

ARBORICULTURAL REPORT AND IMPACT ASSESSMENT to BS 5837:2012 at Land at Carrs Lane Cudworth Barnsley South Yorkshire S72 8EJ

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JCA Limited

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1. Introduction

1.1 Purpose of the Report

1.1.1 A report is required at **Carrs Lane, Cudworth, 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 We are instructed by **Barratt Homes and David Wilson Homes** to prepare an Arboricultural Impacts Assessment (AIA) for the proposed development, based on our arboricultural report dated 3rd November 2014 (JCA Ref: **11819/AJB**).

1.2.2 The arboricultural survey and report conformed to the most recent specifications outlined in BS 5837: 2012 *Trees in relation to design, demolition and construction*.

1.2.3 The original report was based upon a topographical survey, **Drawing No. S8155**.

1.3 Scope of the Report

1.3.1

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 the proposed development has been considered within the Arboricultural Implication Assessment in **Section 6** and detailed on the plan at **Appendix 7**.

1.4 Survey Details

1.4.1 The survey took place during the month of October 2014 and was conducted by Andrew Bussey.

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

1.4.3 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 farm land.

2.2 Topography

2.2.1 The site slopes gently from the northwest down towards the south-eastern boundary.

2.3 Treescape

2.3.1 A residential area containing occasional garden trees is located to the north and east of the site.

2.3.2 Open fields with boundary hedgerows and occasional scattered trees are located to the south and west of the site.

2.3.3 The trees on this site have a minor 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. Individually, the much of the surveyed vegetation offers only a low amenity value.

2.5 Age Class Mix

2.5.1 The trees surveyed ranged in age from young to early-mature.

2.6 Species Diversity

2.6.1 Species surveyed include Hawthorn, Elm sp., Sycamore, Common Ash, Cherry, Silver Birch, Holly, Pine sp., Elder, English Oak, Blackthorn, Field Maple Apple, Leylandii, Stag's Horn Sumach and Weeping Willow.

2.6.2 The predominant species was Hawthorn, mainly in the form of hedgerows or groups of trees which comprise former hedgerows.

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3. Status of the Trees

3.1 A check was made during October 2014 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.

3.4 Please note that one off site tree, (**T34** in this report) is protected by a Tree Preservation Order.

3.5 Before any work is organised for **T34**, all the necessary steps to get the permission of the Local Planning Authority must be taken.

3.6 ***No work must be done to T34 until permission has been granted.***

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.

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5. Discussion Relating to the Existing Treescape

5.1 Tree Condition & Recommended Works

5.1.1 The tree survey revealed a total of **34** items of vegetation (**16** individual trees, **14** groups of trees and **4** hedges). Of these, **2** trees and **1** group were identified as retention category 'B', **11** trees, **15** groups and **4** hedges were identified as retention category 'C' and **1** tree was identified as retention category 'U'. Please refer to **Appendix 2** for retention category and definition criteria.

5.1.2 **T1** was identified as retention category 'U'. This tree is dead and requires removal for arboricultural reasons regardless of any on site development. Its removal is of **low priority**.

5.1.3 Where a full detailed inspection of trees was inhibited by restricted access or by the presence of understorey vegetation, as detailed at **Appendix 1**, it is advised that these trees be re-inspected for any possible defects when the understorey vegetation has been removed or when access has been made available.

6. Arboricultural Implications Assessment (AIA)

6.1 Proposed Development

6.1.1 The proposed development will consist of the construction of a residential housing estate.

6.1.2 Other ancillary features, including roads, driveways, garages, hard and soft landscaping and areas of public open space also form part of the proposals.

6.1.3 Drawing No. **YW-04-04 Rev D** has been supplied by the client; this plan can be found at **Appendix 7** and is the basis for which this AIA has been prepared.

6.2 Trees to be Removed

6.2.1 **G2, T3, G4, T5, T6, T7, G8, G9, G14, G16,** sections of **G17, T18, T24, G25, G26, H27,** sections of **G30,** a section of **G31** and a section of **H32** shall require removal as they are situated within the footprint of the proposed development.

6.2.2 All the trees listed are retention category 'C' trees. The removal of these trees can, in time, be part mitigated by the planting of new trees, as shown as indicative on the landscaping scheme proposed for the site.

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6.3 Implications for the Retained Trees

6.3.1 All the retained trees will be protected during the construction phase by a temporary protective barrier (protective fencing), in accordance with BS 5837: 2012. The installation of the temporary protective barrier will be the very first job on site following the tree removal and pruning works.

