ARBORICULTURAL REPORT
to BS 5837:2012
at
Dunford Bridge Car Park
& Recreational Area

Client:
Gillespies

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15058/AJB



JCA Limited
Arboricultural & Ecological Consultants

Contents

1. Introduction 3
1.1 Purpose of the Report 3
1.2 Terms of Reference 3
1.3 Scope of the Report 3
1.4 Survey Details 4
2. Site Description 4
2.1 Land Use & Topography 4
2.2 Treescape & Visual Amenity Value 4
2.3 Age Class Mix 4
2.4 Species Diversity 4
3. Status of the Trees 5
4. Tree Descriptions and Recommendations 5
5. Discussion Relating to the Existing Treescape 6
5.1 Tree Condition & Recommended Works 6
5.2 Tree Removals for Arboricultural Purposes 6
5.3 Remedial Tree Works 6
5.4 Monitoring / Further Investigation 6
5.5 General Design Advice 7
6. Conclusions 9
Appendix 1: Tree Descriptions and Recommendations 11
Appendix 2: Explanation of Tree Descriptions 12
Appendix 3: General Guidelines 15
Appendix 4: Glossary of Terms & Abbreviations 16
Appendix 5: Author Qualifications 17
Appendix 6: Tree Constraints Plan 18

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1. Introduction

1.1 Purpose of the Report

1.1.1 This report is required at **Dunford Bridge Car Park and Recreational Area**, to provide detailed, independent, arboricultural advice on the trees present, in the context of potential development.

1.1.2 The purpose of this report is to summarise the findings of an arboricultural assessment of the existing vegetation at the above site; conducted in accordance with the guidelines contained within BS5837: 2012 'Trees in relation to design, demolition and construction – Recommendations'.

1.1.3 Where necessary, this report will outline any tree works which are required within the current context of the site. It will also grade the trees in accordance with the British Standard; which will guide the design in terms of which trees should be retained and which trees could be removed.

1.2 Terms of Reference

1.2.1 JCA Ltd has been instructed by **Gillespies** to survey the site and prepare the findings in a report.

1.2.2 For this purpose, a topographical survey has been supplied (Drawing Ref: **2423 Dunford Bridge Topographical Survey Rev A produced by Gwalia Surveyors in September 2016**), which forms the basis for the Tree Constraints Plan at **Appendix 6**. The topographical survey, along with all other documents supplied to JCA, is assumed to be correct. No checking of such documents will be undertaken and JCA cannot be held responsible for incorrect data supplied by other parties.

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'* and is based on an independent and objective assessment of the existing vegetation.

1.3.2 Preliminary recommendations are given with a view to the long-term management of sustainable tree cover and to uphold the interests of health and safety.

1.3.3 The specific designs of the proposed development are not generally taken into account at this stage or detailed within this report. This is to be detailed in an Arboricultural Impact Assessment.

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1.4 Survey Details

1.4.1 The survey took place during the month of June 2019 and was conducted by Andrew Bussey.

1.4.2 During this survey, all trees were inspected from ground level. Further investigations, such as a climbed inspection or a decay detection survey, have not been undertaken.

1.4.3 Measurements were obtained using clinometers, specialist tapes or electronic distometers. Where this was not possible, measurements were estimated to the best ability of the surveyor. JCA endeavour to provide accurate information and will always take measurements unless inhibited by restricted access or other mitigating circumstances. Where measurements have been estimated, they are clearly highlighted at **Appendix 1**.

2. Site Description

2.1 Land Use & Topography

2.1.1 The site, which has multiple undulations in ground level, is occupied by car parking and areas of hard and soft landscaping which form part of the Trans-Pennine Trail.

2.2 Treescape & Visual Amenity Value

2.2.1 Collectively, the surveyed trees provide a good addition to the local treescape and amenity value of the area.

2.3 Age Class Mix

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

2.4 Species Diversity

2.4.1 Species surveyed include Sycamore, Goat Willow, Silver Birch, Common Alder, Hornbeam, Holly, Plum, Hawthorn, English Elm, Common Ash, Hazel, Elder, Crack Willow, English Oak, Beech, Rhododendron, Downy Birch and Viburnum.

