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

Client:
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11819B/AJB



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Contents

1. Introduction 3

2. Site Description 5

2.1 Land Use 5

2.2 Topography 5

2.3 Treescape 5

2.4 Visual Amenity Value 5

2.5 Age Class Mix 5

2.6 Species Diversity 5

3. Status of the Trees 6

4. Tree Descriptions and Recommendations 6

5. Discussion Relating to the Existing Treescape 6

5.1 Tree Condition & Recommended Works 6

6. Arboricultural Implications Assessment (AIA) 7

6.1 Proposed Development 7

6.2 Tree Removals for Development 7

6.3 Pruning for Development 7

6.4 Implications for Retained Trees 8

6.5 Remedial Measures 10

7. Conclusions 11

Appendix 1: Tree Descriptions and Recommendations 13

Appendix 2: Explanation of Tree Descriptions 14

Appendix 3: General Guidelines 17

Appendix 4: Glossary of Terms & Abbreviations 18

Appendix 5: Author Qualifications 20

Appendix 6: Tree Constraints Plan 21

Appendix 7: Arboricultural Implications Plan 22

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1. Introduction

1.1 Purpose of the Report

1.1.1 This report is required at **Carrs Lane in Cudworth, Barnsley** 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 assess the impact of the proposals on the existing tree stock and outline mitigation actions, where appropriate, to minimise potential damage to the trees which are to be retained. The report includes an assessment of the existing vegetation, along with recommendations based on the current context of the site; clearly defined from those required to facilitate the 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 the 3rd of 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 This report is compiled in accordance with *BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'* and is based on an objective assessment of the existing vegetation.

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

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 is detailed on the plan at **Appendix 7**.

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1.4 Survey Details

1.4.1 The survey took place during 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.

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.

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6. Arboricultural Implications Assessment (AIA)

6.1 Proposed Development

6.1.1 A residential development consisting of 278 dwellings is proposed on site.

6.1.2 The proposals also include access roads, driveways, garages, hard and soft landscaping and areas of public open space.

6.1.3 Drawing No. **YW-04-03-Z** 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 Tree Removals for Development

6.2.1 **G2, T3, G4, T6, T7, G8, G9, G14, G16,** sections of **G17, T18, T24, G25, G26, H27,** sections of **G30,** sections 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 above 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.

6.3 Pruning for Development

6.3.1 The off site trees forming **G10** will need to be pruned back and crown lifted on their southern aspect to accommodate the proposals.

6.3.2 The footprint of the proposed garages of Plot 122 and Plot 123 will encroach into the RPAs of the off site trees (**G10**), as highlighted in blue on the Development Proposals Plan at **Appendix 7**. Root pruning under the supervision of an appointed arboriculturist will therefore be required. Root pruning will accommodate the proposed structure structures whilst preventing any 'ripping' damage, a problem commonly associated with mechanical excavations.

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6.4 Implications for Retained Trees

6.4.1 The Protective Barrier

6.4.1.1 In order to ensure the effective protection of retained trees during development, a protective barrier will be installed, in accordance with BS5837: 2012 and may comprise of protective fencing and/or ground protection. This will be the first job on site following the tree removal and pruning works. The fencing should ideally be positioned to protect the entire **Root Protection Area** (**RPA**) of the retained trees, in order to create a **Construction Exclusion Zone** (**CEZ**).

6.4.1.2 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 (ground protection) 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. Such surfaces should be constructed in accordance with BS5837: 2012.

6.4.2 Access/Construction of Hard Surfacing

6.4.2.1 In this case, the proposed scheme does not require the construction of access roads, driveways or other hard surfaces within the RPA of retained trees. As such no specialised construction techniques/surface treatments will be required for this purpose.

6.4.2.2 Whilst no permanent surfaces are required within the RPA of retained trees, it may be necessary to lay temporary access routes during the construction phase. Where access is required within the RPA, a combination of protective barriers and ground protection will be implemented to prevent damage to tree roots.

6.4.2.3 The chosen solution must be fit for purpose and suitable for its intended use, whether for pedestrian or vehicular access. It must dissipate compaction to the soil (which can damage roots), allow gaseous diffusion to/from the soil and allow water percolation through the soil surface. The specific construction principles of any required surfaces should be included in an Arboricultural Method Statement and confirmed by a suitably qualified engineer.

6.4.3 Demolition

6.4.3.1 No significant demolition activities are required adjacent to retained trees and as such, no mitigation measures are considered necessary.

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6.4.4 Construction / Foundation Design.

6.4.4.1 Prior to construction, all protective measures required are to be correctly installed to prevent unnecessary damage during development.