6.3.2 Wherever possible the temporary protective barrier will be positioned to enclose the entire **Root Protection Area** (**RPA**) and canopies of the retained trees, in order to create a **Construction Exclusion Zone** (**CEZ**).

6.3.3 Routes for pedestrian and site traffic should ideally be located outside, and diverted away from, the RPAs of the retained trees. Where this is not possible, temporary protective surfaces must be laid over the exposed RPAs which will distribute the weight of site vehicles, machinery or pedestrians whilst allowing moisture to reach the tree rooting area beneath.

6.3.4 Where utilities need to be brought onto the site, these should ideally be routed away from the RPAs of the trees. Where this is not possible, methodologies on the installation of underground services without damage to tree roots should be considered. All service providers should be consulted prior to commencement of works with the aim of minimising the number of service runs on the site.

6.3.5 The site compound, which typically includes the site office, mess facilities, toilets, storage of materials and parking, must be located away from the trees and outside the RPAs. Care should also be taken to prevent soil contamination with chemical spillages, including petrol, diesel and oils.

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7. Conclusions

7.1 The trees surveyed were generally found to be in good condition.

7.2 **One** tree has been recommended for removal for arboricultural reasons, as discussed in **Section 5.1.2** and detailed at **Appendix 1**.

7.3 The arboricultural implications of the development have been considered and discussed in **Section 6**.

7.4 A number of trees require removal in order to facilitate the proposed development, as discussed in **Section 6.2** and detailed on the plan at **Appendix 7**.

7.5 All development work carried out in close proximity to trees must be executed in a manner sympathetic to their needs. Otherwise, the condition of the trees may deteriorate in the months and years following development, leading to a loss of amenity and resulting in potentially hazardous trees. Care must therefore be taken to ensure that the retained are suitably protected.

7.6 In accordance with **Section 6.1** of **BS 5837: 2012**, the next stage on this site should be the preparation of an **Arboricultural Method Statement (AMS)**, to ensure that all the retained trees survive the development process. An **AMS** details which trees are to be removed, which trees are to be retained and any other tree works which are required to facilitate development. The **AMS** will also advise on temporary protective barriers, temporary ground protection, site supervision, location of services and it will detail specialist construction techniques.