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3. Status of the Trees

3.1 A check was made on 25th 2019 with ***Barnsley Metropolitan Borough Council.***

3.2 We are informed that there is no Tree Preservation Order (TPO) 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. This is especially relevant as the Council is able to serve a TPO at any time. We are able to arrange a further check on your behalf.

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 **12** items of vegetation (**11** groups of trees and **1** hedge). Of these, **9** groups were identified as retention category 'B and **2** groups and **1** hedge were identified as retention category 'C'. Please refer to **Appendix 2** for retention category and definition criteria.

5.1.2 Within the survey, tree works have been identified for reasons of public safety, to ensure the long-term health of the trees or for general maintenance purposes. Such recommendations have been made without regard to any projected layout and should be undertaken irrespective of development. These are summarised in the following sections. For full details on all recommendations, please refer to **Appendix 1**. For an explanation of the priority ratings, see **Appendix 2 (A2.2.5)**.

5.2 Tree Removals for Arboricultural Purposes

5.2.1 On this occasion, no trees have been identified as category 'U' and as such no trees are recommended for removal in the current context of the site.

5.3 Remedial Tree Works

5.3.1 The dead Elm stems noted within **G3** should be removed as a matter of **low priority**.

5.4 Monitoring / Further Investigation

5.4.1 In this case, no specific monitoring (re-inspecting and re-assessing) or further investigation works are considered necessary. However, all trees to be retained within the proposed development should be inspected on a regular basis in the interests of risk management.

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5.5 General Design Advice

5.5.1 The following is an overview of general design considerations relating to a tree cover.

5.5.2 The precise details of a proposed development are not known at present. The specific implications of a proposed design should be assessed within an Arboricultural Implications Assessment (AIA).

5.5.3 The retention categories of the trees surveyed are an indication of their overall values. The category of each item is listed at **Appendix 1** and an explanation of the retention categories is included at **Appendix 2**. As a general rule, those trees listed as retention category 'A' or 'B' are the most valuable items and as such the removal of these is likely to be met with resistance by the Local Planning Authority (LPA). Those items listed as retention category 'C' are of lesser value and the removal of these is less likely to be met with resistance by the LPA. Items listed as retention category 'U' are recommended for removal regardless of any proposals and should not present a constraint to construction. The above information should guide the design in terms of which trees are to be removed and which are to be retained. However, it should be noted that the retention of trees is just one consideration in the design process and each development will be taken for its merits.

5.5.4 The location of each tree is plotted on the associated Tree Constraints Plan at **Appendix 6**. This plan identifies the retention category of each tree (Retention A: green canopy, Retention B: blue canopy, Retention C: grey canopy, Retention U: red canopy), the crown spread, and also the associated rooting zone (Root Protection Area or RPA shown in gold). In order to enable the survival of trees shown to be retained within any proposals, both the canopy of the tree and its RPA must be completely avoided wherever possible. This relates to not just the location of new buildings, but also to the location of new areas of hard standing, proposed utility routes and any ground level changes (both excavations and soil piling). Where this is not possible, specialist construction methods and materials will need to be used.

5.5.5 Where information is available, the water demand of each tree is provided at **Appendix 1**, in accordance with NHBC Standards 2014 chapter 4.2. 'Building near trees'. The water demand of trees can affect adjacent structures and this is therefore included to inform foundation design, depth and the proximity of proposed structures to trees.

5.5.6 Retained trees will require adequate protective measures during development. Such measures typically entail temporary protective fencing, installed to the full extent of the RPA. Where this is not entirely possible, ground protection may also comprise part of the protective measures. This includes a compaction reducing construction detail which enables a degree of construction traffic over/within the RPA.

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5.5.7 As the RPAs of the trees will require fencing off as a protection measure, this should be brought into consideration when planning such things as access routes and material storage during development. It is accepted that in some cases it is not entirely possible to completely avoid the RPA or canopy lines within a new development. The consulting arboriculturalist should therefore be made aware of any such incursions to make comment and, where possible, advise on mitigation actions. Such details should be contained within an Arboricultural Implications Assessment (AIA).

