ARBORICULTURAL IMPACT ASSESSMENT
to BS 5837:2012
at
Land off Ashbrow Road
Huddersfield
West Yorkshire
HD2 1DX

Client:
Northlight Architecture Ltd

Client Address:
The Media Centre
7 Northumberland Street
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JCA Ref:
17829-B/AJB

JCA Limited
Arboricultural & Ecological Consultants

Contents

1. Introduction

1.1 Purpose of the Report

1.1.1 This Arboricultural Impact Assessment has been prepared for the proposed development at **Land off Ashbrow Road**, **Huddersfield**, **HD2 1DX**.

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 retained trees.

1.2 Terms of Reference

1.2.1 JCA Limited has been instructed by **Northlight Architecture Ltd** to prepare an Arboricultural Impact Assessment, based on our Arboricultural Report dated 26th November 2021 (JCA Ref: **17829-A/AJB**). The arboricultural survey and report conform to the most recent specifications outlined in BS 5837: 2012 Trees in relation to design, demolition and construction - Recommendations.

1.2.2 We have been supplied with **Drawing Ref. PDAP Ashbrow - AL01 - Proposed Site Plan D**, which details the proposed development. The tree data has been overlaid onto the proposed designs to create the Arboricultural Implications Plan, which can be found at **Appendix 7**. This provides the basis for which this Arboricultural Impact Assessment has been prepared.

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 The specific design of the proposed development has been considered within the Arboricultural Implication Assessment in **Section 3** and is detailed on the Arboricultural Implications Plan at **Appendix 7**.

1.4 Survey Details

1.4.1 The original survey took place during the month of November 2021 and an additional survey was undertaken in May 2022. Both surveys were conducted by **Andrew Bussey** *LANTRA Accredited PTI.*

2. Tree Descriptions and Recommendations

2.1 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.

3. Arboricultural Implications Assessment (AIA)

3.1 Proposed Development

3.1.1 The proposed development will consist of the construction of a Retreat administration building and five dwellings with associated access driveways, car parking spaces and other ancillary features which include bin stores and areas of hard and soft landscaping.

3.1.2 All tree works required to accommodate the proposals are detailed in *italics* in the recommendation columns of the tables at **Appendix 1**. Please note that any works recommended during the initial survey are also listed in these tables in non-italics.

3.2 Tree Removals for Development

3.2.1 To facilitate the proposed development or to allow additional sunlight to the proposed dwellings (as detailed at **Appendix 1**), it will be necessary to remove **T2, T9, T18, T20, T22, G23, T24, T26,** two trees within **G27** and **T28**. Of these, **T9, T18** and **G27** fall into retention category 'B' and **T2, T20, T22, G23, T24, T26** and **T28** fall into retention category 'C'.

3.2.2 The removal of trees for development can often be mitigated (either partially or entirely) by the planting of suitable specimens within a landscaping scheme. Whilst not always necessary, the planting of trees can improve the aesthetic value of the surrounding area and may be conditioned in the usual manner.

3.3 Pruning for Development

3.3.1 **T30** requires pruning to facilitate the proposed development, as detailed at **Appendix 1**.

3.4 Temporary Protection Measures

3.4.1 The Protective Barrier

3.4.1.1 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, to create a **Construction Exclusion Zone** (**CEZ**).

3.4.1.2 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 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.

3.5 Implications for Retained Trees

3.5.1 Works within the RPA

3.5.1.1 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.

3.5.1.2 Such areas are highlighted in **blue** shade and a **brown** line on the Arboricultural Implications Plan at **Appendix 7**.

3.5.2 Demolition

3.5.2.1 To meet the needs of this proposal, the demolition of existing garage is required within the RPA of **G29**. These operations must be undertaken under arboricultural supervision to minimise the risk of damage to these trees. Full details demolition methods should be included in an Arboricultural Method Statement.

3.5.3 Access/Construction of Hard Surfacing

3.5.3.1 We are informed that the surface of the existing driveway/car parking spaces to the northwest of the site is to be removed and replaced with a porous surface. However, the proposed development entails the construction of additional hard surfacing in the form of and extension of the existing driveway/car parking spaces to the west and the construction of a new driveway and car parking to the northeas.

3.5.3.2 In these area shown in blue shade on the plan at **Appendix 7**, to prevent foreseeable damage to tree roots, a ‘no-dig’ method of construction will be utilised.