6.4.4.2 With the exception of the garages of Plot 122 and Plot 123, the footprints of the proposed structures do not incur the RPA of retained trees. As such no specialist construction or foundation methods are considered necessary for the sole purpose of preventing damage to trees.

6.4.4.3 Despite this, specialist foundation designs may still be required for other reasons, and advice should always be sought from a suitably qualified structural expert. The water demand of trees can be an important consideration when determining the appropriate foundation design. Because of this, water demands for the trees identified on this site are included at **Appendix 1**, in accordance with **NHBC Chapter 4.2**, for use by the appointed structural expert.

6.4.4.4 Due to the location of the trees, and their distance from to the proposed buildings, issues related to shading are considered to be unlikely and do not require mitigation.

6.4.4.5 **Utilities**

6.4.4.6 Details on service routes are not available at this time. Where utilities need to be brought onto the site, these should be routed away from the RPAs of retained trees. Where this is not possible, methodologies on the installation of underground services without damage to tree roots should be considered.

6.4.4.7 All service providers should be consulted prior to commencement of works with the aim of minimising the number of service runs on the site. Any foreseeable incursions to RPAs should be communicated to the appointed arboricultural consultant and the LPA at the earliest possible time to prevent breach of planning conditions and damage to retained trees.

Site Compound

6.4.4.8 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.

6.4.4.9 Care should also be taken to prevent soil contamination with chemical spillages, including petrol, diesel and oils.

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6.4.5 Landscaping

6.4.5.1 Any proposed fence lines may be constructed within the RPA if necessary, providing that appropriate considerations are made to the protection of the tree. This is providing that no continual trenching is undertaken (e.g. for small walls onto which panel fencing is installed). Excavation must be kept to a minimum and therefore only fence designs requiring intermittent posts will be acceptable within the RPA of retained trees.

6.4.5.2 Any patios, garden paths or other hard surfaces within RPAs which may not be shown on the projected layout (**Appendix 7)** may be constructed using no-dig techniques, providing that they do not cover more than 20% of the RPA and are implemented in accordance with BS5837: 2012. If there is any concern of damaging retained trees, further advice should be sought from a qualified Arboriculturalist.

6.4.5.3 No ground level changes are to be undertaken within the RPA of retained trees, unless otherwise stated or agreed with the appointed Arboricultural consultant or the LPA. The requirement to raise/lower ground levels within RPAs should be communicated to these parties at the earliest practical convenience.

6.5 Remedial Measures

6.5.1 Part of the proposed development will encroach into the RPAs of retained trees, resulting in possible root loss. It would therefore be prudent to apply mycorrhizal fungi to the soils around these trees after the construction phase is complete. Mycorrhizae are fungi that form symbiotic relationship with tree roots. A tree root associated with mycorrhiza takes up nutrients more effectively and this will therefore help the trees to produce new roots more effectively, so benefitting their recovery.

6.5.2 The site offers scope for landscaping and tree planting. Should new planting be desired, then the areas identified for the new planting should also be protected by fencing during the construction phase to prevent the compaction of the soil.

6.5.3 In addition to any new planting, where there are existing young trees which require removal in order to facilitate the proposed development, consideration should be given to transplanting such trees to a more suitable location elsewhere on site.

6.5.4 In order to protect the retained trees during the construction phase, protective fencing needs to be installed. Protective fencing specifications and on site positioning, along with details of any necessary specialist construction methods can be provided in an Arboricultural Method Statement (AMS).

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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.	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. *Prune back and crown lift to facilitate the proposed development.*	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. *Remove 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
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 sections 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/ 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; 0, 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 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 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 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 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 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 tree work must 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 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 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.

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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 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 5-25% 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 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).

Formative pruning The pruning of a tree to remove weaknesses and irregularities which may lead to future problems. The formative pruning operation is aimed at reducing the potential for future weaknesses or problems within the tree's crown and to encourage an optimal canopy shape.

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.

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RPA Root Protection Area – 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

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 is now Technical Coordinator 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.

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.

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. 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 Askham Bryan College, York, undertaking a two year course in order to obtain a Foundation Degree in Arboriculture (FdSc Arboriculture).

Consulting Staff: Ecology

David Ryder David 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 joined JCA's ecology department and 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).

