

**ARBORICULTURAL IMPACT ASSESSMENT
to BS 5837:2012
at
Land at Belton Road
Doncaster
South Yorkshire
DN9 1JL**

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Contents

| | |
|---|-----------|
| 1. Introduction..... | 3 |
| 1.1 Purpose of the Report..... | 3 |
| 1.2 Terms of Reference..... | 3 |
| 1.3 Scope of the Report..... | 3 |
| 1.4 Survey Details..... | 3 |
| 2. Tree Descriptions and Recommendations..... | 4 |
| 3. Arboricultural Implications Assessment (AIA) | 4 |
| 3.1 Proposed Development..... | 4 |
| 3.2 Tree Removals for Development..... | 4 |
| 3.3 Pruning for Development | 4 |
| 3.4 Temporary Protection Measures | 5 |
| 3.5 Implications for Retained Trees..... | 5 |
| 3.6 Remedial Measures | 7 |
| 4. Summary | 8 |
| | |
| Appendix 1: Tree Descriptions and Recommendations..... | 10 |
| Appendix 2: Explanation of Tree Descriptions..... | 11 |
| Appendix 3: General Guidelines | 14 |
| Appendix 4: Author Qualifications | 15 |
| Appendix 5: Tree Constraints Plan..... | 16 |
| Appendix 6: Arboricultural Implications Plan..... | 17 |

1. Introduction

1.1 Purpose of the Report

- 1.1.1 This Arboricultural Impact Assessment has been prepared for the proposed development at **Belton Road, Epworth**.
- 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 **Millea Land (Epworth) Ltd and Camstead Ltd** to prepare an Arboricultural Impact Assessment, based on our Arboricultural Report dated **26th May 2023** (JCA Ref: **20630/EW**). 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 No. 6622-SSA-00-XX-DR-A807-Proposed Masterplan-F21**, 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 Impact 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 May 2023 and was conducted by **Emily Wilde FdSc (Arboriculture)**.

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 proposals are for a new medical centre and commercial units with access road, parking and landscaping.
- 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**. No Arboricultural works were recommended during the initial survey, all recommendations are to facilitate the development only.

3.2 Tree Removals for Development

- 3.2.1 **Thirteen** items of vegetation (**T1, G2, G4, T5, T6, G7, T8, G9, G48, G49** and **G56** and parts of **H3** and **G38**) require removal to accommodate the proposals. These include **6** category 'B' items and **7** category 'C' items.
- 3.2.2 Whilst the development will require the removal of some trees within the site, it should be noted that a planting scheme will be included within the proposals. This will act to mitigate tree losses, improve the visual benefits of the site and the surrounding area.

3.3 Pruning for Development

- 3.3.1 To accommodate the proposals, it will be necessary to prune some of the retained trees, to provide suitable access and working distances for contractors and vehicles and to afford reasonable clearances from buildings. Also known as 'access facilitation pruning' this is relevant to **T23**.
- 3.3.2 Where the footprint of proposed buildings and kerb lines falls within the RPA of retained trees, root pruning will be required, under the supervision of an appointed arboriculturist. Root pruning will accommodate the proposed structure whilst preventing any 'ripping' damage, a problem commonly associated with mechanical excavations. Root pruning is relevant to **G12** and **T23**.
- 3.3.3 These areas are shown in **blue** on the plan at **Appendix 6**.

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, in order 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 trees which are 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** and **green** on the Arboricultural Implications Plan at **Appendix 6**.

3.5.2 Demolition

- 3.5.2.1 It is proposed to remove existing hard surfaces within the RPA of some of the retained trees (**G13, T14, G15, T16, T17, T18, T19, T20, G21 and T23**). This operation shall be carried out under arboricultural supervision.
- 3.5.2.2 For this method, the existing hard surface will first be broken by mechanical means. Care will be taken to only break the existing hard surface and not to disturb the underlying soil (where the tree roots are located). Once the surfacing has been broken into manageable sizes, it will be carefully removed from the area. These areas are marked in **green** on the plan at **Appendix 6**.
- 3.5.2.3 Once all the rubble has been removed from the area; the areas marked in **green** on the plan shall be re-instated with topsoil and landscaped.

3.5.3 **Access/Construction of Hard Surfacing**

3.5.3.1 Proposed hard surfacing is located within the RPA of **G12**. 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.

3.5.4 **Building Construction / Foundation Design**

3.5.4.1 The footprint of a proposed structure incurs the RPA of **T23**. In this case, because of the minimal nature of the incursion, it is considered appropriate to undertake root pruning. This will allow for the construction of the building, without causing ‘ripping’ damage to the roots, a problem commonly associated with mechanical excavation, whilst also preventing the need for specialist foundation designs. This area is shown in **blue** on the plan at **Appendix 6**.

