ARBORICULTURAL REPORT
AND
ARBORICULTURAL IMPACT ASSESSMENT
to BS 5837:2012
at
1 Southlands Drive
Fixby
Huddersfield
West Yorkshire
HD2 2LT

Client:
Mr Donnan

Client Address:
1 Southlands Drive
Fixby
Huddersfield
West Yorkshire
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JCA Ref:
17022/AJB

JCA Limited
Arboricultural & Ecological Consultants

Contents

1. Introduction

1.1 Purpose of the Report

1.1.1 This report is required at **1 Southlands Drive, Fixby, Huddersfield,** 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 JCA Ltd has been instructed by **Mr Donnan**, to survey the trees and prepare the findings in a report.

1.2.2 For this purpose a topographical survey has been supplied (**Drawing No. 8239**), 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 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 The specific design of the proposed development has been considered within the Arboricultural Impact Assessment in **Section 6** and is detailed on the Arboricultural Implications Plan at **Appendix 7**.

1.4 Survey Details

1.4.1 The survey took place during the month of April 2021 and was conducted by Andrew Bussey *LANTRA Accredited PTI.*

1.4.2 During this survey, all trees were inspected from ground level. Further investigation, such as climbed inspections or decay detection surveys, 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

2.1.1 The property is occupied by a semi-detached house and its associated garden areas.

2.2 Topography

2.2.1 The site slopes from the southwest down to the north-eastern boundary.

2.3 Treescape & Visual Amenity Value

2.3.1 The surveyed trees collectively provide a good addition to the local treescape and visual amenity value of the immediate vicinity.

2.4 Age Class Mix

2.4.1 The trees surveyed ranged in age from semi-mature to mature.

2.5 Species Diversity

2.5.1 Species surveyed include Leyland Cypress, Sycamore, Cherry, Whitebeam, Hornbeam and English Oak.

3. Status of the Trees

3.1 A check was made on 19th May 2021 with **Kirklees Metropolitan Council**.

3.2 We are informed that there is are a number of Individual Tree Preservation Orders in force on this site.

3.3 Before any work is organised to protected trees, an application form must be submitted to the Local Authority, outlining all the proposed works along with suitable justification. A waiting period of eight weeks is then required, after which time the council will either give consent to the works, refuse the works or grant a conditional consent.

No work must be undertaken on protected trees until permission has been granted.

3.4 The presence of a Tree Preservation Order (TPO) represents the Local Authority's desire to retain trees within the landscape. As such, trees covered by a TPO are generally more likely to require retention within a proposed scheme and this should be taken into account during the design process. In some cases, the removal of TPO trees may be agreed upon, providing the benefits of the proposed development are deemed greater than the material loss of the trees. The value of existing vegetation is just one factor in the decision making process; all benefits of the proposed development will be taken into consideration in the usual manner.

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 **21** items of vegetation (**21** individual trees and **1** hedge). Of these, **10** trees were identified as retention category 'B', **8** trees and **1** hedge were identified as retention category 'C' and **2** trees were identified as category 'U'. 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. These recommendations have been made without regard to any proposed layout designs and should be undertaken irrespective of development. For full details of all recommendations, please refer to **Appendix 1**. For an explanation and timescales of the priority ratings, please refer to **Appendix 2 (A2.2.5)**.

5.2 Removals Irrespective of Development

5.2.1 **T11** and **T13** have been recommended for removal as a matter of **moderate priority** due to the defects detailed at **Appendix 1**.

5.3 Remedial Tree Works

5.3.1 **T15** has been recommended for crown thinning as a matter of **moderate priority**, as detailed at **Appendix 1**.

5.3.2 Those trees which overhang public footpaths or public highways shall require future maintenance in order to maintain clearance heights for vehicular or pedestrian traffic. These heights should be 5.6m above a road and 2.5m above a footpath.

5.4 Monitoring / Further Investigations

5.4.1 **T2, T19** and **T20** were noted to have structural defects, as detailed at **Appendix 1**. Although these trees were considered to be in an acceptable condition at the time of the inspection, the defects observed may lead to their early demise or render them unsafe in the future. As such, it is recommended that these trees be monitored (re-inspected and assessed) on an annual basis to assess if their condition is still acceptable.

5.5 Ground level Remediation Work

5.5.1 Raised ground level changes have occurred within the rooting zones of **T3** and **T4**. As this can be detrimental to tree health it is recommended that the ground levels are reinstated back to normal by manual means only.