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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	Semi-mature Elm *Ulmus sp.*	7	0	0 n/a	22	4 2.5 2.5 2	A dead tree. Multi-stemmed at ground level with a balanced crown.	Remove.	DEAD	DEAD	DEAD	<10	U
G 2	Semi to early-mature Hawthorn *Crataegus monogyna*	To 3.8	0	0 n/a	To 18	See plan	A dense group of trees of upright and multiple-stemmed form. No major visible defects.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
T 3	Early-mature Sycamore *Acer pseudoplatanus*	12	1.8	1.8 n/a	33	4# 3.9 4# 4	Single-stemmed and vertical with a balanced crown. A co-dominant stem was noted at 0.5m. Occasional pruning wounds. No major visible defects.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
G 4	Semi-mature Cherry, Elder *Sambucus nigra, Prunus sp.*	To 9	0	0 n/a	To 16	See plan	Self-seeded trees; reasonable form but of low value. A dead Elder of little significance was noted within the group. No major visible defects.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	10-20	C
T 5	Semi-mature Cherry *Prunus sp.*	8	2.5	2.5 n/a	20#	4.5# 4.5# 4.5# 4.5#	Situated on adjacent land. Single-stemmed and vertical with a balanced crown. Occasional pruning wounds due to crown lifting. No major visible defects.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
T 6	Semi-mature Sycamore *Acer pseudoplatanus*	11	0	0 n/a	28	2.2 3.4 3# 3.8	Overhanging an adjacent building. Twin-stemmed at 0.5m with a balanced crown. No evidence of significant pruning. No major visible defects.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
T 7	Semi-mature Sycamore *Acer pseudoplatanus*	11	0	0 n/a	30	4# 4.3 4# 3	Overhanging an adjacent building. Multi-stemmed at ground level with a balanced crown. No evidence of significant pruning. No major visible defects.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
G 8	Young to early-mature Mixed	To 7	0	0 n/a	To 24	See plan	A dense group of self-seeded Blackthorn, Common Ash, Sycamore, English Oak and Hawthorn with the occasional Holly and Field Maple amongst. No major visible defects.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
G 9	Early-mature Common Ash *Fraxinus excelsior*	To 11	2	2 n/a	To 45#	See plan	Two multiple-stemmed trees of reasonable form. Not fully inspected due to dense vegetation. Not shown on the topographical survey provided but within influencing distance of the development area.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
G 10	Young to early-mature Mixed	To 14	0	0 n/a	To 40#	See plan	Situated on adjacent land in private gardens. Common Ash, Sycamore, English Oak, Holly, Silver Birch and Pine. All of good form. Not fully inspected due to restricted access.	No action required.	GOOD	GOOD	LOW	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 11	Early-mature Sycamore *Acer pseudoplatanus*	11	2	2 n/a	48#	6.5# 6.5# 6.5# 6.5#	Situated on adjacent land in private garden. Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects. Not fully inspected due to restricted access.	No action required.	GOOD	GOOD	MOD	20-40	B
T 12	Semi-mature Sycamore *Acer pseudoplatanus*	11	1.5	1.5 n/a	30#	3.5# 3.5# 3.5# 3.5#	Situated on adjacent land in private garden. Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects. Not fully inspected due to restricted access.	No action required.	GOOD	GOOD	LOW	20-40	C
G 13	Semi to early-mature Hawthorn *Crataegus monogyna*	To 8	0	0 n/a	To 22	See plan	A former hedgerow comprised of sporadic lines of trees of reasonable form. Occasional self-seeded Sycamores noted within. No major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
G 14	Semi to early-mature Hawthorn *Crataegus monogyna*	To 7	0	0 n/a	To 25	See plan	A former hedgerow comprised of sporadic lines of trees of reasonable form. Occasional self-seeded Sycamores noted within. No major visible defects.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
T 15	Semi-mature English Oak *Quercus robur*	5.5	0	0 n/a	28	2.2 3 3.7 2.5	Twin-stemmed at 0.5m with a balanced crown. No evidence of significant pruning. No major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
G 16	Semi-mature Hawthorn *Crataegus monogyna*	To 4	0	0 n/a	To 15	See plan	A former hedgerow comprised of sporadic lines of trees of reasonable form. No major visible defects.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