3.5.4.2 Advice should always be sought from a suitably qualified Structural Engineer. The water demand of trees can be an important consideration when determining the appropriate foundation design. Due of this, water demands for the trees identified on this site are included in **Appendix 1**, in accordance with **NHBC chapter 4.2**, for use by the appointed structural expert.

3.5.5 **Utilities**

3.5.5.1 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.

3.5.5.2 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 of the trees and outside their RPAs. Care should also be taken to prevent soil contamination from chemical spillages, including petrol, diesel, and oils.

3.5.7 **Tree Shade**

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

3.5.8 **Landscaping**

- 3.5.8.1 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.
- 3.5.8.2 For any other hard surfaces within RPAs which may not be shown on the projected layout (**Appendix 6**), further advice should be sought from a qualified Arboriculturalist.
- 3.5.8.3 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.

3.6 Remedial Measures

- 3.6.1 To protect the retained trees during the construction phase, protective fencing needs to be installed. Protective fencing specifications and on-site positioning, along with details of any necessary specialist construction methods can be provided in an Arboricultural Method Statement (AMS).
- 3.6.2 Part of the proposed development will encroach into the RPAs of retained trees, resulting in possible root loss. It would therefore be prudent to apply 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.
- 3.6.3 The site offers scope for landscaping and tree planting. All areas identified for the new planting should also be protected by fencing during the construction phase to prevent the compaction of the soil.

4. Summary

- 4.1 **T40** to **G46** are protected by a Tree Preservation Order and the southern part of the site is within a Conservation Area.
- 4.2 The proposals are for a new housing development.
- 4.3 The arboricultural implications of the development have been considered and are discussed in **Section 3**.
- 4.4 Some trees require removal or pruning works 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 should 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.
- 4.8 Upon instruction JCA can provide a comprehensive Arboricultural Method Statement in order to ensure the continued health of trees throughout the proposed development. We are also able to provide tree planting schemes and organise 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 | Approximate Height (m) | Approximate Crown Height (m) | Approximate Height (m) and Direction and Lowest Branch | Diameter (cm) | Approximate Crown Spread | | | Observations | Recommendations to facilitate the development. | Physiological Condition | Structural Condition | Amenity Value | NHBC Water Demand | Life Expectancy (yrs) | Retention Category |
|-----------|--|------------------------|------------------------------|--|---------------|--------------------------|-----|-----|---|---|-------------------------|----------------------|---------------|-------------------|-----------------------|--------------------|
| | | | | | | N | W | E | | | | | | | | |
| T 1 | Early-mature Common Beech <i>Fagus sylvatica</i> | 10 | 2 | 3 NW | 45 | 5 | 5 | 7 | Twin-stemmed at 2m . Overhanging The boundary. Pruning wounds at 3 metres. | Remove. | GOOD | GOOD | MOD | MOD | 40+ | B 1 |
| G 2 | Semi-mature Sycamore <i>Acer pseudoplatanus</i> | 9 | 1 | 2 n/a | 20# | See plan | | | Two trees. Single-stemmed. No significant defects. (Trees not individually plotted on the topographical survey). | Remove. | GOOD | GOOD | MOD | MOD | 40+ | C 2 |
| H 3 | Semi-mature Common Beech <i>Fagus sylvatica</i> | 6 | 0 | 0 n/a | 15 avg. | 2 | 2 | 2 | Unmaintained boundary hedge. | Part removal as shown in red on the plan at Appendix 6 . | GOOD | GOOD | MOD | MOD | 40+ | C 2 |
| G 4 | Young Mixed species <i>Details in observations</i> | 4 | 0 | n/a n/a | 7 x 5 avg. | See plan | | | Self-set Birch and Goat Willow. (Trees not individually plotted on the topographical survey). | Remove. | FAIR | FAIR | LOW | LOW to HIGH | 20+ | C 2 |
| T 5 | Semi-mature False Cypress <i>Chamaecyparis sp.</i> | 8 | 1 | n/a n/a | 22# | 1.5 | 1.5 | 1.5 | Single stanned and vertical , balanced crown. Limited inspection due to location on raised level. (Trees not individually plotted on the topographical survey). | Remove. | GOOD | GOOD | LOW | HIGH | 40+ | B 1 |
| T 6 | Semi-mature Red Oak <i>Quercus rubra</i> | 7 | 2 | 2 n/a | 26# | 5 | 4 | 4 | Single-stemmed and vertical. No significant defects noted. | Remove. | GOOD | FAIR | MOD | HIGH | 40+ | B 1 |
| G 7 | Mature Hawthorn <i>Crataegus monogyna</i> | 6 | 1.5 | 0 n/a | to 18# | See plan | | | Two trees. Multiple twisted stems. Offset crowns. (Trees not plotted on the topographical survey). | Remove. | GOOD | FAIR | LOW | HIGH | 20+ | B 1 |
| T 8 | Mature Himalayan Birch <i>Betula utilis 'Jacquemontii'</i> | 12 | 2 | 2 n/a | 41 | 5.5 | 6 | 6.5 | Single vertical stem. No significant defects noted. | Remove. | GOOD | GOOD | HIGH | LOW | 40+ | B 1 |
| G 9 | Young Mixed species <i>Details in observations</i> | 4 | 0 | 0 n/a | to 15 | See plan | | | Boundary vegetation including Buddleia, Cherry, Mahonia, Lilac, Bamboo, Portuguese Laurel, Hazel, Norway Maple, Berberis and Rowan. | Remove. | GOOD | GOOD | MOD | LOW to MOD | 40+ | C 2 |
| G 10 | Young Mixed species <i>Details in observations</i> | to 3 | 0 | 0 n/a | to 10 | See plan | | | Boundary hedge along the car park. Species include Laurel, Birch, Cherry, Buddleia, Ash (some with Ash Dieback) Elder. | No action required. | GOOD | GOOD | MOD | LOW to MOD | 20+ | C 2 |