6. Arboricultural Impact Assessment (AIA)

6.1 Proposed Development

6.1.1 The proposed development will consist of the construction of a single-storey extension with associated exterior stairs and a patio area.

6.1.2 Drawing Ref. **Donnan layout** has been supplied by the clients architect; 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 No trees are required to be removed to accommodate the proposed scheme.

6.3 Pruning for Development

6.3.1 Due to the high canopies of those trees adjacent to the proposed extension (**T2** and **T3**), no pruning works are required in order to accommodate the proposals.

6.4 Temporary Protection Measures

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 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 will be located outside, and diverted away from, the RPAs of the retained trees wherever possible. Where this is not practicable, temporary protective surfaces (ground protection) must be laid over the exposed RPAs to reduce/limit soil compaction. The ground protection must therefore distribute the weight of site vehicles, machinery or pedestrians whilst allowing moisture to reach the tree rooting area beneath. Such surfaces must be constructed in accordance with BS5837: 2012.

6.5 Implications for Retained Trees

6.5.1 Works within the RPA

6.5.1.1 Where the proposals require work to be undertaken within the RPA of a tree which is to be retained, specialist measures must be adopted during the construction phase to avoid ground compaction and minimise root damage.

6.5.1.2 Such areas are highlighted in blue and brown shade on the Arboricultural Implications Plan at **Appendix 7** and are addressed in the following sections.

6.5.2 Demolition

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

6.5.3 Construction of Hard Surfacing

6.5.3.1 Prior to construction, all protective measures required and listed in **Section 3.4** (Temporary Protection Measures) must be correctly installed to prevent unnecessary damage to trees during the construction phase.

6.5.3.2 The proposed development entails the construction of a patio within the RPA of **T3** and **T20**. In order to prevent foreseeable damage to tree roots, a 'no-dig' method of construction will be utilised.

6.5.3.3 The chosen system must be fit for purpose and of suitable construction to dissipate compaction damage to tree roots, allow gaseous diffusion to/from the soil and the percolation of water to the soil surface. This may require the use of specialist materials and sensitive edging systems to prevent damage to tree roots.

6.5.3.4 Design principles must be confirmed by an appropriately qualified engineer and should be included in an Arboricultural Method Statement.

6.5.4 Construction/ Foundation Design

6.5.4.1 The footprint of the proposed extension and associated exterior staircase incurs the RPA of **T2** and **T3**. Due to this, a specialist foundation design must be implemented to reduce excavation and the detrimental impact this can have on tree roots.

6.5.4.2 This method will minimise foreseeable damage and will allow the retention of these trees, whilst accommodating the proposed development. Full details of these works should be included in an associated Arboricultural Method Statement, along with any phasing of protection methods and arboricultural supervision which may be necessary.

6.5.4.3 Advice should always be sought from a suitably qualified Structural Engineer. In some cases, 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 the use of the appointed structural expert.

6.5.4.4 **Utilities**

6.5.4.5 The routing of proposed utilities is to be situated outside the RPAs of retained trees. As such, no mitigation actions are considered necessary to mitigate potential damage to tree roots.

6.5.5 Site Compound

6.5.5.1 The site compound, which typically includes the mess facilities, toilets, storage of materials and parking, must be located away from the trees and outside the RPAs.

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

7. Conclusions

7.1 The trees are protected by a Tree Preservation Order.

7.2 **T11** and **T13** have been recommended for removal for arboricultural reasons, as discussed in **Section 5.1.2** and detailed at **Appendix 1**.

7.3 **T2** has been recommended for pruning works for reasons of public safety and to enhance its long term health, as detailed in **Section 5.1.3** and detailed at **Appendix 1**.

7.4 **T2, T19** and **T20** require an annual inspection as they have structural defects. These are discussed in **Section 5.1.4** and detailed at **Appendix 1**.

7.5 The proposed development will consist of the construction of a single-storey extension with associated exterior stairs and a patio area.

7.6 No tree works are required in order to facilitate the proposed development.

7.7 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 trees are suitably protected.

7.8 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.

