

**ARBORICULTURAL IMPACT ASSESSMENT  
to BS 5837:2012  
at  
Land off Bankfield Drive  
Holmbridge  
Huddersfield  
West Yorkshire  
HD9 2PH**

**Client:**  
Orion Homes

**Client Address:**  
5 Benton Office Park  
Bennet Avenue  
Horbury  
Wakefield  
West Yorkshire  
WF4 5RA

**JCA Ref:**  
18204-B/AJB

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## 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 Bankfield Drive, Holmbridge, Huddersfield**.
- 1.1.2 The purpose of this report is to assess the impact of the proposed development on the existing tree stock and outline mitigation actions, where appropriate, to minimise any potential damage to retained trees.

### 1.2 Terms of Reference

- 1.2.1 JCA Limited has been instructed by **Orion Homes** to prepare an Arboricultural Impact Assessment, based on our Arboricultural Report dated 22<sup>nd</sup> March 2023 (JCA Ref: **18204/AJB**). The arboricultural survey and report conforms 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. Site Layout 003 M**, 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 6**. 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 6**.

### 1.4 Survey Details

- 1.4.1 The original tree survey took place during March 2023 and was conducted by **Andrew Bussey LANTRA Accredited PTI**.

## 2. Tree Descriptions and Recommendations

- 2.1 The tree information recorded during the original survey is detailed 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 5** 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 residential housing estate.
- 3.1.2 Any tree works required to accommodate the proposals are detailed in *italics* in the recommendation columns of the tables at **Appendix 1**.

#### 3.2 Tree Removals for Development

- 3.2.1 In order to facilitate aspects of the proposed development, it will be necessary to remove a small, negligible section of **G2**, a retention category 'B' group, as indicated on the plan at **Appendix 6**.

#### 3.3 Pruning for Development

- 3.3.2 Where the footprint of the proposed private drive passes within the RPA of **T1**, root pruning will be required, under the supervision of an appointed arboriculturist. Root pruning will accommodate the proposed private drive whilst preventing any 'ripping' damage, a problem commonly associated with mechanical excavations.

#### 3.4 Temporary Protection Measures

##### 3.4.1 The Protective Barrier

- 3.4.1.1 In order to ensure the effective protection of retained trees during development, protective fencing will be installed, in accordance with BS5837: 2012. This will be the first job on site following the tree works. The fencing will be positioned to protect the entire **Root Protection Area (RPA)** of the retained trees, in order to create a **Construction Exclusion Zone (CEZ)**.

## **3.5 Implications for Retained Trees**

### **3.5.1 Demolition**

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

### **3.5.2 Access/Construction of Hard Surfacing**

3.5.2.1 Proposed hard surfacing is located within the RPA of T1. Due to the minimal nature of the incursion, it is not considered necessary to install specialised surfaces. Instead, root pruning will be undertaken under the supervision of an appointed arboriculturist to prevent ‘ripping’ damage, which is commonly associated with mechanical excavation.

### **3.5.3 Building Construction / Foundation Design**

3.5.3.1 The footprints of the proposed buildings 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.

3.5.3.2 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.

### **3.5.4 Utilities**

3.5.4.1 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.

3.5.4.2 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.

### **3.5.5 Site Compound**

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

### **3.5.6 Landscaping**

- 3.5.6.1 Proposed fence lines may be constructed within the RPA of a tree if necessary, providing that 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.
- 3.5.6.2 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.

## **3.6 Remedial Measures**

- 3.6.1 Part of the proposed development will encroach into the RPAs of **T1**, resulting in possible root loss. It would therefore be prudent to apply appropriate mycorrhizae fungi to the soils around these trees after the construction phase is complete. Certain mycorrhiza fungi form a symbiotic relationship with tree roots. A tree root associated with such mycorrhiza will take up nutrients more effectively and this will therefore help the tree to produce new roots more effectively, so benefitting their recovery.

