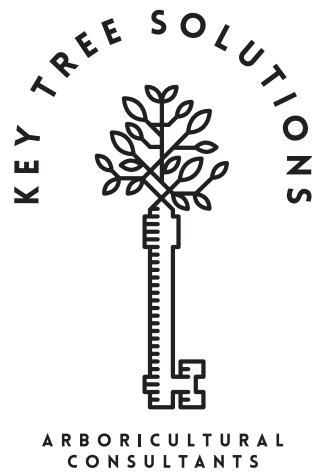




# BS 5837: 2012

## Arboricultural Report

|               |                                                  |              |                                      |
|---------------|--------------------------------------------------|--------------|--------------------------------------|
| Site Address: | 241 Manchester Road,<br>Thurlstone,<br>Sheffield | Client:      | H & E Electrical Services<br>Limited |
| Report Ref:   | MRTS01-21                                        | Report Date: | 26th May 2021                        |
| Author:       | Laurence Smith BSc (Hons)<br>Arb, M Arbor A      | Signed:      | <i>Laurence Smith</i>                |

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# **1. Introduction**

## **1.1 Intention of the Report**

John Exley requested that Key Tree Solutions conduct an independent arboricultural survey of the trees and vegetation located within the boundary set out by the client.

In some regions, trees are located outside the boundary but have the potential to impact on any development, such as overhanging branches or root protection areas. In these instances, they have been included in the survey.

This report has been compiled in line with the recommendations given in BS 5837:2012 to give an impartial assessment of the trees and vegetation currently present on site. The data provided should be used to guide the potential site development in relation to viable tree stock with the view of maintaining a high quality of tree cover. The arboricultural survey has been conducted as a prerequisite for any potential building developments in order to identify arboricultural constraints on site. This form of arboricultural survey does not constitute a tree health and safety inspection, although every effort has been made to identify significant hazards in relation to inspected trees. Where appropriate, recommendations have been given for tree works to manage risk to an acceptable level.

Survey elements can include Trees (T), Groups (G), Woodlands (W) and hedges (H). All survey elements have been plotted onto a site plan along with relevant constraints.

## **1.2 About the Author.**

The tree survey was carried out by Laurence Smith, an Arboricultural Consultant. Laurence has a BSc Honours Degree in Arboriculture, along with a BTEC National Diploma in Forestry and Arboriculture. He is a professional member of the Arboricultural Association with over 10 years of experience within the arboricultural industry, initially as an arborist and for the last 5 years as a consultant.

## **1.3 Reference Documents**

Tree and vegetation locations have been allocated using the topographical survey carried out by Met Geo Environmental. No further checking of this document has been carried out and as such, Key Tree Solutions can not be responsible for the accuracy of plotted locations.

In instances where additional arboricultural assets have been included by the surveyor but not picked up on the topographical survey, these assets have been clearly marked with an 'X'. These locations have been plotted using basic in-field triangulation. However, due to the inaccuracies in this form of data collection, locations should not be relied upon.

## **2.3 Survey Details**

The arboricultural survey (Appendix 2) was undertaken 25th of May 2021.

The survey took place during the spring season when the deciduous trees were developing new leaves. Environmental conditions were overcast with mild / moderate wind.

The young semi-formed leaves allowed for better observation of deadwood and canopy structure; however, it limited the author's ability to assess a tree's overall vigour fully.

All trees were visually inspected from ground level. In some instances, further investigations such as a climbing inspection or the use of decay detection tools may be necessary to provide additional information. These have been recommended if deemed appropriate.

Tree data was collected using an electronic distometer and specialist measuring tape in all reasonable situations. In some circumstances, such as where there was a lack of access or prolific Ivy growth around the stems, measurements have been estimated and clearly indicated with an asterisk (\*).

In regions where trees form dense groups or woodlands, data has been collected on an individual stem that best represents the group. Classification has been given for the group as a whole and may not be representative of every tree within that group or woodland.

### **3. Site Description**

#### **3.1 Land Use**

The site is residential in nature with a single dwelling located in the south west of the plot. A number of hard standing regions including patios and low walls exist around the dwelling with a small outbuilding located to the north west of the main building.

#### **3.2 Topography**

The site has a moderate fall in height from the north to the south.

#### **3.3 Soil**

Information gathered from the British Geological Survey states that the area's underlying bedrock is between Pennine Lower Coal Measures Formation - Mudstone / siltstone and Greenmoor Rock - Sandstone.