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
H 1	Early-mature Leyland Cypress *X Cupressocyparis leylandii*	To 3	0+	0+ n/a	To 8	See plan	A maintained boundary hedge.	No action required. n/a	GOOD	GOOD	LOW	HIGH	20+	C 2
T 2	Mature Sycamore *Acer pseudoplatanus*	19	9	7 N	70, 58	7 7.5 6.5 7.8	Overhanging the footpath and the road. Twin-stemmed at ground level with a balanced crown. Multiple pruning wounds due to crown lifting, some with minor decay. Included bark present at the stem junction.	Crown thin by no more than 15 % in order to reduce the effect that strong winds will have on the stem junction. Monitor annually thereafter. Moderate	GOOD	FAIR	MOD	MOD	20+	B 1
T 3	Mature Sycamore *Acer pseudoplatanus*	18	9	6 N	58	6 4.5 5 5.6	Twin-stemmed at 5m with a balanced crown. Occasional pruning wounds. Ground level changes within the rooting zone due to piled earth.	Restore the ground levels within the trees rooting zone back to normal by manual means only. Moderate	GOOD	GOOD	MOD	MOD	40+	B 1
T 4	Early-mature Sycamore *Acer pseudoplatanus*	16	7	6 n/a	36	4 2.5 4 4.8	Single-stemmed and vertical with an unbalanced crown. Occasional pruning wounds. Ground level changes within the rooting zone due to piled earth.	Restore the ground levels within the trees rooting zone back to normal by manual means only. Moderate	GOOD	GOOD	MOD	MOD	40+	B 1
T 5	Early-mature Sycamore *Acer pseudoplatanus*	17	6	6 n/a	37	7 4.5 5 4.5	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects.	No action required. n/a	GOOD	GOOD	MOD	MOD	40+	B 1
T 6	Early-mature Cherry *Prunus sp*	5	2.5	2.5 n/a	25	3 4 2.8 3	Overhanging the footpath and the road. Single-stemmed and vertical with a balanced crown. Occasional pruning wounds. No major visible defects. Witches Broom noted in the crown.	No action required. n/a	GOOD	GOOD	LOW	MOD	40+	C 1
T 7	Semi-mature Whitebeam *Sorbus aria*	7	2.5	2.5 n/a	16	2 2 2 2	Overhanging the footpath. Single-stemmed and vertical with a balanced crown. Occasional pruning wounds. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	MOD	40+	C 1
T 8	Semi-mature Cherry *Prunus sp*	7	2	2 n/a	20	3 2 3 2.5	Overhanging the footpath and the road. Single-stemmed with a slight lean and a reasonably balanced crown. Occasional pruning wounds. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	MOD	40+	C 1
T 9	Semi-mature Whitebeam *Sorbus aria*	7	2	2 n/a	21	2.3 2.3 2.3 2	Overhanging the footpath and the road. Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	MOD	40+	C 1
T 10	Semi-mature Whitebeam *Sorbus aria*	7	2	2 n/a	17	2 2 2 2	Overhanging the footpath. Single-stemmed and vertical with a balanced crown. Occasional pruning wounds. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	MOD	40+	C 1