3.5.3.3 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. It is recommended that this surfacing be constructed as an initial phase of construction, to afford the maximum protection to trees throughout the construction phase.

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

3.5.4 Construction / Foundation Design

3.5.4.1 Prior to construction, all protective measures required and listed in **Section 3.4** (Temporary Protection Measures) and **Section 3.5.3** (hard surfaces) need to be correctly installed to prevent unnecessary damage during development.

3.5.4.2 The footprint of the proposed block of dwellings does 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.

3.5.4.3 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.

3.5.5 Utilities

3.5.5.1 Full details on service routes have not been provided to JCA 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.

3.5.5.2 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.

3.5.6 Site Compound

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

3.5.7 Landscaping

3.5.7.1 Proposed fence lines may be constructed within the RPA of a tree if necessary, providing appropriate considerations are taken with regards to the well-being of the effected tree. As such, no continual trenching is to be undertaken within the RPA (e.g. for small walls onto which panel fencing is installed). Excavations must be kept to a minimum and therefore only fence designs requiring intermittent posts will be acceptable within the RPA. Fences should also be kept as far away from the main stems of the trees as is reasonably possible.

3.5.7.2 Any patios, garden paths or other hard surfaces within RPAs which may not be shown on the projected layout (**Appendix 7)**, and in addition to those mentioned in **Section 3.5.3** (hard surfacing), may be constructed using no-dig techniques, 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.

3.5.7.3 No ground level changes are to be undertaken within the RPAs 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 must be communicated to these parties at the earliest practical convenience.

4. Conclusions

4.1 We are informed that there is are multiple Individual and Group Tree Preservation Orders (**TPO Refs: 16/14/ t1, t2** and **t3** and **16/14/g1, g2, g3** and **g4**) in force on this site which appear to afford protected status to the trees detailed as **T1, T3, T4, T5, T6, T7, T8, T9, T10**, two central trees within **G14, G25, T26, G29, T30** and **G31** within this report.

4.2 Some tree works were recommended during the original survey, irrespective of the development proposals. This is to manage potential risks or for general maintenance purposes. These are detailed in **non-italics** in the tables at **Appendix 1**.

4.3 The proposed development will consist of the construction of five dwellings with associated access driveways, car parking spaces and other ancillary features which include bin stores and areas of hard and soft landscaping.

4.4 The arboricultural implications of the development have been considered and are discussed in **Section 3**.

4.5 **T2, T18, T20, T22, H23, T24, T26,** two trees within **G27** and **T28** require removal and **T30** requires pruning work to facilitate the proposed development. Tree works required to accommodate the proposals are detailed in ***italics*** in the table at **Appendix 1**. Those trees requiring removal are shown in red on the Arboricultural Implications Plan at **Appendix 7**, where the proposals can also be viewed.

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

4.7 The protection of retained trees can be achieved by the creation of a Construction Exclusion Zone based on the Root Protection Area of a tree. The Root Protection Area of each tree or group is marked on the Tree Constraints Plan at **Appendix 6**.

4.8 The proposed development will be accompanied by an Arboricultural Method Statement (AMS) detailing the specific protection measures necessary for each tree. This should specify the required fencing standard and positions (the creation of the Construction Exclusion Zone), acceptable construction techniques and necessary tree works.

4.9 The data gained during the original 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. Due to this, the 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.