## 4. Summary

- 4.1 We are informed that there is no Tree Preservation Order (TPO) in force and that the site is not within a Conservation Area.
- 4.2 The proposed development will consist of the construction of a residential housing estate.
- 4.3 The arboricultural implications of the development have been considered and are discussed in **Section 3**.
- 4.4 A small, negligible section of **G2** requires removal and **T1** requires root pruning in order to facilitate the proposed development. Tree works required to accommodate the proposals are detailed in *italics* in the tables at **Appendix 1**. Those trees requiring removal are shown in red on the Arboricultural Implications Plan at **Appendix 6**, where the proposals can also be viewed.
- 4.5 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.
- 4.6 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 5**.
- 4.7 The proposed development will be accompanied by an Arboricultural Method Statement (AMS) detailing the specific protection measures necessary for each tree. This will specify the required fencing standard and positions (the creation of the Construction Exclusion Zone) and necessary tree works.
- 4.8 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   | Height (m) | Crown Height (m) | Height (m) and Direction of the Lowest Branch | Diameter (cm) | Crown Spread |     |   | Observations   | Recommendations<br><br>Priority  | Physiological Condition | Structural Condition | Amenity Value | NHBC Water Demand | Life Expectancy (yrs) | Retention Category |
|-----------|---|------------|------------------|---|---------------|--------------|-----|---|--|--|-------------------------|----------------------|---------------|-------------------|-----------------------|--------------------|
|           | Common Name<br><br><i>Botanical Name</i>                    |            |                  |   |               | N            | W   | E |  |  |                         |                      |               |                   |                       |                    |
| T 1       | Early-mature<br><br>English Oak<br><br><i>Quercus robur</i> | 12#        | 0+               | 0+  | 47            | 4            | 5   | 5 | Single-stemmed and vertical with a fairly balanced crown. Growing on the top of a retaining wall adjacent to Dobb Top Road. Limited detailed inspection. | No action required.<br><i>Root prune the area shown in blue shade on the plan at Appendix 6 under arboricultural supervision.</i><br><br>n/a     | GOOD                    | GOOD                 | MOD           | HIGH              | 40+                   | B 1                |
| G 2       | Semi to early-mature<br><br>Mixed                           | To 11#     | 0+               | 0+  | Avg. 25#      | See Plan     |     |   | Mixed species comprising Holly, English Oak and Hawthorn. Group provides screening from the adjacent Dobb Top Road. Limited detailed inspection.         | No action required.<br><i>Remove the small section shown in red on the plan at Appendix 6 to facilitate the proposed development.</i><br><br>n/a | GOOD                    | GOOD                 | MOD           | LOW TO HIGH       | 40+                   | B 1<br>B 2         |
| G 3       | Early-mature<br><br>Elder<br><br><i>Sambucus nigra</i>      | To 6#      | 1                | 0+  | Avg. 10#      | 1.5          | 1.5 | 4 | Two multi-stemmed trees. Limited detailed inspection.  | No action required.<br><br>n/a   | FAIR                    | FAIR                 | LOW           | LOW               | 20+                   | C 1<br>C 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.

## 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: 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.

**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.

**Andrew McPhaden** *BSc (Hons).* Andrew joined JCA in 2022 having spent 5 years working as an Arborist for various private companies in both the UK and Germany. During his time abroad he obtained the European Tree Worker Certification along with a tree inspector certification from the Forschungsgesellschaft Landschaftsentwicklung Landschaftsbau. He brings a strong understanding of the practical sides of the industry and holds various NPTC qualifications.

### **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 Bachelor'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.