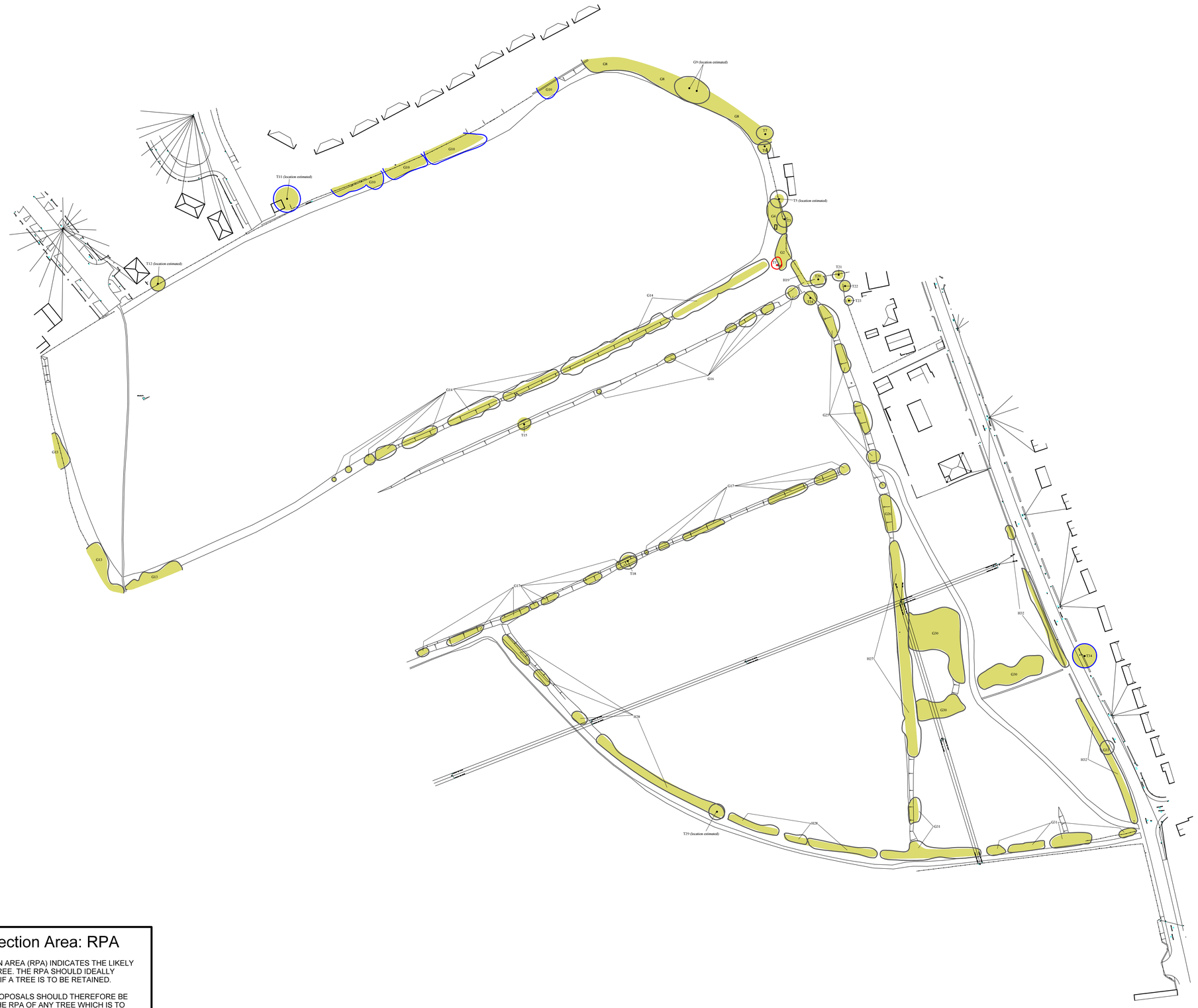
David Bodenham *BSc Ind (Hons) Zoology, MSc Biodiversity and Conservation.* David joined JCA as an addition to the expanding ecology department. An advocate of evidence based conservation, he studied Zoology (Ind) at University and moved onto an MSc in Biodiversity and Conservation where he gained the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

Freya Olsson *BSc (Hons) Biology and Geography (within Natural Sciences).* Freya joined the Ecology department in July 2016 following a 6 week placement in the summer of 2015. Freya studied at Durham University gaining a degree in Biology and Geography (Joint Honours within Natural Sciences). She has extensive field and analytical experience, giving her the core skills required as an ecologist.

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: 11819B/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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Arboricultural & Forestry Consultants



Appendix 7: Arboricultural Implications Plan

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

SCALE : 1:1000	PAPER SIZE : A1

Symbol	Key
Green ellipse	TREE TO BE RETAINED
Red ellipse	TREE TO BE REMOVED
Black dot	STEM OF TREE TO BE RETAINED
Red dot	STEM OF TREE TO BE REMOVED
Yellow-green disc	ROOT PROTECTION AREA
Blue half-disc	ROOT PROTECTION AREA ENCROACHED BY THE PROPOSED DEVELOPMENT
Orange line	PROPOSED DEVELOPMENT

JCA Limited

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



.....

Andrew Bussey.

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

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ARBORICULTURAL SERVICES

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- 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)



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