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
T 1	Early-mature Common Lime *Tilia x europaea*	17	4	1 W	38 x 2 Avg.	6.5 3.5 5 3	Overhanging the footpath and the road. Twin-stemmed at the base with an unbalanced crown. Included bark present at the stem junction.	Monitor biennially. Low	GOOD	FAIR	MOD	MOD	20+	B 1
T 2	Early-mature Cypress *Cupressus sp.*	6	1	1 n/a	16	1.5 1 1.5 1	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.* n/a	GOOD	GOOD	LOW	HIGH	20+	C 1
T 3	Early-mature Norway Maple *Acer platanoides*	15	2	5 E	54	5 1 7.5# 5	Single-stemmed and leaning with an unbalanced crown and a kinked stem. Not fully inspected due to vegetation.	Monitor biennially. Low	GOOD	FAIR	MOD	MOD	20+	B 1
T 4	Early-mature Sycamore *Acer pseudoplatanus*	12	3	3 n/a	42#	2 5 3 3	Twin-stemmed at 6m with a balanced crown. Multiple cankers throughout. Not fully inspected due to Ivy.	Monitor biennially. Low	FAIR	GOOD	LOW	MOD	10+	C 2
T 5	Early-mature Elm *Ulmus sp.*	13	1	2.5 n/a	36	2 4.5 4.5 4	Twin-stemmed at 5m with a balanced crown. No evidence of significant pruning. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	HIGH	20+	C 2
T 6	Early-mature Hawthorn *Crataegus monogyna*	6	1	1 n/a	15, 7	1 2 1.5 3	Twin-stemmed at 0.5m with a balanced crown. No evidence of significant pruning. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	HIGH	20+	C 2
T 7	Early-mature Sycamore *Acer pseudoplatanus*	15	3	3 n/a	41, 17	5 5.3 6 5	Growing against the adjacent building and likely causing nuisance issues. Twin-stemmed at ground level with a balanced crown. No evidence of significant pruning. No major visible defects.	Prune back to clear the building by 2m. Low	GOOD	GOOD	MOD	MOD	20+	B 1
T 8	Early-mature Sycamore *Acer pseudoplatanus*	16	6	6 n/a	45	3 4.5 3 4.5	Twin-stemmed at 8m with a balanced crown. The co-dominant stems are crossing above the stem junction.	Monitor biennially. Low	GOOD	FAIR	MOD	MOD	10+	C 1
T 9	Early-mature Common Ash *Fraxinus excelsior*	17	2	5 n/a	60	7.5 4.5 7.5 7	Twin-stemmed at 1.5m with a balanced crown. No evidence of significant pruning. No major visible defects. Girdled root noted.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	MOD	MOD	40+	B 1
T 10	Early-mature Sycamore *Acer pseudoplatanus*	14	3	3 n/a	40#	4 4# 5 3.5	Growing against the adjacent building and likely causing nuisance issues. Twin-stemmed at 3m with a balanced crown. Not fully inspected due to Ivy.	Prune back to clear the building by 2m. Low	GOOD	GOOD	MOD	MOD	20+	B 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
G 11	Young to semi-mature Mixed species *Details in observations*	To 11	0+	0+ n/a	To 18	See plan	Four small trees (Common Ash, Elm, Cherry and Hawthorn) of a reasonable form. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	MOD TO HIGH	20+	C 2
T 12	Early-mature Common Lime *Tilia x europaea*	11	3	7 N	30#	4 3# 3 0	Single-stemmed and leaning with an unbalanced crown and a poor form.. Not fully inspected due to Ivy.	No action required. n/a	GOOD	GOOD	LOW	MOD	10+	C 1
T 13	Semi-mature Common Ash *Fraxinus excelsior*	13	6	6 n/a	16	3 2 1 1	Single-stemmed and leaning with an unbalanced crown and a poor form.	No action required. n/a	GOOD	FAIR	LOW	MOD	10+	C 1
G 14	Early-mature to mature Mixed species *Details in observations*	To 18	0+	0+ n/a	To 68#	See plan	A linear boundary group of Common Ash, Common Lime, Norway Maple, Sycamore, Cypress and Beech of a good form. Minor deadwood noted as well as decay cavities.	No action required. n/a	GOOD	GOOD	HIGH	MOD TO HIGH	40+	1 A 2
T 15	Early-mature Hawthorn *Crataegus monogyna*	7	1	1 n/a	15	2 1 2 1	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects. Not shown on the topographical plan provided	No action required. n/a	GOOD	GOOD	LOW	HIGH	20+	C 1
T 16	Early-mature Cypress *Cupressus sp.*	13	3	3 n/a	58	3 3 3 3	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	HIGH	20+	B 1
T 17	Early-mature Horse Chestnut *Aesculus hippocastanum*	12	2	4 n/a	35	2 4 4 4	Multi-stemmed at 3m with a balanced crown and a poor form.	No action required. n/a	GOOD	FAIR	LOW	MOD	20+	C 1