G 17	Semi to early-mature Hawthorn *Crataegus monogyna*	To 6	0	0 n/a	To 20	See plan	A former hedgerow comprised of sporadic lines of trees of reasonable form. No major visible defects.	No action required. *Remove the sections shown in red on the attached plan to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
T 18	Early-mature Common Ash *Fraxinus excelsior*	8	0	0 n/a	26	4 4 4.8 4	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
H 19	Semi-mature Leylandii *X Cupressocyparis leylandii*	To 5.5	0	0 n/a	To 12#	See plan	A well maintained garden boundary hedge.	No action required.	GOOD	GOOD	LOW	20-40	C
T 20	Semi-mature Common Ash *Fraxinus excelsior*	8	0	0 n/a	25#	4# 4# 4# 4#	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects. Not fully inspected due to dense vegetation.	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
T 21	Semi-mature Stag's Horn Sumach *Rhus typhia*	4	1	1 n/a	18	2 3 3 3	Multi-stemmed at ground level with an unbalanced crown. No evidence of significant pruning. No major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
T 22	Semi-mature Cherry *Prunus sp.*	3.5	1	1 n/a	20	2.8 2.8 2.8 2.8	Situated on adjacent land in a private garden. Single-stemmed and vertical with a balanced crown. Occasional pruning wounds. No major visible defects. Not fully inspected due to restricted access.	No action required.	GOOD	GOOD	LOW	20-40	C
T 23	Semi-mature Apple *Malus sp.*	3	0.8	0.8 n/a	12	2.2 2.2 2.2 2.2	Situated on adjacent land in a private garden. Multi-stemmed at 0.5m with a balanced crown. Occasional pruning wounds. No major visible defects. Not fully inspected due to restricted access.	No action required.	GOOD	GOOD	LOW	20-40	C
T 24	Early-mature Hawthorn *Crataegus monogyna*	6.5	0	0 n/a	30	3.3 3.3 3.3 3.3	Multi-stemmed at 1m with a balanced crown. No evidence of significant pruning. No major visible defects.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
G 25	Early-mature Hawthorn *Crataegus monogyna*	To 8	0	0 n/a	To 289#	See plan	A former hedgerow comprised of sporadic lines of trees of reasonable form. No major visible defects.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
G 26	Early-mature Holly *Ilex aquifolium*	To 10	0	0 n/a	To 25#	See plan	A dense line of trees of reasonable form. No major visible defects.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
H 27	Semi-mature Hawthorn *Crataegus monogyna*	To 5.5	0	0 n/a	To 20#	See plan	An unmaintained hedgerow. No major visible defects.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
H 28	Semi-mature Hawthorn *Crataegus monogyna*	To 1.8	0	0 n/a	To 10	See plan	Partially maintained hedgerow. No major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
T 29	Early-mature Holly *Ilex aquifolium*	6	0	0 n/a	25#	4 4 4 4	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects. Not fully inspected due to understory vegetation.	No action required.	GOOD	GOOD	LOW	20-40	C
G 30	Semi to early-mature Hawthorn *Crataegus monogyna*	To 8	0	0 n/a	To 30#	See plan	Dense groups of self-seeded trees of reasonable form. No major visible defects. Not fully inspected due to understory vegetation.	No action required. *Remove the sections shown in red on the attached plan to facilitate the proposed development.*	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	Semi to early-mature Hawthorn *Crataegus monogyna*	To 8	0	0 n/a	To 26	See plan	A former hedgerow comprised of sporadic lines of trees of reasonable form. No major visible defects.	No action required. *Remove the section shown in red on the attached plan to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
H 32	Semi-mature Hawthorn *Crataegus monogyna*	To 1.8	0	0 n/a	To 10	See plan	A maintained boundary hedgerow.	No action required. *Remove the section shown in red on the attached plan to facilitate the proposed development.*	GOOD	GOOD	LOW	20-40	C
G 33	Semi-mature Field Maple, Common Ash *Acer campestre, Fraxinus excelsior*	To 7	0	0 n/a	To 13	See plan	Two trees of upright form located within G33. No major visible defects. Not fully inspected due to understory vegetation.	No action required.	GOOD	GOOD	LOW	20-40	C
T 34	Early-mature Weeping Willow *Salix babylonica*	13	3	3 n/a	48#	6# 6# 6# 6#	Situated on adjacent land. Overhanging the footpath and the road. Twin-stemmed at 4m with a balanced crown. Occasional pruning wounds. No major visible defects. Not fully inspected due to limited access.	No action required.	GOOD	GOOD	MOD	40+	B

