees that might be included in the high category but because of their numbers or slightly impaired condition, are downgraded in favour of the better individuals.

B2) Groups of trees forming distinct landscape features, thereby attracting a higher collective rating than they might as individuals.

B3) Trees with clearly identifiable conservation or other cultural benefits.

A2.3.3 ***C (marked in grey on the plan) = trees of low quality but which could be retained.***

These trees are of low quality and value, and are in adequate condition to remain until new planting could be established. They may be further sub-divided as follows:

C1) Trees not qualifying in higher categories.

C2) Groups of trees which do not form a distinct landscape feature.

C3) Trees with very limited conservation or other cultural benefits.

A2.3.4 ***U (marked in red on the plan) = unsuitable for retention: trees for removal.***

These trees are in such a condition that any existing value would be lost within 10 years. This may be due to any of the following:

1) Failure is likely due to serious, irredeemable, structural defects.
2) The trees are considered to be hazardous.
3). Diseases are present which may affect the health of adjacent trees.
4) They are in serious, overall decline or are already dead.
5) They are of low quality and suppressing adjacent trees of better quality.
6) Removal of other category U trees will render them exposed and unstable.

These trees should be removed or treated in such a way as to make them safe where they have high ecological value, such as in a woodland setting.

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Appendix 3: General Guidelines

A3.1 All work must be to BS 3998: 2010 - '*Recommendations for tree work'*.

A3.2 Staff carrying out the work must be qualified, experienced and ideally be Arboricultural Association approved contractors. They should be covered by adequate public liability insurance.

A3.3 This report is based upon a visual inspection. The consultant shall not be responsible for events which happen after this time due to factors which were not apparent at the time, and the acceptance of this report constitutes an agreement with the guidelines and the terms listed in this report.

A3.4 Any defects seen by a contractor or the employer that were not apparent to the consultant must be brought to the consultant's attention immediately.

A3.5 No liability can be accepted by JCA Limited in respect of the trees unless the recommendations of this report are carried out under the supervision of JCA and within JCA's timescale.

A3.6 It is advisable to have trees inspected by an arboricultural consultant regularly. In this instance it is recommended that these inspections are made every year.

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Appendix 4: Glossary of Terms & Abbreviations

Arboriculture	The cultivation of trees in order to produce individual specimens of the greatest ornament, for shelter or any primary purpose other than the production of timber.
Canker	Disease damaged area of a tree, usually caused by fungus or bacteria.
Co-dominant Stem	A stem which has grown in direct competition to the main stem and which has formed a substantial size influencing the appearance of the tree.
Crown Lift	The removal of the lowest branches, usually to a given height. It allows more residual light and greater clearance underneath for vehicles, etc.
Crown reduce	The reduction of a tree's height or spread while preserving its natural shape.
Crown thin	The removal of some of the density of a tree's crown**,** usually 5-25% allowing more light through its canopy and reducing wind resistance.
Deadwood	Either dead branches, or a procedure involving the removal of dead, dying and diseased branches.
Dieback	Where branches are beginning to show signs of death usually at the tips in the crown.
Epicormic shoots	Small branches that grow in uncharacteristic clusters around the base or the stem of a tree, usually as a result of bad pruning or some other stress factor.
Formative pruning	The trimming of a tree to remove weaknesses and irregularities which may lead to problems. The formative pruning operation is aimed at reducing the potential for future weaknesses or problems within the tree's crown.
Included bark	Where the bark on two adjoining branches or stems is growing tight together, forming a joint with limited physical strength.
Pollarding	A method of tree management in which the main trunk of the tree is cut at about 4m, and the resulting branches are then cropped on a regular basis.
Remedial pruning	The removal of old stubs, deadwood, epicormic growth, rubbing or crossing branches and other unwanted items from the tree's crown. Sometimes referred to as crown cleaning.
RPA	Root Protection Area – The theoretical rooting area of a tree as defined in BS5837: 2012 *Trees in relation to construction*.
Topping	Topping is a form of pruning that removes terminal growth leaving a 'stub' cut end. Topping causes serious health problems to a tree.

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Appendix 5: Author Qualifications

Principal Consultant and Managing Director

Jonathan Cocking F.R.E.S., Tech. Cert. (Arbor.A), PDipArb (RFS) FArborA CBiol MSB. MICFor. Jonathan is a Registered Consultant and Fellow of the Arboricultural Association and sits on its Professional Committee. He has 31 years experience in the Arboricultural profession and served for eight years as Senior Arboriculturist with a large local authority before establishing JCA in 1997. Jonathan has since developed JCA's portfolio of services and its extensive client base. He is a Chartered Biologist, a Chartered Arboriculturalist and an Expert Witness with much experience of litigation work.