T 18	Early-mature Common Lime *Tilia x europaea*	18	2	5 n/a	47	5.5 5 5 3.5	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects. Minor deadwood noted.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	MOD	MOD	40+	B 1
T 19	Early-mature Sycamore *Acer pseudoplatanus*	17	2	2 n/a	48, 38	6.5 4 5 6.5	Twin-stemmed at ground level with a balanced crown. Included bark present at the stem junction.	Monitor biennially. Low	GOOD	FAIR	MOD	MOD	10+	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 20	Early-mature Common Lime *Tilia x europaea*	20	8	8 n/a	46#	6 4 4 4	Single-stemmed and vertical with a balanced crown yet a spindly form. Not fully inspected due to vegetation. Significant deadwood and crown dieback was noted to the canopy in the most recent site visit in May 2022.	No action required. *Remove as not considered to be worthy of post-development retention.* n/a	POOR	FAIR	LOW	MOD	<10	C 1
G 21	Early-mature to mature Mixed species *Details in observations*	To 18	2	2 n/a	To 70#	See plan	A linear group of Sycamore, Beech and Common Lime of good form. Not fully inspected due to vegetation and Ivy.	No action required. n/a	GOOD	GOOD	HIGH	MOD	40+	A 1 2
T 22	Early-mature Cypress *Cupressus sp.*	7	0	0 n/a	28#	2.5 2.5 2.5 2.5	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. Not fully inspected due to vegetation.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	LOW	HIGH	20+	C 1
G 23	Early-mature Cypress *Cupressus sp.*	To 8	0+	0+ n/a	To 18	See plan	A linear group of vertical form. No major visible defects.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	LOW	HIGH	20+	C 2
T 24	Semi-mature Holly *Ilex aquifolium*	6	0	0 n/a	14	2 2 2 2	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.* n/a	GOOD	GOOD	LOW	LOW	20+	C 1
G 25	Early-mature to mature Mixed species *Details in observations*	To 18	2+	2+ n/a	To 62#	See plan	Overhanging the footpath and the road. A linear boundary group of Sycamore, Horse Chestnut and Common Lime of good form. Minor deadwood noted. Not fully inspected due to vegetation.	No action required. n/a	GOOD	GOOD	HIGH	MOD	40+	A 1 2
T 26	Early-mature Sycamore *Acer pseudoplatanus*	14	2	3.5 n/a	29	0 3 3.5 3.5	Single-stemmed and leaning with an unbalanced crown and a poor form. A decay cavity is present from the base to 0.6m.	Monitor biennially. *Remove to facilitate the proposed development.* Low	GOOD	FAIR	LOW	MOD	10+	C 1
G 27	Early-mature Holly *Ilex aquifolium*	To 13	0+	0+ n/a	To 30#	See plan	Three trees of a vertical and balanced form. Not fully inspected due to limited access. Not shown on the topographical plan provided.	No action required. *Remove the two trees shown in red on the plan at* ***Appendix 7*** *to facilitate the proposed development.* n/a	GOOD	GOOD	MOD	LOW	40+	B 2
T 28	Semi-mature Elm *Ulmus sp.*	8	4	4 n/a	14	3.5 4.5 2.5 5	Overhanging the footpath and the road. Single-stemmed and leaning with an unbalanced crown and a poor form.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	FAIR	LOW	HIGH	10+	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
G 29	Mature Mixed species *Details in observations*	To 18	3+	3+ n/a	To 55#	See plan	Linear group of Common Lime and Sycamore of good form. Not fully inspected due to vegetation and limited access.	No action required. n/a	GOOD	GOOD	HIGH	MOD	40+	1 A 2
T 30	Mature Common Ash *Fraxinus excelsior*	19	5	8 n/a	75#	13# 9 10# 9	Twin-stemmed at 5m with a balanced crown. No evidence of significant pruning. Not fully inspected due to vegetation and Ivy.	No action required. *Remove the lowest branch to the north leaving a 2m long stub in order to facilitate the proposed development.* n/a	GOOD	GOOD	MOD	MOD	40+	A 1
G 31	Mature Mixed species *Details in observations*	To 18	2+	5+ n/a	To 65#	See plan	Two trees (Sycamore and Common Lime) of a good form with one homogeneous canopy. Not fully inspected due to vegetation.	No action required. n/a	GOOD	GOOD	MOD	MOD	40+	1 A 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.