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
T 11	Early-mature Cherry *Prunus sp*	14	5	3 n/a	38	6 4.5 4.5 3.5	Overhanging the footpath and the road. Twin-stemmed at 1.5m with a balanced crown. Significant included bark present at the stem junction. This tree is likely to fail in the short term.	Remove to ground level. Moderate	GOOD	POOR	MOD	MOD	<10	U
T 12	Semi-mature Whitebeam *Sorbus aria*	6	2	2 n/a	15	2 1 2 2	Single-stemmed and vertical with a slightly unbalanced crown. Occasional pruning wounds. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	MOD	20+	C 1
T 13	Early-mature Cherry *Prunus sp*	14	2	5 n/a	25 x 2	5 4.5 5 3	Overhanging the footpath and the road. Twin-stemmed at ground level with a balanced crown. Significant included bark present at the stem junction. This tree is likely to fail in the short term.	Remove to ground level. Moderate	GOOD	POOR	MOD	MOD	<10	U
T 14	Semi-mature Whitebeam *Sorbus aria*	6	3	3 n/a	13	2 1 2 1	Overhanging the footpath. Single-stemmed and leaning with an unbalanced crown. Occasional pruning wounds. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	MOD	20+	C 1
T 15	Early-mature Cherry *Prunus sp*	14	2	5 E	42	4.5 2 6.5 4.5	Overhanging the footpath and the road. Single-stemmed with a slight lean and a reasonably balanced crown. Occasional pruning wounds. No major visible defects.	No action required. n/a	GOOD	GOOD	MOD	MOD	40+	B 1
T 16	Semi-mature Hornbeam *Carpinus betulus*	6	2	2 n/a	16	2 1.5 3 2.5	Single-stemmed with a slight lean and a reasonably balanced crown. No evidence of significant pruning. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	LOW	40+	C 1
T 17	Mature English Oak *Quercus robur*	16	6	5 n/a	48#	7# 6.5# 3# 7#	Twin-stemmed at 2m with an unbalanced crown. Occasional pruning wounds, some leaving stubs. Ivy and poor terrain prevented a detailed inspection.	No action required. n/a	GOOD	GOOD	MOD	HIGH	40+	B 1
T 18	Mature Sycamore *Acer pseudoplatanus*	18	4	4 n/a	59	4 8 9 9	Single-stemmed and vertical with a slightly unbalanced crown. Occasional pruning wounds. No major visible defects. Minor deadwood noted.	No action required. n/a	GOOD	GOOD	MOD	MOD	40+	B 1
T 19	Mature Sycamore *Acer pseudoplatanus*	19	5	6 n/a	58, 48	8 6.5 12 6.5	Twin-stemmed at ground level with an unbalanced crown. Occasional pruning wounds due to lifting and thinning. The northernmost co-dominant stem has a significant lean and a potentially weak union is present at the stem junction.	Monitor annually. Moderate	GOOD	FAIR	MOD	MOD	20+	B 1
T 20	Mature Sycamore *Acer pseudoplatanus*	17	7	7 n/a	39, 38	5 6 4 6	Twin-stemmed at ground level with a balanced crown. Occasional pruning wounds due to lifting and thinning. A potentially weak union is present at the stem junction.	Monitor annually. Moderate	GOOD	FAIR	GOOD	FAIR	MOD	B 1
T 21	Mature Sycamore *Acer pseudoplatanus*	17	4	5 n/a	49	6.5 3 6.5 3.5	Single-stemmed with a slight lean and a reasonably balanced crown. No evidence of significant pruning. No major visible defects.	No action required. n/a	GOOD	GOOD	MOD	MOD	40+	B 1

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.

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 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.

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.

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.

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 5-15% 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.

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.

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

Andrew Bussey. Andrew started working in consultancy at JCA in 2006 having spent 12 years working as an arborist for various private companies before joining a Local Authority forestry team. He has various NPTC qualifications, is QTRA qualified and is a LANTRA Accredited Professional Tree Inspector.

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.

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.