| Tree Ref. | Age Common Name Botanical Name | Approximate Height (m) | Approximate Crown Height (m) | Approximate Height (m) and Direction Lowest Branch | Diameter (cm) | Approximate Crown Spread | | | Observations | Recommendations to facilitate the development. | Physiological Condition | Structural Condition | Amenity Value | NHBC Water Demand | Life Expectancy (yrs) | Retention Category |
|-----------|--|------------------------|------------------------------|--|---------------|--------------------------|---|--------|---|---|-------------------------|----------------------|---------------|-------------------|-----------------------|--------------------|
| | | | | | | N | W | E | | | | | | | | |
| G 11 | Semi-mature Mixed species <i>Details in observations</i> | to 14 | 0 | #1 n/a | 25# avg. | See plan | | | Spruce and Lawsons Cypress. Situated on adjacent land. Two trees forming a homogenous crown. Limited inspection. (Trees not plotted on the topographical survey). | No action required. | GOOD | GOOD | MOD | MOD to HIGH | 40+ | B 1 B 2 |
| G 12 | Young Sycamore <i>Acer pseudoplatanus</i> | to 7 | 2.5 | 0 n/a | 17# avg | See plan | | | Two trees, one single-stemmed one multiple-stemmed. The crown overhangs the car park. | <i>Root prune under arboricultural supervision.</i> | FAIR | FAIR | LOW | MOD | 10+ | C 1 C 2 |
| G 13 | Young Mixed species <i>Details in observations</i> | to 6 | 1 | 0 n/a | 15 | See plan | | | Mixed boundary group of Sycamore and Hawthorn overhanging the car park. Some self-set. (Not plotted on the topographical survey). | <i>Hard surface removal under arboricultural supervision.</i> | FAIR | FAIR | LOW | MOD to HIGH | 20+ | C 2 |
| T 14 | Early-mature Silver Birch <i>Betula pendula</i> | 12 | 3 | 3 NE | 26# | 3 5 | 5 | 4 | Situated on adjacent land. Single-stemmed and vertical with a slightly unbalanced crown. Limited inspection. (Not plotted on the topographical survey). | <i>Hard surface removal under arboricultural supervision.</i> | GOOD | GOOD | MOD | LOW | 40+ | B 1 |
| G 15 | Early-mature Ash <i>Fraxinus excelsior</i> | 14 | 4 | 4 n/a | 40# avg. | See plan | | | Situated on adjacent land. Close group. Pruning wounds at 2m, Decay cavity at the union. Slightly sparse crown. The crowns overhang the car park. | <i>Hard surface removal under arboricultural supervision.</i> | FAIR | FAIR | MOD | MOD | 20+ | B 1 |
| T 16 | Semi-mature Sycamore <i>Acer pseudoplatanus</i> | 13 | 3 | 3 n/a | 38# | 4.5 3.5 | 3 | 3 | Twin-stemmed at 1.5m with a balanced crown. Pruning wound at 1.5m. The crown overhangs the car park. | <i>Hard surface removal under arboricultural supervision.</i> | FAIR | FAIR | LOW | MOD | 20+ | C 1 |
| T 17 | Mature Sycamore <i>Acer pseudoplatanus</i> | 15 | 4 | 4 n/a | 44# 38# | 7 4.5 | 5 | 5 | Situated on adjacent land Limited inspection. Twin-stemmed at 1.5m with a slightly unbalanced crown. The crown overhangs the car park. | <i>Hard surface removal under arboricultural supervision.</i> | GOOD | GOOD | MOD | MOD | 40+ | B 1 |
| T 18 | Early-mature Sycamore <i>Acer pseudoplatanus</i> | 13 | 4 | 3 NE | 42# | 6 6 | 4 | 4 3 | Situated on adjacent land limited inspection. Single-stemmed with a slight lean and a reasonably balanced crown. The crown overhangs the car park. | <i>Hard surface removal under arboricultural supervision.</i> | GOOD | GOOD | MOD | MOD | 40+ | B 1 |
| T 19 | Early-mature Weeping Willow <i>Salix babylonica</i> | 12 | 1 | 3 n/a | 45# | 4 8 | 0 | 5 | Situated on adjacent land. Limited inspection. Single-stemmed and leaning with a slightly unbalanced crown. | <i>Hard surface removal under arboricultural supervision.</i> | FAIR | FAIR | MOD | HIGH | 20+ | B 1 |
| T 20 | Semi-mature Myrobalan Plum <i>Prunus cerasifera</i> | 4 | 0.5 | 2 n/a | 3 x 14 avg. | 2 3 | 2 | 0 | Multi-stemmed at ground level with a slightly unbalanced crown. Located in the corner of the car park. | <i>Hard surface removal under arboricultural supervision.</i> | FAIR | FAIR | LOW | MOD | 20+ | C 2 |