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 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.

Phil Humeniuk *FdSc (Arboriculture).* Phil joined JCA having spent 3 years working for various tree surgery companies and as a Tree Officer for a Local Authority. He also has several years experience working as a consultant both for JCA and for another consultancy. Phil obtained his foundation degree in Arboriculture at the University of Central Lancashire and has various NPTC's and is LANTRA certified in Professional Tree Inspection.

Charles Cocking. Charles joined JCA in January 2014 as an Apprentice having previously worked for the company on a part time basis during 2013. In between his roles at JCA, Charles will be studying at Myerscough College, Preston, undertaking a one year RFS course which will be followed up by a further two year course, in order to obtain a Foundation degree in Arboriculture – *FdSc (Arboriculture).*

Emily Wilde *FdSc Arboriculture.* Emily has recently joined JCA, having previously worked for various private tree surgery and consultancy companies over the past 8 years. She initially obtained a ND in Forestry & Arboriculture, followed by a FdSc in Arboriculture at Askham Bryan College, York. Emily has various NPTC certificates and is QTRA qualified.

Consulting Staff: Ecology

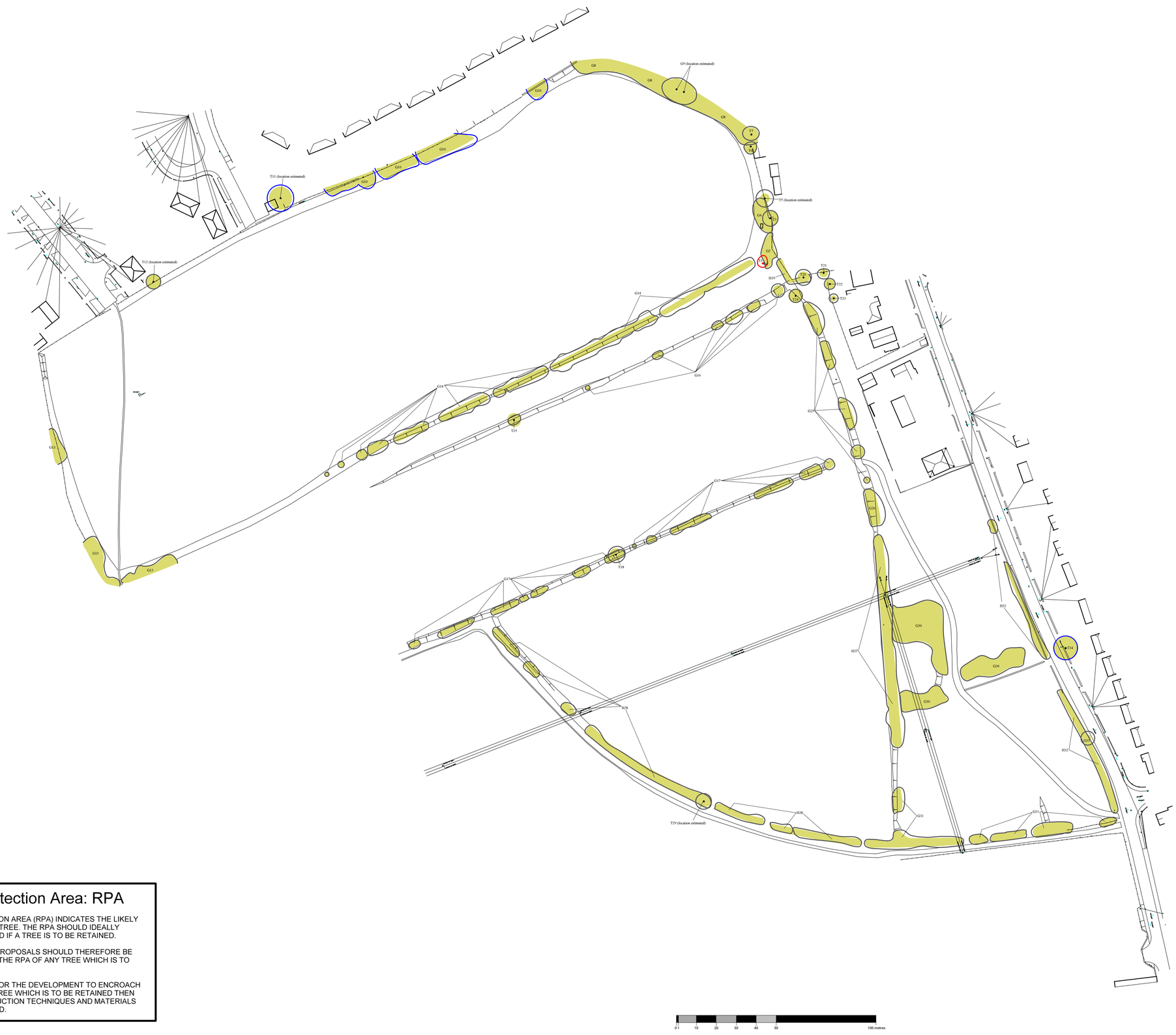
David Ryder. David has recently joined JCA as our in-house ecologist. He brings with him over 8 years experience in the field of ecological consultancy. David holds a Natural England Licence to disturb and handle bats and is currently undergoing assessment for Chartered Institute of Ecology & Environmental Management (CIEEM) membership.

Josie Collier: *BSc (Hons) Ecology*. Josie has recently joined JCA as part of our expanding ecology department. She brings with her a degree in Ecology and Environmental Biology from the University of Leeds. Josie has gained experience from working with a local authority and is seeking to become a member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

Administrative Staff

Sue Guest Administrative Team Leader.
Simeon Haigh *BSc (Hons).* IT Officer.
Lorraine Spink Administrative Assistant.
Yasmin Shahzad Administrative Assistant.
Catherine Cocking Accounts Manager.

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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

ADDRESS: Land at Carrs Lane, Cudworth, Barnsley, South Yorkshire, S72 8EJ.
JCA REF: 11819-A/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'
	STEM OF TREE TO BE RETAINED
	STEM OF TREE TO BE REMOVED
	ROOT PROTECTION AREA

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N
W E
S



0 1 10 20 30 40 50 100 metres

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 7: Development Proposals

ADDRESS: Land at Carrs Lane, Cudworth, Barnsley, South Yorkshire, S72 8EJ.
JCA REF: 11819-A/AJB.