5.5.8 No material storage is permitted within the RPA of retained trees unless confirmed to be acceptable by the consulting arboriculturalist. The exact details and location of protective measures should be included within an Arboricultural Method Statement (AMS).

5.5.9 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.

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6. Conclusions

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

6.2 The trees are not protected by a Tree Preservation Order or by virtue of them being in a Conservation Area.

6.3 The dead Elm stems noted within **G3** should be removed as a matter of **low priority**.

6.4 General design advice has been provided in **Section 5.5**.

6.5 Upon provision of specific proposals, site-specific advice can be given with regards to the impact on trees. In accordance with **Section 5.4** of **BS 5837: 2012**, the next stage on this site should be the preparation of an **Arboricultural Impact Assessment (AIA)**, which will illustrate and discuss the impact of the proposals on the trees and vice versa, to help to inform good design.

6.6 The data gained during the survey provides an indication of the health of the trees. However, it does not enable a comprehensive assessment of their condition over time. Trees are living organisms which are affected by many factors including weather conditions, diseases/disorders, light levels and human activities. Because of this, this report is only valid for a period of 1 year from the date of issuing. Should an update or revision of this report be required outside of this time period, JCA may require a further site visit to ensure that the condition of the trees has not significantly changed. It is advised that the trees are inspected regularly, in the interests of risk management.

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Appendices

Tree Ref.	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
G 1	Young to early-mature Mixed species *Details in observations*	To 14	0+	0+ n/a	To 40 x 4#	See plan	A linear group of Sycamore, Goat Willow, Silver Birch and Common Alder located adjacent to the waterside and car park.	No action required n/a	GOOD	GOOD	MOD	LOW TO HIGH	40+	B 2
H 2	Young Mixed species *Details in observations*	To 5	0+	0+ n/a	To 7	See plan	An understory Hornbeam, Holly and Plum hedge.	No action required n/a	GOOD	GOOD	LOW	MOD	40+	C 2
G 3	Young Mixed species *Details in observations*	To 10	0+	0+ n/a	To 10	See plan	A linear group of Hawthorn, English Elm and Sycamore located adjacent to the waterside. Dead Elm stems noted, as indicated on the plan at **Appendix 6**.	Remove the dead Elm stems. Low	GOOD	GOOD	MOD	MOD TO HIGH	40+	B 2
G 4	Semi-mature Mixed species *Details in observations*	To 10	0+	0+ n/a	To 35	See plan	A linear group of Goat Willow and Sycamore located adjacent to the waterside.	No action required n/a	GOOD	GOOD	MOD	MOD TO HIGH	40+	B 2
G 5	Young to semi-mature Mixed species *Details in observations*	To 9	0+	0+ n/a	To 25	See plan	A linear group of English Oak, Hawthorn and Goat Willow.	No action required n/a	GOOD	GOOD	MOD	HIGH	40+	B 2
G 6	Young Mixed species *Details in observations*	To 4	0+	0+ n/a	To 20	See plan	Scattered self-seeded Goat Willow, Hawthorn and Crack Willow of low value and little significance.	No action required n/a	GOOD	GOOD	LOW	HIGH	40+	C 2
G 7	Young to semi-mature Mixed species *Details in observations*	To 8	0+	0+ n/a	To 25	See plan	A dense group of English Oak, Common Ash, Hawthorn, Hazel, Common Alder, Plum, Goat Willow and Viburnum. Potential Ash dieback noted within.	No action required n/a	GOOD	GOOD	MOD	LOW TO HIGH	40+	B 2
G 8	Young to semi-mature Mixed species *Details in observations*	To 11	0+	0+ n/a	To 26	See plan	A dense group of Goat Willow, Silver Birch, Elder, Common Ash and Common Alder.	No action required n/a	GOOD	GOOD	MOD	LOW TO HIGH	40+	B 2
G 9	Young to semi-mature Mixed species *Details in observations*	To 10	0+	0+ n/a	To 30#	See plan	Inaccessible group of Goat Willow and Sycamore.	No action required n/a	GOOD	GOOD	MOD	MOD TO HIGH	20+	B 2
G 10	Young to semi-mature Mixed species *Details in observations*	To 9	0+	0+ n/a	To 28#	See plan	A linear group of Sycamore, Goat Willow, Downy Birch, Rhododendron, English Oak and Crack Willow located adjacent to the former railway line. Not fully inspected due to restricted access.	No action required n/a	GOOD	GOOD	MOD	LOW TO HIGH	40+	B 2