| Tree Ref. | Age Common Name Botanical Name | Approximate Height (m) | Approximate Crown Height (m) | Approximate Height (m) and Direction Lowest Branch | Diameter (cm) | Approximate Crown Spread | | | Observations | Recommendations to facilitate the development. | Physiological Condition | Structural Condition | Amenity Value | NHBC Water Demand | Life Expectancy (yrs) | Retention Category |
|-----------|---|------------------------|------------------------------|--|---------------|--------------------------|-----|-----|--|---|-------------------------|----------------------|---------------|-------------------|-----------------------|--------------------|
| | | | | | | N | W | E | | | | | | | | |
| G 21 | Mature Hawthorn <i>Crataegus monogyna</i> | 5 | 1.5 | 2 n/a | 30 avg. | See plan | | | Located along the boundary of the car ark. Two trees, dense Ivy prevented detailed inspection. | <i>Hard surface removal under arboricultural supervision.</i> | GOOD | FAIR | MOD | HIGH | 20+ | B 1 |
| H 22 | Mature Hawthorn <i>Crataegus monogyna</i> | to 3 | 0 | 0 n/a | 15 avg. | See plan | | | Boundary hedge. Ivy within. | No action required. | GOOD | GOOD | MOD | HIGH | 40+ | B 2 |
| T 23 | Early-mature Sycamore <i>Acer pseudoplatanus</i> | 15 | 4 | 3 n/a | 3 x 44 | 6 7.5 | 7.5 | 7.5 | Multi-stemmed at 1m with a slightly unbalanced crown. Dense Ivy prevented detailed inspection. The crown overhangs the car park. | <i>Prune west canopy by 2m.</i> <i>Root pruning under arboricultural supervision.</i> <i>Hard surface removal under arboricultural supervision.</i> | GOOD | GOOD | HIGH | MOD | 40+ | B 1 |
| G 24 | Semi-mature Elm <i>Ulmus sp.</i> | 10 | 1 | 2 n/a | to 12 | See plan | | | Small group of trees within H22. | No action required. | GOOD | GOOD | MOD | HIGH | 40+ | B 1 |
| G 25 | Early-mature Mixed species <i>Details in observations</i> | 1 | 1.5 | 2 n/a | to 45 | See plan | | | Three trees. Sycamore and Ash. Located within H22. | No action required. | GOOD | GOOD | MOD | MOD | 40+ | B 1 |
| T 26 | Mature Ash <i>Fraxinus excelsior</i> | 11 | 1.5 | 3 n/a | 70 | 5 6 | 6 | 6 | Twin-stemmed at 1.5m with a slightly unbalanced crown. Ivy prevented detailed inspection. | No action required. | GOOD | GOOD | MOD | MOD | 40+ | B 1 |
| T 27 | Early-mature Ash <i>Fraxinus excelsior</i> | 13 | 1 | 4 n/a | 35# | 2 1 | 3 | 4 | Single-stemmed and vertical with a slightly unbalanced crown. Ivy prevented detailed inspection. | No action required. | FAIR | FAIR | MOD | MOD | 20+ | B 1 |
| T 28 | Mature Ash <i>Fraxinus excelsior</i> | 14 | 5 | 5 n/a | 65# | 6 6 | 7 | 7 | Situated on adjacent land. Multi-stemmed at 2m with a slightly unbalanced crown. Ivy prevented detailed inspection. (Not plotted on the topographical survey). | No action required. | GOOD | GOOD | MOD | MOD | 40+ | B 1 |
| T 29 | Early-mature Ash <i>Fraxinus excelsior</i> | 16 | 1.5 | 2.5 NE | 40# | 7 2 | 5 | 2 | Single-stemmed and vertical with a slightly unbalanced crown. Location prevented detailed inspection. | No action required. | FAIR | FAIR | MOD | MOD | 20+ | B 1 |