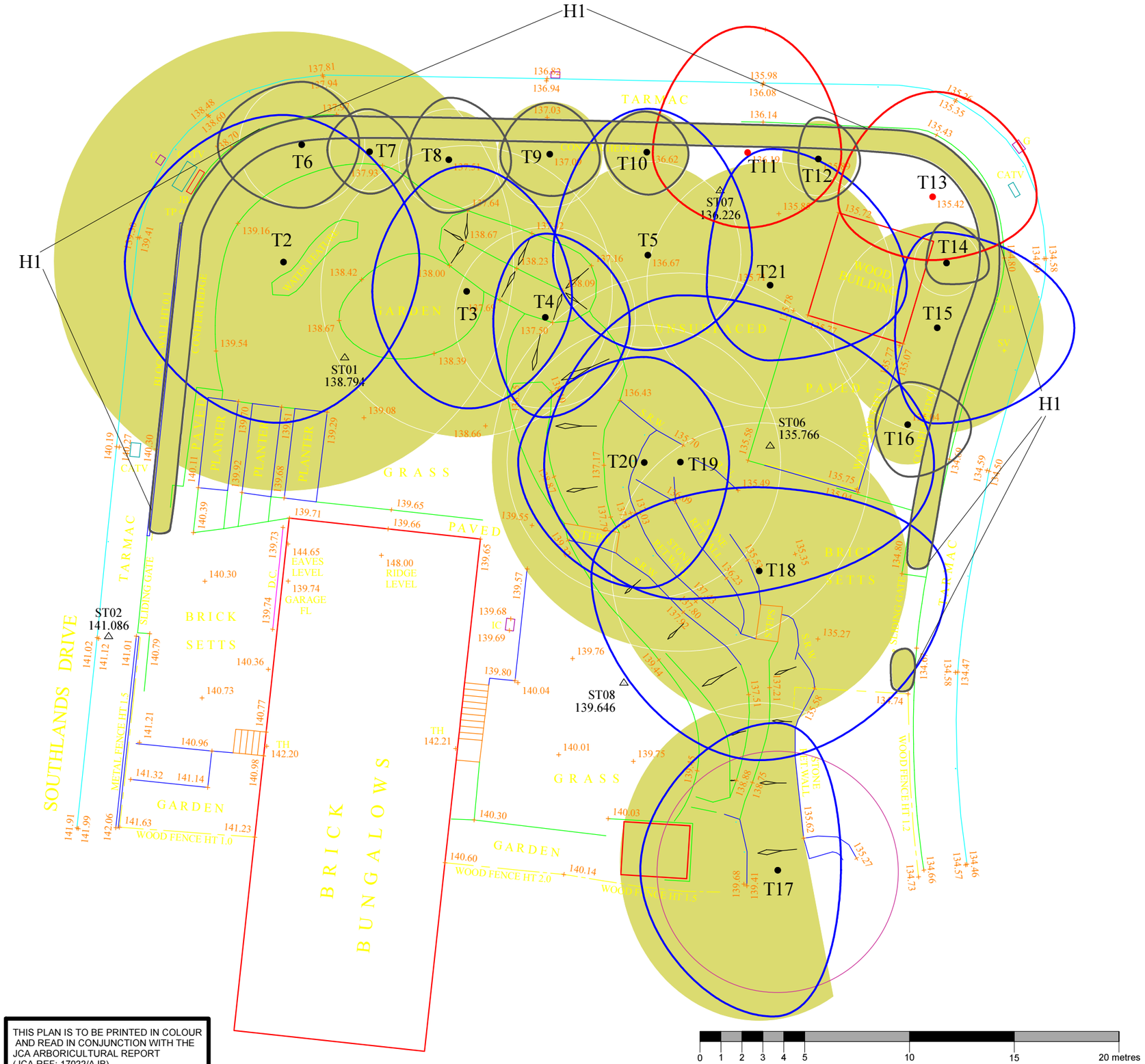
Ryan Bateman *BSc (Hons), FdSc (Arboriculture), TechArborA.* Ryan joined JCA in 2020 after working as a Lecturer on the Foundation Degree in Arboriculture at Askham Bryan College in York. Ryan has both practical skills, NPTC qualifications and theoretical knowledge and owned his own contracting business prior to, and whilst working as a lecturer.

Consulting Staff: Ecology

Joe Earnshaw, Graduate Ecologist *BSc (Hons), MSc Biodiversity and Conservation, Qualifying CIEEM Member.* Joe joined the ecology department of JCA in 2018 after taking part in JCA's student training programme. He initially obtained a bachelor degree in Animal Management from Askham Bryan College, York. He has since furthered his education and brings to the company an MSc in Biodiversity and Conservation from the University of Leeds. Joe has expertise in aquatic invasive species identification and control.

Administrative Staff

Simeon Haigh *BSc (Hons).* IT Director.
Catherine Cocking Accounts Manager.
Kelly Saunders Accounts Assistant.
Lorraine Spink Administrative Assistant.
Lisa Beedham Marketing Manager.



Root Protection Area: RPA

THE ROOT PROTECTION 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.

THIS PLAN IS TO BE PRINTED IN COLOUR AND READ IN CONJUNCTION WITH THE JCA ARBORICULTURAL REPORT (JCA REF: 17022/AJB)

Appendix 6: Tree Constraints Plan

ADDRESS: 1 Southlands Drive, Fixby, Huddersfield, West Yorkshire, HD2 2LT.
JCA REF: 17022/AJB.

SCALE : 1:200	PAPER SIZE : A3

SURVEYED BY: AJB	DRAWN BY: AJB	APPROVED BY: CC

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
	ROOT PROTECTION AREA (PRIOR TO OFF-SETTING)