Tree Ref.	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
G 11	Young to semi-mature Mixed species *Details in observations*	To 7	0+	0+ n/a	To 26	See plan	A linear group of Sycamore, Hawthorn, English Oak and Goat Willow.	No action required n/a	GOOD	GOOD	LOW	MOD TO HIGH	40+	C 2
G 12	Young to early-mature Mixed species *Details in observations*	To 10	0+	0+ n/a	To 45	See plan	A linear group of Goat Willow, Sycamore, Rhododendron, Downy Birch and Beech.	No action required n/a	GOOD	GOOD	MOD	LOW TO HIGH	40+	B 2

Appendix 2: Explanation of Tree Descriptions

A2.1 Measurements/ Reference Information

A2.1.1 *REF NUMBER.* All items surveyed are allocated a reference number preceded with a letter, identifying the type of vegetation surveyed: T = an individual tree, G = a group of trees or an area of vegetation, W = woodland, H = a hedgerow.

A2.1.2 *SPECIES: COMMON AND BOTANICAL NAME*. The common and botanical names of the species present are noted. If the species is not clear or identifiable, then a general common name and genus will be noted.

A2.1.3 *AGE CLASS* of the tree is described as young, semi-mature, early-mature, mature, over-mature, veteran or dead.

A2.1.4 *HEIGHT* of the tree is measured in metres from the stem base to the top of the crown.

A2.1.5 *CROWN HEIGHT* is an indication of the height above ground level at which the crown begins.

A2.1.6 *STEM DIAMETER* is measured at 1.5 metres above (higher) ground level. Where the tree is multi-stemmed at this point; diameter measurements are taken for each stem. If more than five stems are present, an average stem diameter is taken. If for whatever reason it is not practical to measure multiple-stemmed trees in this way, the diameter is measured close to ground level, just above the root buttress.

A2.1.7 *CROWN SPREAD* is measured from the centre of the stem base to the tips of the branches to all four cardinal points.

A2.1.8 *HEIGHT AND DIRECTION OF LOWEST BRANCH.* The height and direction of the lowest significant branch is noted because of potential issues relating to clearances and the need for tree pruning.

A2.1.9 *NHBC WATER DEMAND.* The water demand of each tree, as listed in NHBC Standards 2010 Chapter 4.2 ‘Building near trees’. This is included to aid structural engineers, architects and other members of the design team as it determines foundation depth and other considerations with regard to trees.

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A2.2 Evaluations

A2.2.1 *PHYSIOLOGICAL CONDITION* is classed as good, fair, poor, or dead. This is an indication of the health and vitality of the tree and takes into account vigour, presence of disease and dieback.

A2.2.2 *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.

A2.2.3 *LIFE EXPECTANCY* is classed as; Dead, less than 10 years, 10+ years, 20+ years, or 40 + years. This is an indication of the minimum number of years before removal of the tree is likely to be required.

A2.2.4 *AMENITY VALUE.* A general indication is given in respect to the amenity/landscape value of the tree/group within the surrounding area.

A2.2.5 *PRIORITIES.* A priority rating is given concerning the time periods in which the recommended works should be undertaken. LOW priority works should be undertaken within 12 months of the survey, MOD (moderate) priority works should be undertaken within 6 months and HIGH priority works should be completed as soon as practically possible. If no works are recommended, N/A (not applicable) will be used.

A2.3 Retention Categories

A2.3.1 ***A (marked green on the Tree Constraints Plan) = Trees of high quality.***

These trees are of high quality and value with a good life expectancy (usually with an estimated remaining life expectancy of 40 years).