| Tree Ref. | Age Common Name Botanical Name | Approximate Height (m) | Approximate Crown Height (m) | Approximate Height (m) Lowest and Direction Branch | Diameter (cm) | Approximate Crown Spread | | | Observations | Recommendations to facilitate the development. | Physiological Condition | Structural Condition | Amenity Value | NHBC Water Demand | Life Expectancy (yrs) | Retention Category |
|-----------|--|------------------------|------------------------------|--|---------------|--------------------------|----------|---|---|--|-------------------------|----------------------|---------------|-------------------|-----------------------|--------------------|
| | | | | | | N | W | E | | | | | | | | |
| G 30 | Semi-mature Mixed species <i>Details in observations</i> | 11 | 2 | 3 n/a | 20 avg. | See plan | | | Ash and Sycamore. Situated on adjacent land. Three trees. Limited inspection. Suppressed crowns. (Not plotted on the topographical survey). | No action required. | FAIR | FAIR | LOW | MOD | 20+ | C 1 2 |
| T 31 | Semi-mature Sycamore <i>Acer pseudoplatanus</i> | 13 | 5 | 5 n/a | 25# | 2 4# | 3 4 | | Situated on adjacent land. Limited inspection. Single-stemmed and vertical with a balanced crown. High crown. Overhanging the site. | No action required. | GOOD | GOOD | MOD | MOD | 40+ | B 1 |
| G 32 | Semi-mature Sycamore <i>Acer pseudoplatanus</i> | 15 | 2 | 2 n/a | 32# | See plan | | | Situated on adjacent land Limited inspection. Linear group of trees, single-stemmed and multiple-stemmed. Overhanging the site. Occasional cavity noted. | No action required. | FAIR | FAIR | MOD | MOD | 20+ | B 2 |
| G 33 | Young Myrobalan Plum <i>Prunus cerasifera</i> | 5 | 0 | 0 n/a | 8 avg. | See plan | | | Dense boundary vegetation. Provides screening. | No action required. | GOOD | GOOD | LOW | MOD | 40+ | C 1 |
| T 34 | Mature Myrobalan Plum <i>Prunus cerasifera</i> | 5 | 0.5 | 1 n/a | 3 x 20 avg. | 5 3 | 3 2 | | Multi-stemmed at ground level with a slightly unbalanced crown. Dense Ivy prevented detailed inspection. | No action required. | FAIR | FAIR | MOD | MOD | 20+ | C 1 |
| T 35 | Early-mature Apple <i>Malus sp.</i> | 5 | 1 | 2.5 n/a | 2 x 18 avg. | 4 2.5 | 4 0.5 | | Twin-stemmed at ground level with a slightly unbalanced crown. Cavities to the stems. | No action required. | FAIR | FAIR | LOW | MOD | 10+ | C 1 |
| H 36 | Mature Hawthorn <i>Crataegus monogyna</i> | to 6 | 0 | 0 n/a | 15# avg. | See plan | | | Unmaintained hedge. | No action required. | GOOD | GOOD | MOD | HIGH | 40+ | B 1 |
| H 37 | Mature Hawthorn <i>Crataegus monogyna</i> | to 6 | 0 | 0 n/a | 15# avg. | See plan | | | Unmaintained hedge. | No action required. | GOOD | GOOD | MOD | HIGH | 40+ | B 1 |
| G 38 | Semi-mature Mixed species <i>Details in observations</i> | to 6 | 0 | 0 n/a | 20 | See plan | | | Group of scattered and mainly self-set trees. Species include Hawthorn, Cherry, and Ash on the edge of the woodland. (Not plotted on the topographical survey). | <i>Crown lift two trees adjacent to the proposed wall by 2m.</i> <i>Part removal as shown in red on the plan at Appendix 6.</i> | GOOD | GOOD | MOD | MOD to HIGH | 40+ | C 1 |
| W 39 | Mature Mixed species <i>Details in observations</i> | to 18 | 1 | 0 n/a | to 50 | See plan | | | Woodland group along and overhanging the track. Species include Sycamore, Elm, Ash and Cherry. (Not plotted on the topographical survey). | No action required. | GOOD | GOOD | HIGH | MOD to HIGH | 40+ | B 1 2 |