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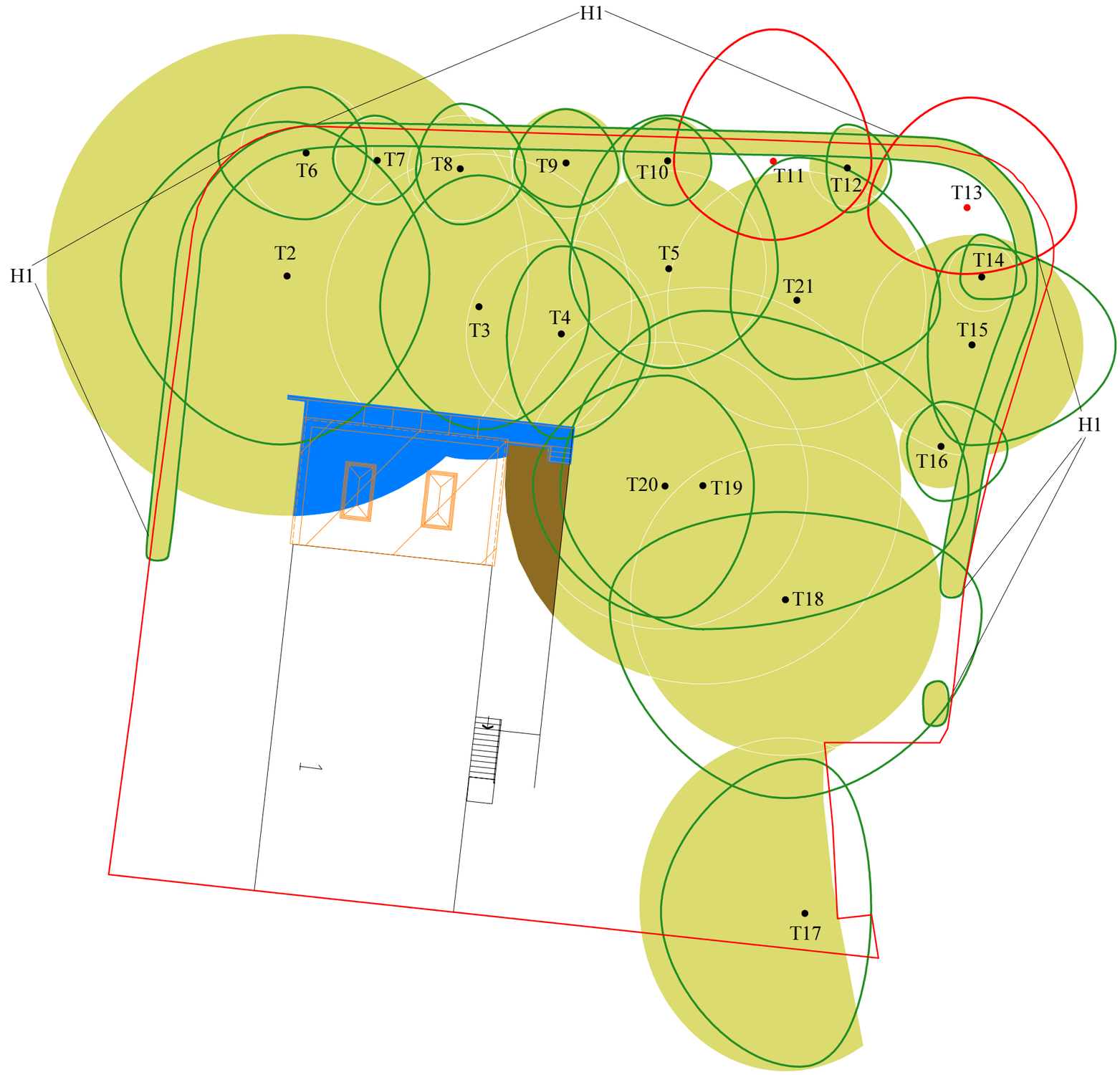

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Appendix 7: Arboricultural Implications Plan

ADDRESS: 1 Southlands Drive, Fixby, Huddersfield, West Yorkshire, HD2 2LT. JCA REF: 17022/AJB.

SCALE : 1:200	PAPER SIZE : A3

	TREE TO BE RETAINED
	TREE TO BE REMOVED
	STEM OF TREE TO BE RETAINED
	STEM OF TREE TO BE REMOVED
	ROOT PROTECTION AREA
	ROOT PROTECTION AREA ENCROACHED BY THE PROPOSED DEVELOPMENT' SPECIALIST CONSTRUCTION TECHNIQUES MUST BE USE WITHIN THIS AREA
	ROOT PROTECTION AREA ENCROACHED BY THE PROPOSED HARD STANDING, THE NO-DIG METHOD OF CONSTRUCTION MUST BE USED WITHIN THIS AREA
	PROPOSED DEVELOPMENT

JCA Limited

Arboricultural & Ecological Consultants

THIS PLAN IS TO BE PRINTED IN COLOUR AND READ IN CONJUNCTION WITH THE JCA ARBORICULTURAL REPORT (JCA REF: 17022/AJB)

0 1 2 3 4 5 10 15 20 metres

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

Signed

.....

Andrew Bussey *LANTRA Accredited PTI.*

19th May 2021

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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