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 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.

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.

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.

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 BS5837:2012 *Trees in relation to construction*.

Topping Topping is a form of pruning that removes terminal growth leaving a 'stub' cut end. Topping can cause 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.

Operations Director

Charles Cocking *FdSc (Arboriculture), MArborA.* Charles joined JCA in January 2014 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 a Professional Member of the Arboricultural Association. Charles now oversees all internal operations for the company.

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.

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.

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.

Luke Wickham *FdSc (Arboriculture and Urban Forestry).* Luke joined JCA in 2021 after obtaining his Foundation Degree in Arboriculture and Urban Forestry at Askham Bryan College. Having previously worked within the industry for the past 4 years, running his own small business and sub-contracting for local firms, Luke brings a sound knowledge and understanding of the practical and academic sides of the industry.

Hazel Irving *FdSc (Arboriculture and Urban Forestry).* Hazel joined JCA in 2022 after obtaining her Foundation Degree in Arboriculture and Urban Forestry at Askham Bryan College. She has previously worked in the horticulture industry, volunteered with the National Trust and Yorkshire Arboretum and completed the 2021 student research internship at the RHS Wisley Plant Health Centre.

Scott Hincks *City & Guilds (Forestry).* Scott joined JCA in January 2022 and brings 25 years of tree management experience. He has worked as an Arborist operating in the Utility and Domestic areas, including working for Network Rail, Northern Electricity board, Canal & River Trust, National Trust, Housing Associations and Local Authorities. Scott has many NPTC certificates in practical Arboriculture and volunteers his time and skills to the Woodland Trust.

Consulting Staff: Ecology

Adam West, Principal Ecologist *BSc (Hons) Animal and Wildlife Management.* Adam joined JCA to lead the expanding ecology department. Having returned to education as a mature student, Adam studied Countryside Management for two years before undertaking a Batchelor's degree, for which he was awarded First Class Honours. Adam has many years' experience in ecological consultancy, working on projects ranging from individual planning applications to national infrastructure projects. Adam holds a Natural England Level 1 great crested newt survey class licence, a Natural England Level 2 bat survey class licence (and the Scottish and Welsh equivalents) and a CSCS card.

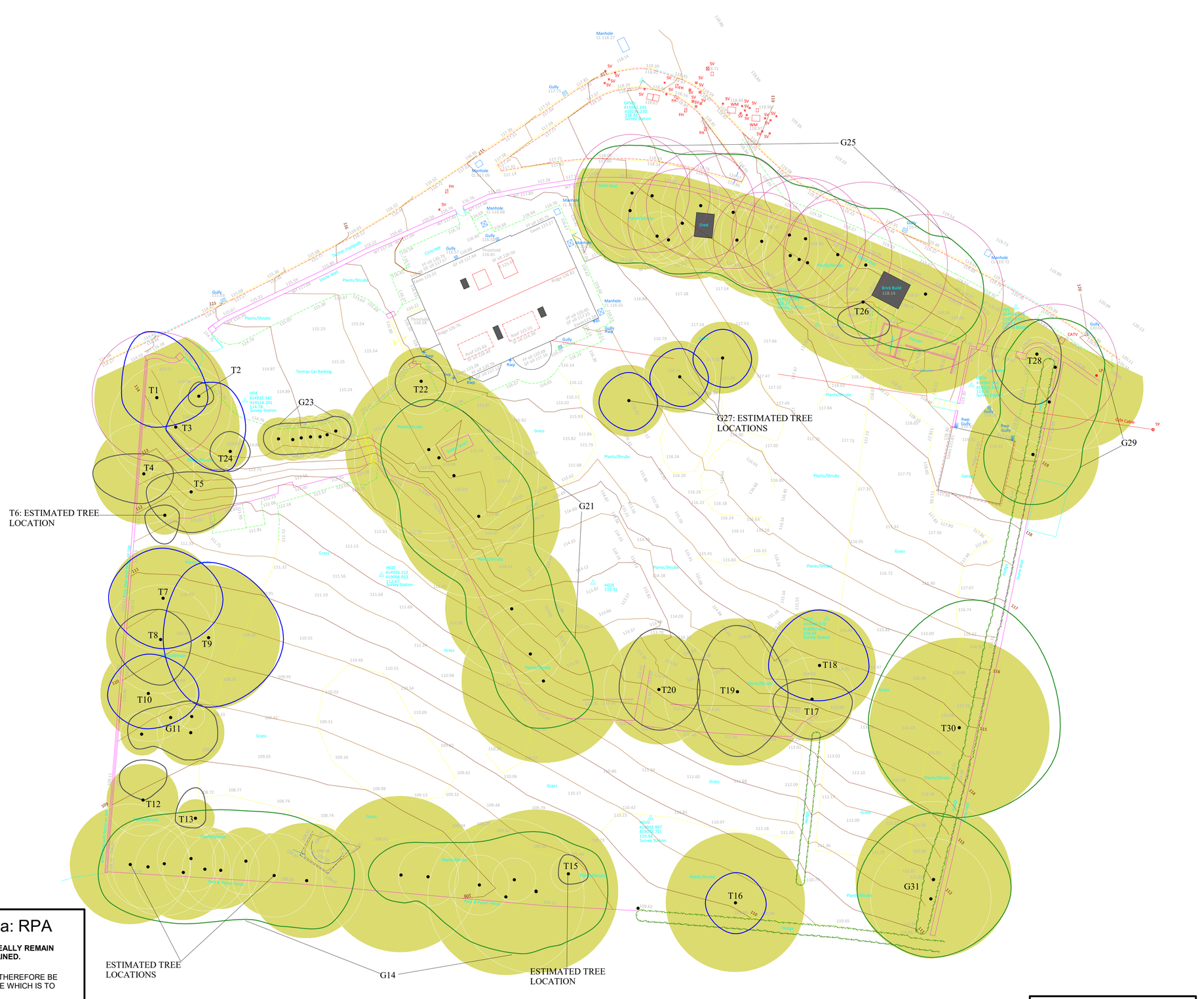
Megan Brown, Graduate Ecologist *MSc Zoo Conservation Biology, BSc (Hons) Zoology.* Megan joined JCA in 2021 after completing her master's degree in Zoo Conservation Biology from Manchester Metropolitan University. After graduating from Newcastle University with First Class Honours in Zoology, Megan joined a local survey group and now has over two years of experience in conducting ecological surveys across a variety of habitat types and taxa. She is continuing to broaden her survey experience at JCA while applying her knowledge, identification and report writing skills to her role as a Graduate Ecologist.