T40 to W47 not included within the remit of this report.

| Tree Ref. | Age Common Name Botanical Name | Approximate Height (m) | Approximate Crown Height (m) | Approximate Height (m) and Direction and Lowest Branch | Diameter (cm) | Approximate Crown Spread N W E S | Observations | Recommendations to facilitate the development. | Physiological Condition | Structural Condition | Amenity Value | NHBC Water Demand | Life Expectancy (yrs) | Retention Category |
|--|---|------------------------|------------------------------|--|-------------------|---|---|--|-------------------------|----------------------|---------------|-------------------|-----------------------|--------------------|
| | | | | | | | | | | | | | | |
| G 48 | Early-mature Monterey Cypress <i>Cupressus macrocarpa</i> | 18 | 2 | 2 n/a | 32 avg. | See plan | Linear boundary group of trees. | Remove. | GOOD | GOOD | MOD | HIGH | 40+ | C 1 |
| G 49 | Semi-mature Deodar Cedar <i>Cedrus deodara</i> | 8 | 0.5 | 2 n/a | 28# 15# 22# | See plan | Situated on adjacent land. Three trees single-stemmed and vertical, overhanging the site. | Remove. | GOOD | GOOD | MOD | MOD | 40+ | B 2 |
| H 50 | Semi-mature Monterey Cypress <i>Cupressus macrocarpa</i> | 5 | 0 | 0 n/a | 20# | See plan | Boundary hedge stretching across two sites. One half maintained, the other not maintained. | No action required. | GOOD | GOOD | MOD | HIGH | 40+ | B 1 |
| G51 to G55 not included within the remit of this report | | | | | | | | | | | | | | |
| G 56 | Young Silver Birch <i>Betula pendula</i> | to 12 | 1 | 1 n/a | 10 avg. | See plan | Situated on adjacent land. Limited inspection. Small group of Single-stemmed trees. | Remove. | GOOD | GOOD | MOD | LOW | 40+ | C 1 |
| G57 to T70 not included within the remit of this report | | | | | | | | | | | | | | |
| G 71 | Mature Mixed species <i>Details in observations</i> | to 16 | 1 | n/a n/a | 39 avg. | See plan | Group of well established trees located along the footpath within the park. Species include Sycamore, Hawthorn, Horse Chestnut and Aspen. | No action required. | GOOD | GOOD | HIGH | MOD to HIGH | 40+ | 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: Author Qualifications

Principal Consultant and Managing Director

Jonathan Cocking *F.R.E.S., Tech. Cert. (Arbor.A), PDip.Arb (RFS) FArbor.A 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), MArbor.A.* 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), MArbor.A.* 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) Tech.Arbor.A.* 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.

Consulting Staff: Ecology

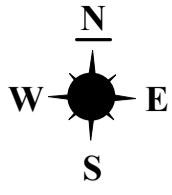
Adam West, Principal Ecologist *BSc (Hons) Animal and Wildlife Management.* Adam joined JCA to lead the expanding ecology department. Having returned to education as a mature student, Adam studied Countryside Management for two years before undertaking a Bachelor's degree, for which he was awarded First 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.

James Foster, Assistant Ecologist *BSc (Hons) Biology.* James gained his undergraduate degree in biology in 2012 from University of Leeds. James has plenty of experience in ecology, having worked countless projects of different scales all over the north and midlands. James has 9 years of experience surveying anything from reptiles to hedgerows and holds a Great crested newt licence level 1 and is working towards his bat licence and barn owl licence.

Administrative Staff

Catherine Cocking Accounts Manager.
Saunders Accounts Assistant.

Lorraine Spink Administrative Assistant. **Kelly Lisa Beedham** Marketing Manager.