SCALE : 1:1000	PAPER SIZE : A1

Symbol	Meaning
Green circle	TREE TO BE RETAINED
Red circle	TREE TO BE REMOVED
Black dot	STEM OF TREE TO BE RETAINED
Red dot	STEM OF TREE TO BE REMOVED
Yellow-green fill	ROOT PROTECTION AREA

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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 September 2015

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

Registered Office:

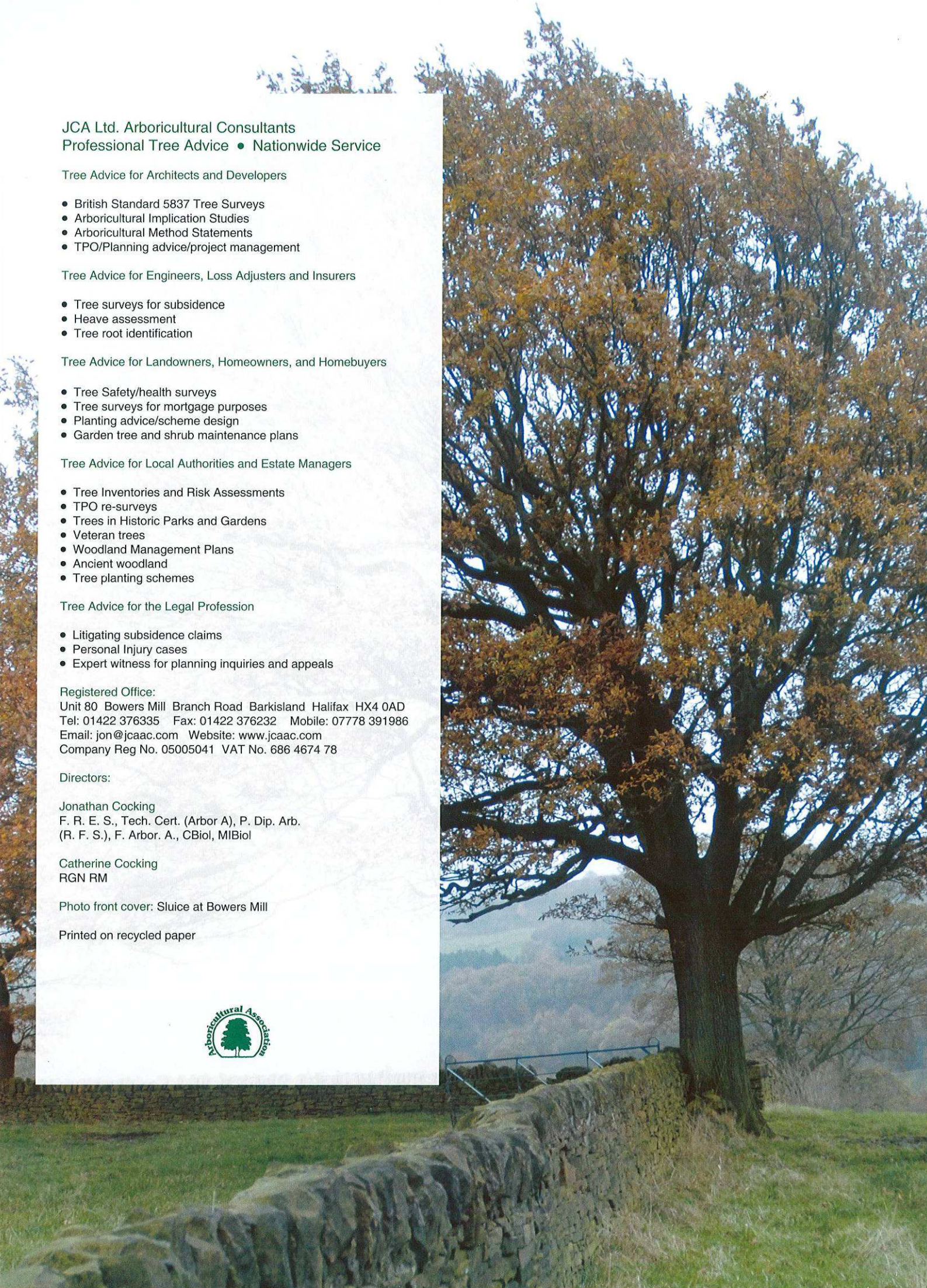
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- Tree root identification

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- Garden tree and shrub maintenance plans

Tree Advice for Local Authorities and Estate Managers

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- TPO re-surveys
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- Veteran trees
- Woodland Management Plans
- Ancient woodland
- Tree planting schemes

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- Personal Injury cases
- Expert witness for planning inquiries and appeals

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Directors:

Jonathan Cocking
F. R. E. S., Tech. Cert. (Arbor A), P. Dip. Arb.
(R. F. S.), F. Arbor. A., CBiol, MIBiol

Catherine Cocking
RGN RM

Photo front cover: Sluice at Bowers Mill

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