Audrey Bourdais Paull, Graduate Ecologist *BSc (Hons) Zoology.* Audrey joined JCA in 2022 after graduating in Zoology from the University of Leeds. Audrey volunteered for many years with various wildlife conservation and rescue organisations, as well as working on various projects to develop a variety of field survey techniques, report writing and data analysis skills. Audrey is looking forward to developing her ecology consultancy experience with JCA, as well as combining her previous dog training and detection work with ecology to expand into ecology detection dogs.

Helen Chambers, Seasonal Ecologist *MSc by Research in Environmental Studies, BSc (Hons) Wildlife Conservation with Zoo Biology.* Helen joined JCA in 2022 after completing her master's by research degree at the University of Salford. In 2019 Helen graduated with First Class Honours BSc Wildlife Conservation with Zoo Biology, where she gained theoretical knowledge of, and practical experience with, wildlife monitoring and wildlife legislation. She is hoping to further develop her ecological surveying and report writing skills at JCA.

Administrative Staff

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.

Appendix 6: Tree Constraints Plan

ADDRESS: Land off Ashbrow Road, Huddersfield, West Yorkshire, HD2 1DX.
JCA REF: 17829-B/AJB.

SCALE : 1:200	PAPER SIZE : A1

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)

THIS PLAN IS TO BE PRINTED IN COLOUR AND READ IN CONJUNCTION WITH THE JCA ARBORICULTURAL REPORT (JCA REF: 17829-B/AJB)

JCA Limited
Arboricultural & Ecological Consultants

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ASHBROW ROAD

EXISTING RETREAT

STAFF PARKING

Tarmac Car Parking

EXISTING HARD STANDING TO BE RETAINED AND USED AS A SUB-BASE FOR THE NEW DRIVEWAY

5 No 3 BED HOUSING UNITS + GARAGES

Collection Point

RETREAT/ ADMIN BUILDING

514sqm/ 5532sqft OVER 2 STOREYS

T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T12 T13 T15 T16 T17 T18 T19 T20 T22 T24 T26 T28 T30 G11 G14 G21 G23 G25 G27 G29 G31

1 2 3 4 5

THIS PLAN IS TO BE PRINTED IN COLOUR AND READ IN CONJUNCTION WITH THE JCA ARBORICULTURAL REPORT (JCA REF: 17829-B/AJB)

0 1 2 3 4 5 10 15 20 metres

Appendix 7: Arboricultural Implications Plan

ADDRESS: Land off Ashbrow Road, Huddersfield, West Yorkshire, HD2 1DX. JCA REF: 17829-B/AJB.

SCALE : 1:200	PAPER SIZE : A1

	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 HARD STANDING WHERE THE NO-DIG METHOD OF CONSTRUCTION/POROUS FINISH MUST BE UTILISED
	EXISTING GARAGE TO BE REMOVED UNDER ARBORICULTURAL SUPERVISION

JCA Limited

Arboricultural & Ecological 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 *LANTRA Accredited PTI.*

27th June 2022

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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