Appendix 5: Tree Constraints Plan

ADDRESS: Belton Road, Epworth,
Doncaster, South Yorkshire, DN9 1JL.
JCA REF: 20630/EW

SCALE: 1:1000

PAPER SIZE: A2

SURVEYED BY: EW

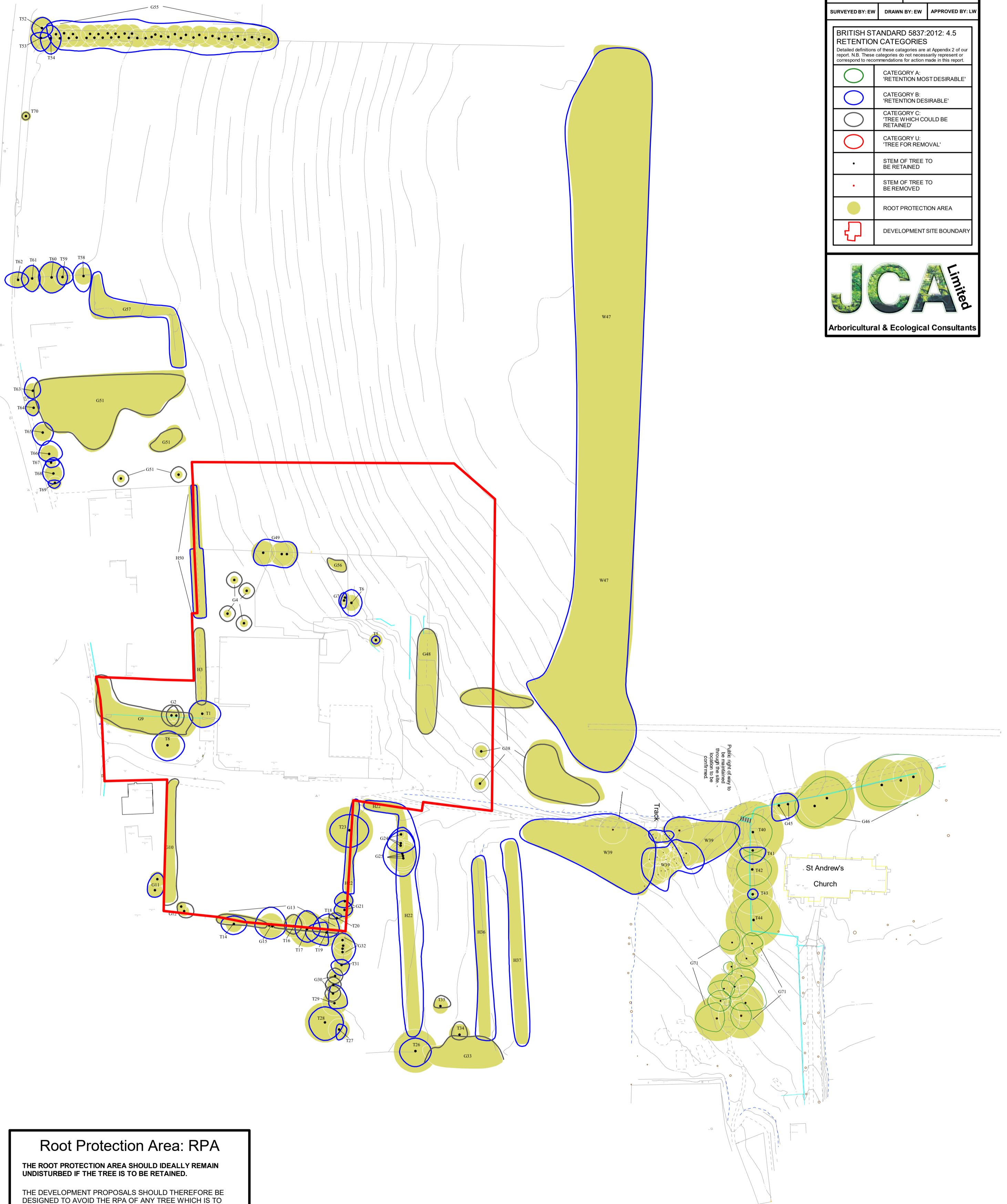
DRAWN BY: EW

APPROVED BY: LW

BRITISH STANDARD 5837:2012: 4.5 RETENTION CATEGORIES

Detailed definitions of these categories 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 |
| | DEVELOPMENT SITE BOUNDARY |