Technical Coordinator

Toby Thwaites *BSc (Hons), HND (Arboriculture).* Toby joined JCA in 1998 after graduating in Ecology at the University of Huddersfield and has since graduated in Arboriculture at the University of Central Lancashire. A former JCA team leader and Consulting Arboriculturist, Toby was promoted to Technical Coordinator and now oversees all office and on-site activities at JCA and is on hand to offer technical support and advice.

Consulting Staff: Arboriculture

Andy Bagshaw *FdSc (Arboriculture).* Andy joined JCA in 2005 having gained several years experience in tree surgery and landscaping. He is trained in aerial rescue and is JCA's principal first aid person. Andy has obtained a foundation degree in Arboriculture at the University of Central Lancashire, is QTRA qualified and is a JCA team leader who manages an office of Consulting Arboriculturists.

Toby Parsons *Cert. Arb. (RFS), Tech. Cert. (Arbor.A).* Toby joined JCA after spending 6 years working as a senior climber for various Arboricultural contractors in the East Midlands and the South-West. He has gained the Level 2 Certificate in Arboriculture (RFS) and an Arboricultural Technicians Certificate. Toby is QTRA qualified and is LANTRA certified in Professional Tree Inspection.

Scott Reid *ND (Arboriculture and Forestry).* Scott joined JCA after working with other consultancy companies in the south of England. He specialises in trees in relation to development and holds a National Diploma, various NPTC qualifications and is currently studying for his Level 4 Diploma in Arboriculture.

Andrew Bussey Andrew joined JCA having spent 12 years working as a tree surgeon for various private companies and a Local Authority. He has various NPTC qualifications, is QTRA qualified and is currently studying for his Arboricultural Technicians Certificate.

Gavin Proud *BSc. (Hons), NC (Arboriculture).* Gavin recently joined JCA having spent 8 years working for various tree work contractors as a climber and team leader. In addition to his qualification in Arboriculture, Gavin has various NPTC qualifications and is LANTRA certified in Professional Tree Inspection.

Flora Harding *BSc. (Hons) Fd.BSc. (Arboriculture and Tree Care).* Flora has a degree in Rural Resource Development (specialising in Wildlife and Landscape Conservation). She spent her former career working for a local authority and has a licence for QTRA. In 2012, Flora published an article to enable industry based research for the purpose of gaining Chartered Arboriculturist status.

Victoria Black *FdSc (Arboriculture).* Victoria has been with JCA since 2002 building her knowledge of the Arboricultural business. She obtained a foundation degree in Arboriculture at the University of Central Lancashire.

Consulting Staff: Ecology

Kieran Shaw *BSc (Hons).* Kieran, our in-house Ecologist, joined JCA after achieving a degree in Geography from the University of Aberdeen. Prior to joining JCA, Kieran has worked for the Yorkshire Wildlife Trust and is a member of the West Yorkshire Bat Group. He is currently studying for a Masters degree in Earth Science and has undertaken research in Greenland, Scotland and throughout Europe.

Administrative Staff

Sue Guest Administrative Team Leader.
Sally Whitwam *BA (Hons),* Administrative Assistant & Marketing.
Simeon Haigh *BSc (Hons).* IT Officer.
Catherine Cocking Accounts Manager.
Yasmin Shahzad Administrative Assistant.
Liz Bone Administrative Assistant.

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Root Protection Area: RPA

THE ROOT PROTECTION AREA (RPA) INDICATES THE LIKELY ROOTING ZONE OF A TREE. THE RPA SHOULD IDEALLY REMAIN UNDISTURBED IF A TREE IS TO BE RETAINED.

THE DEVELOPMENT PROPOSALS SHOULD THEREFORE BE DESIGNED TO AVOID THE RPA OF ANY TREE WHICH IS TO BE RETAINED.

IF IT IS NECESSARY FOR THE DEVELOPMENT TO ENCROACH INTO THE RPA OF A TREE WHICH IS TO BE RETAINED THEN SPECIALIST CONSTRUCTION TECHNIQUES AND MATERIALS MUST BE CONSIDERED.

Appendix 6: Tree Constraints Plan

Land Off Dearne Hall Road, Low Barugh, Barnsley, South Yorkshire.
JCA Ref: 10974/AJB

SCALE : 1:1000	PAPER SIZE : A1

SURVEYED BY: AJB	DRAWN BY: AJB	APPROVED BY: SR

BRITISH STANDARD 5837:2012: 4.5 RETENTION CATEGORIES

Detailed definitions of these catagories are at Appendix 2 of our report. N.B. These categories do not necessarily represent or correspond to recommendations for action made in this report.