A2.3.2 ***B (marked in blue on the Tree Constraints Plan) = Trees of moderate quality.***

These trees are of moderate quality and value with a reasonable life expectancy (usually with an estimated life expectancy of at least 20 years).

A2.3.3 ***C (marked in grey on the Tree Constraints Plan) = Trees of low quality.***

These trees are of low quality and value but which are in adequate condition to remain or are young trees with a stem diameter below 15cm (usually with an estimated life expectancy of at least 10 years).

A2.3.4 Trees categorised as retention category ‘A’, ‘B’ or ‘C’ are then justified by being further divided into 3 subcategories:

1 = Mainly arboricultural qualities.

2 = Mainly landscape qualities.

3 = Mainly cultural values, including conservation value.

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A2.3.5 ***U (marked in red on the Tree Constraints Plan) = Trees usually unsuitable for retention due to poor condition.***

These trees are in such a condition that they cannot be realistically retained as living trees in the context of the current land use for longer than 10 years. This may be due to any of the following:

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

These trees are to be removed or managed in a way which reduces their risk of failure, where they have high ecological value, such as in a woodland setting.

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Appendix 3: General Guidelines

A3.1 All tree work should be undertaken to BS 3998: 2010 '*Recommendations for tree work'* or other recognised industry practice.

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 therein.

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 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 on a regular basis.

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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 or fruit.

Canker Disease damaged area of a tree, usually caused by fungus or bacteria affecting the bark.

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 reduction The reduction of a tree's height and spread while preserving its natural shape.

Crown thin The removal of some of the density of a tree's crown**,** usually 5-15% 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 clusters around the base of the stem of a tree or within the crown. This is usually as a result of bad pruning or some other stress factor, although can be a natural growth pattern for some species of tree (eg Lime species).

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 and principle branches of the tree are cut to the same height, 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 – Theoretical rooting area of a tree as defined in BS 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations'*.

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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 Director

Toby Thwaites *BSc (Hons), HND (Arboriculture), MArborA.*. 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 is now Technical Director and oversees all office and on-site activities at JCA and is on hand to offer technical support and advice.

Consulting Staff: Arboriculture

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.

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.

Emily Wilde *FdSc (Arboriculture).* Emily 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.

Mick Eltringham *ND (Forestry).* Mick joined JCA after spending 12 years working in the industry for various private companies in the north and south of England. He has also spent the last five years working as a consultant for two canopy research projects in the Amazon Rainforest, working with Oxford University and the University of Arizona. He has various NPTC Qualifications.

Charles Cocking *FdSc (Arboriculture), MArborA.* Charles joined JCA in January 2014 as an Apprentice having previously worked for the company on a part time basis during 2013. Charles obtained his Foundation Degree in Arboriculture at Askham Bryan College, York, and is now part of our qualified Arboricultural consultancy team.

Paul Hodgson *Cert Arb (RFS), FdSc Arb, MArborA.* Paul joined JCA after spending 11 years working in the industry and for various organisations, which included practical tree work, surveying, lecturing at Myerscough College, Arb team leader at Royal Botanic Gardens, Kew, and a number of senior management positions. Paul is a professional member of the Arboricultural Association and a member of the Kew Guild.

Dan Kemp *FdSc (Arboriculture).* Dan joined JCA with nearly 30 years' experience in arboriculture. He worked as a London Tree Officer for 12 years and in several arboricultural and horticultural management posts, specialising particularly in tree risk assessments and tree related subsidence.

Consulting Staff: Ecology

David Bodenham *BSc Ind (Hons) Zoology, MSc Biodiversity and Conservation.* David joined JCA as an addition to the expanding ecology department. An advocate of evidence based conservation, he studied Zoology (Ind) at University and moved onto an MSc in Biodiversity and Conservation where he gained the myriad of skills needed as an ecologist. With over 7 years of experience, David specialises in bat and amphibian ecology.