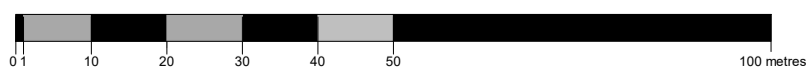


Root Protection Area: RPA

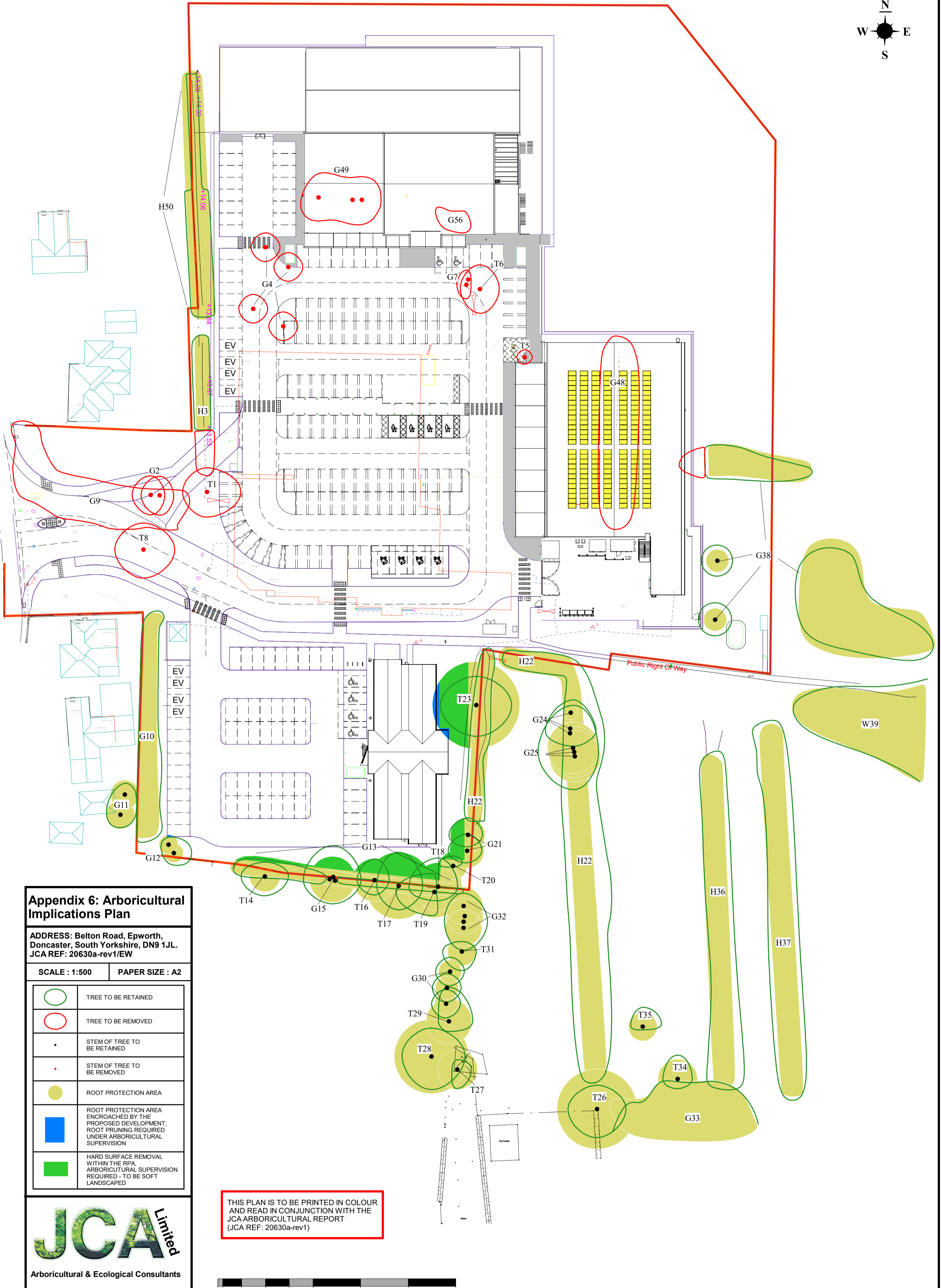
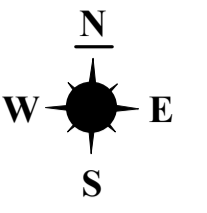
THE ROOT PROTECTION AREA SHOULD IDEALLY REMAIN UNDISTURBED IF THE TREE IS TO BE RETAINED.

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: 20630/EW and 20630a-rev1/EW)



Appendix 6: Arboricultural Implications Plan

ADDRESS: Belton Road, Epworth, Doncaster, South Yorkshire, DN9 1JL.
JCA REF: 20630a-rev1/EW

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; ROOT PRUNING REQUIRED UNDER ARBORICULTURAL SUPERVISION |
| | HARD SURFACE REMOVAL WITHIN THE RPA, ARBORICULTURAL SUPERVISION REQUIRED - TO BE SOFT LANDSCAPED |

THIS PLAN IS TO BE PRINTED IN COLOUR AND READ IN CONJUNCTION WITH THE JCA ARBORICULTURAL REPORT (JCA REF: 20630a-rev1)



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



.....
Emily Wilde *FdSc (Arboriculture)*.

31st July 2023
Revision 1 – 29th February 2024

For and on behalf of *JCA Ltd*

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- Heave Assessment
- Tree Root Identification

Veteran Tree Management

- Ancient Woodland Management
- Veteran Tree Management

Advice for Local Authorities and Social Housing

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

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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