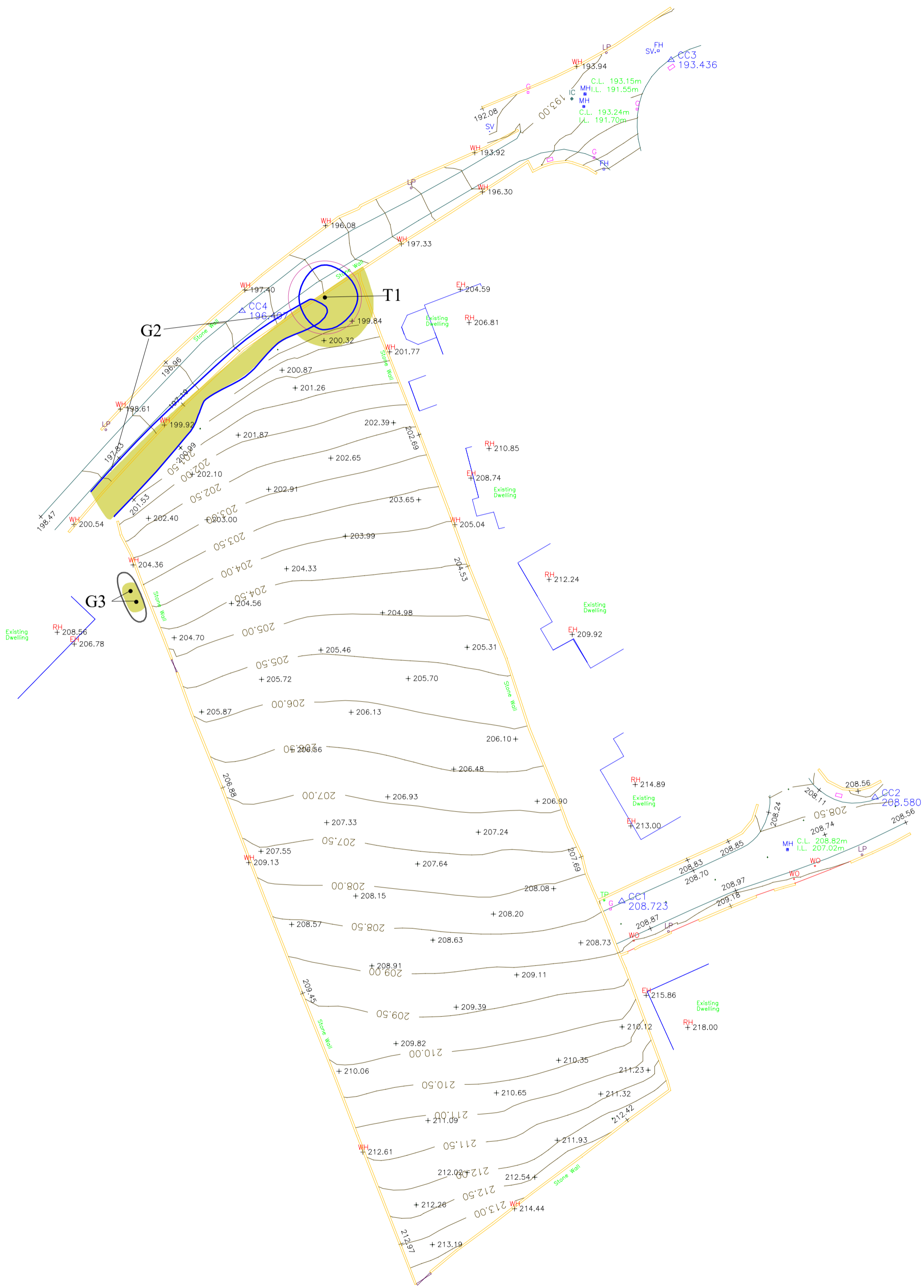
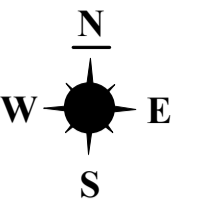
### **Administrative Staff**

**Catherine Cocking** Accounts Manager.

**Kelly Saunders** Accounts Assistant.

**Lorraine Spink** Administrative Assistant.

**Lisa Beedham** Marketing Manager.



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**Root Protection Area: RPA**