	CATEGORY A: 'RETENTION MOST DESIRABLE'
	CATEGORY B: 'RETENTION DESIRABLE'
	CATEGORY C: 'TREE WHICH COULD BE RETAINED'
	CATEGORY U: 'TREE FOR REMOVAL'
•	CENTRE OF TREE/SHRUB
•	CENTRE OF TREE/SHRUB TO BE REMOVED
	ROOT PROTECTION AREA
	APPROXIMATE APPLICATION SITE BOUNDARY

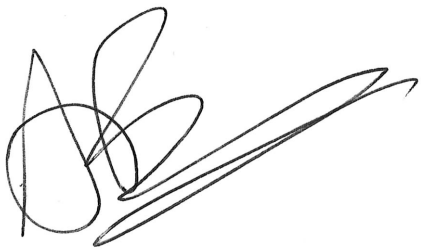
JCA Limited

Arboricultural & Forestry Consultants

0 1 10 20 30 40 50 100 metres

I hope that this report provides all the necessary information, but should any further advice be needed please do not hesitate to contact the author.

Signed



.....

Andrew Bussey.

30th January 2013

For and on behalf of ***JCA Ltd***

Registered Office:

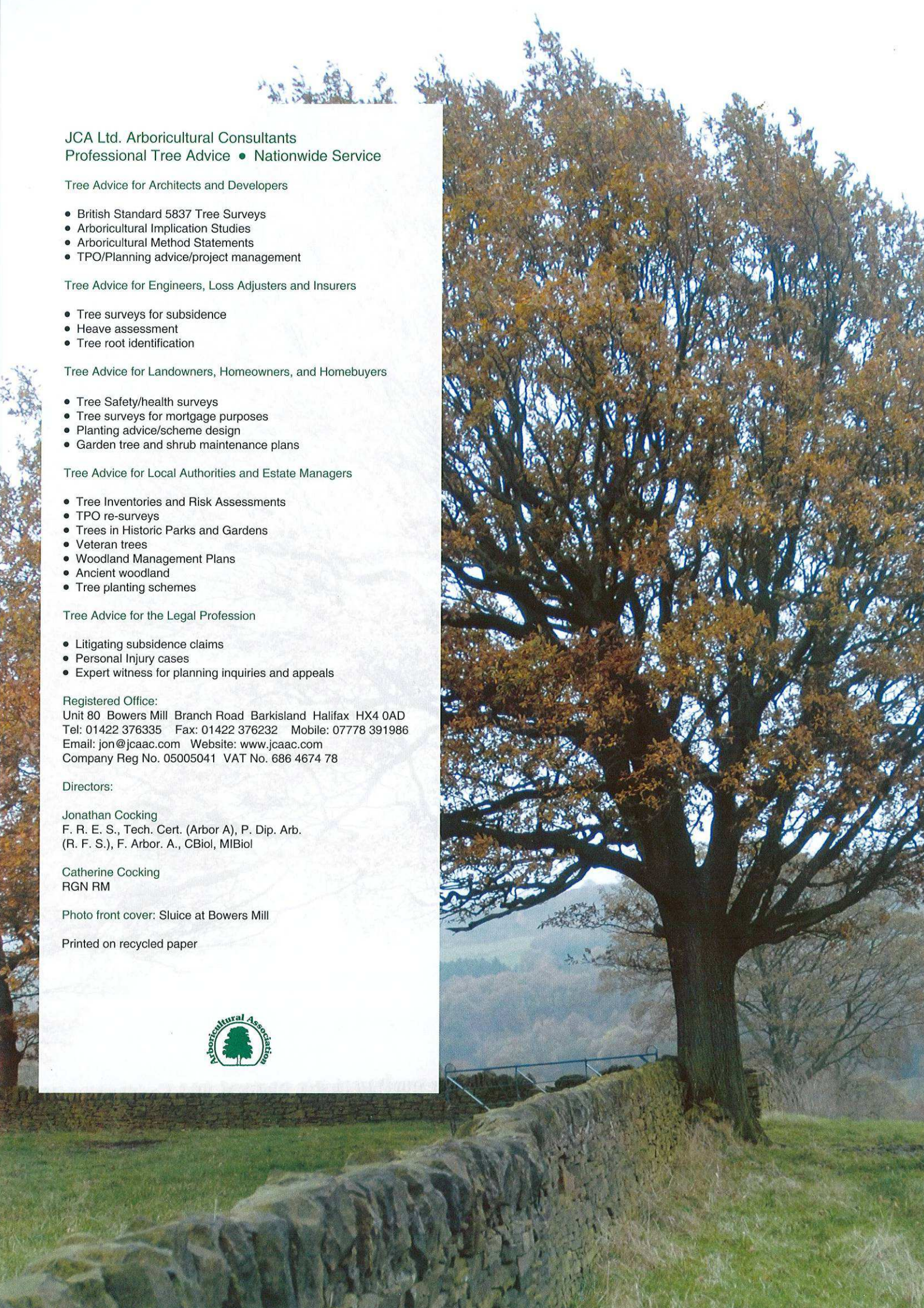
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(R. F. S.), F. Arbor. A., CBiol, MIBiol

Catherine Cocking
RGN RM

Photo front cover: Sluice at Bowers Mill

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