Amanda Beck *Cert He in Field Ecology.* Amanda joined JCA's ecology department in 2018, previously working as a freelance Ecological Consultant in North Wales and Liverpool and as a trainee Ecologist in South Wales. Amanda has extensive practical experience in surveying for botanical, amphibians, terrestrial and marine mammals along with invertebrate research work. She has practical experience in habitat management and creation and is a CIEEM student member.

Joe Earnshaw *BSc (Hons), MSc Biodiversity and Conservation, Student CIEEM Member*. Joe joined JCA's ecology department in 2018. He has a bachelor degree in Animal Management, from Askham Bryan College, York and has further obtained an MSc in Biodiversity and Conservation from the University of Leeds. Joe has expertise in aquatic invasive species identification/control and has practical experience in artificial badger sett and wetland creation. Joe is a member of the West Yorkshire Bat Group and volunteers with the Rivers Trust as part of their river monitoring project.

Administrative Staff

Sue Guest Administrative Team Leader.
Catherine Cocking Accounts Manager.
Kelly Saunders Accounts Assistant.
Simeon Haigh *BSc (Hons).* IT Director.
Lorraine Spink Administrative Assistant.
Lisa Hampson Marketing Manager.

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N
W E
S

ESTIMATED LOCATION OF DEAD ELM STEMS

G4

CONTINUATION OF G4

G3

G1

G1

G5

CONTINUATION OF G5

H2

G7

G6

G7

G6

G8

G11

G11

G11

G12

G12

CONTINUATION OF G12

G9

G10

G10

G9 & G10 ESTIMATED GROUP LOCATIONS

G10

Root Protection Area: RPA

THE ROOT PROTECTION AREA (RPA) INDICATES THE LIKELY ROOTING ZONE OF A TREE.

THIS AREA SHOULD IDEALLY REMAIN UNDISTURBED IF THE 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.

0 1 5 10 15 20 30 40 50 metres

THIS PLAN IS TO BE PRINTED IN COLOUR AND READ IN CONJUNCTION WITH THE JCA ARBORICULTURAL REPORT (JCA REF: 15058/AJB)

Appendix 6: Tree Constraints Plan

ADDRESS: Dunford Bridge Car Park and Recreational Area.
JCA REF: 15058/AJB.

SCALE : 1:500	PAPER SIZE : A2

SURVEYED BY: AJB	DRAWN BY: AJB	APPROVED BY: PaH

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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Arboricultural & Forestry Consultants

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



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Andrew Bussey.

26th June 2019
(Revised 19th November 2019)

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

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JCA Ltd. Arboricultural and Ecological Consultants
Professional Tree and Ecology Advice nationwide

ARBORICULTURAL SERVICES

Guidance for Architects and Developers

- British Standard 5837 Tree Surveys
- Arboricultural Implication Assessments (AIA)
- Arboricultural Method Statements (AMS)

Advice for Engineers, Loss Adjusters and Insurers

- Tree Surveys for Subsidence
- Heave Assessment
- Tree Root Identification

Advice for Local Authorities and Social Housing

- Tree Safety Surveys
- Specialist Decay Detection
- Landscape and Orchard Design

Tree Advice for the Legal Profession

- Subsidence Litigation
- Personal Injury and Accident Investigation
- Expert Witness, Planning Inquiries and Appeals

Veteran Tree Management

- Ancient Woodland Management
- Veteran Tree Management

Tree Health and Pest and Disease Management

- Pest and Disease Surveys
- Tree Health Checks
- Disease Mitigation and Control

ECOLOGICAL SERVICES

Ecological Pre-Planning Services

- Phase 1 Habitat Surveys
- Great Crested Newt eDNA Sampling
- Protected Species: Bat, Wintering and Nesting Bird, Badger, Amphibian, Otter, Water Vole, White-Clawed Crayfish, Dormice and Reptile Surveys.
- Preparation for Environmental Impact Assessment (EIA)
- Invasive Species Surveys
- Code for Sustainable Homes

Ecological Post-Planning Services

- Biodiversity Enhancement Plans
- Protected Species Mitigation
- Ecological Management (Bat and Bird box installation and inspection)



HEAD QUARTERS:

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