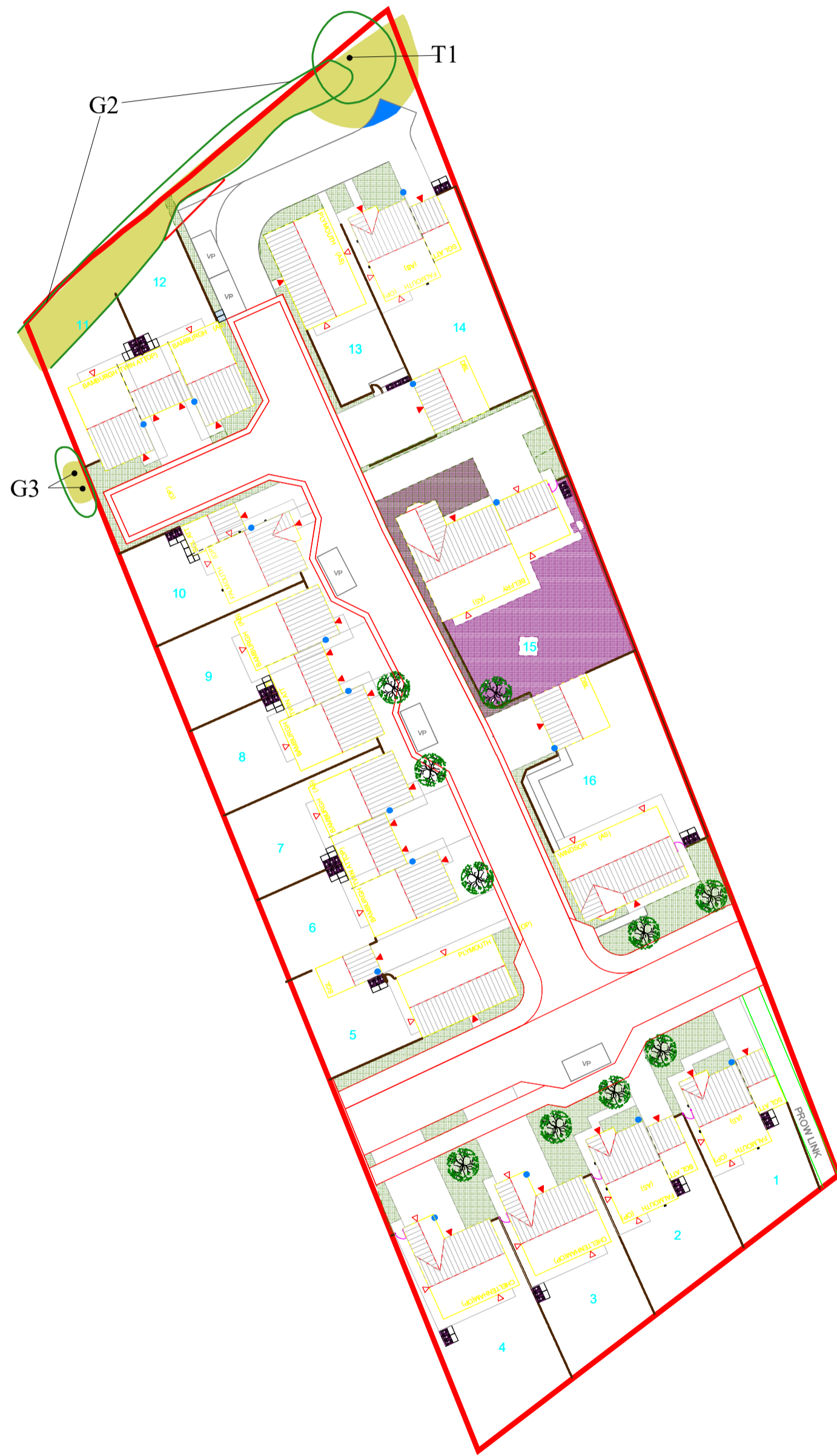
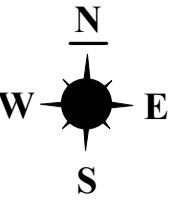
THE ROOT PROTECTION AREA SHOULD IDEALLY REMAIN UNDISTURBED IF THE TREE IS TO BE RETAINED.

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:<br>Tree Constraints Plan   |                | BRITISH STANDARD 5837:2012: 4.5<br>RETENTION CATEGORIES |   |
|--|----------------|---|---|
| ADDRESS: Land off Bankfield Drive, Holmbridge, Huddersfield, HD9 2PH<br>JCA REF: 18204-B/AJB |                |   | CATEGORY A: 'RETENTION MOST DESIRABLE'      |
| SCALE 1:500  | PAPER SIZE A2  |   | CATEGORY B: 'RETENTION DESIRABLE'           |
| SURVEYED BY: HI  | ADAPTED BY: HI |   | CATEGORY C: 'TREE WHICH COULD BE RETAINED'  |
| <br>Arboricultural & Ecological Consultants  |                |   | 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) |



**Appendix 6: Arboricultural Implications Plan**

ADDRESS: Land off Bankfield Drive, Holmbridge, Huddersfield, HD9 2PH  
JCA REF: 18204-B/AJB

SCALE : 1:500      PAPER SIZE : A2

|  |  |
|--|--|
|  | 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 WHERE ROOT PRUNING MUST BE UNDERTAKEN UNDER ARBORICULTURAL SUPERVISION |



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

Signed



.....  
**Andrew Bussey** *LANTRA Accredited PTI.*

29<sup>th</sup> March 2023

For and on behalf of *JCA Ltd*

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# JCA Ltd. Arboricultural and Ecological Consultants

## Professional Tree and Ecology Advice nationwide

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### ARBORICULTURAL SERVICES

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#### Guidance for Architects and Developers

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

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#### Advice for Engineers, Loss Adjusters and Insurers

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

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#### 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

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#### Veteran Tree Management

- Ancient Woodland Management
- Veteran Tree Management

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#### Tree Health and Pest and Disease Management

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

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### ECOLOGICAL SERVICES

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#### 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

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#### Ecological Post-Planning Services

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

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