Further information collected from the Cranfield Soil and Agrifood Institute states that the local soil is "Freely draining slightly acid loamy soils" with a Loamy texture.

#### **3.4 Tree Cover**

Although open farmland dominates much of the surrounding area, tree cover remains relatively high with a number of small woodlands and tree groups within the region.

#### **3.5 Age Class Mix and Diversity**

Trees that remain on site are predominantly young and semi mature specimens with only one notable exception. Many of these trees are assumed to have been planted by the previous tenants and are estimated to be between 10 and 20 years old.

Species surveyed included native and naturalised broadleaf specimens predominantly focusing around Beech, Oak, Willow, Rowan and Hawthorn along with a selection of woody shrubs.

### **4. Tree Status**

Information obtained from the Barnsley Metropolitan Borough Council's interactive map visited on the 26th May 2021 shows that the trees within the proposed development site are not covered by a TPO or within a conservation area. A screen shot from this search is available in Appendix 4.

Given the implications for unauthorised tree removal or works, it is highly recommended that a further check is carried out prior to any works being undertaken. This is especially relevant as the Council is able to serve a TPO at any time.



## 5. Tree Descriptions and Recommendations

Trees have been described and allocated an ID alongside any relevant recommendations within the arboricultural survey found in Appendix 2. This can be cross referenced with the site plan in Appendix 3.

An explanation for the schedule including any shorthand or acronyms can be found in Appendix 1.

## 6. Summary of the Tree Resource

### 6.1 Tree Classification and Recommendations

Results of the tree survey show that there are a total of 12 surveyed elements which present site constraints. Of these, 0 were identified as type A. 3 were identified as having a retention category of B, while 13 fall into category C.

Please refer to Appendix 1 for further information regarding retention categorisation. The tree category distribution alongside any known tree preservation orders has been displayed in Table 1.

Table 1. Tree categories and their level of protection.

| Protection Status          | Category A | Category B | Category C | Category U |
|----------------------------|------------|------------|------------|------------|
| No known protective status |            | 3          | 13         | 0          |
| Conservation area          |            |            |            |            |
| Tree Preservation Order    |            |            |            |            |
| <b>Totals</b>              | <b>0</b>   | <b>3</b>   | <b>13</b>  | <b>0</b>   |

In some instances, recommendations have been made in the interests of public safety to ensure the long-term value of on-site trees. These recommendations have been made irrespective of any plans for development and should be acted upon to mitigate on-site risks. These recommendations can be found in Appendix 2.

### 6.2 Remedial Tree Works

Minor tree works have been recommended for a number of trees. These recommendations have been given in order to manage the foreseeable risks and to improve the quality of the trees currently at the site. Management in terms of aesthetics such as hedge cutting, self set tree removal and management of woody shrubs has not been included within this survey.

### 6.3 Tree Removals

No trees have been identified for removal.

### 6.4 Monitoring / Further Investigation

The surveyed trees are for the most part in good condition with no significant defects. As part of a duty of care it is the property owner's responsibility to ensure the health and safety of all trees within the boundary. As such, monitoring should be ongoing with periodical inspections by a qualified arborist.

## **7. Existing Site Constraints and Considerations**

The following is an overview of the arboricultural related constraints on this site in reference to any future development. The details of any future development are not currently known at this point.

Tree categorisation gives an indication of a tree's overall value in its current environment. Details of individual tree categorisation can be found in Appendix 2. Category A trees are described as particularly good examples of the species with minimal defects. A classified trees should not be removed and incorporated into any potential design. Trees that are categorised as B are considered to be a good quality tree and the removal of these is likely to be resisted by the local planning authority. Category C trees are of much lower value and unlikely to be met with resistance if removed, provided their loss is suitably mitigated against. Category U trees are in a significantly poor condition or are already dead and should be removed unless they provide some form of ecological value and pose a low risk to the potential development. Where possible, all tree removals should be mitigated against by allocating new tree planting locations within the finished design.

Tree locations have been plotted onto the Tree Constraints Plan found in Appendix 3. The plan identifies each with its coloured canopy extent representing its associated categorisation (Retention A: green canopy, Retention B: blue canopy, Retention C: grey canopy, Retention U: red canopy), and also the associated rooting zone (Root Protection Area or RPA shown in pink dashes). In order to enable the survival of trees shown to be retained within any proposals, both the canopy of the tree and its RPA must be completely avoided wherever possible. This relates not just to the location of new buildings, but also to the location of new areas of hard standing, proposed utility routes and any ground-level changes (both excavations and soil piling). Where this is not possible, specialist construction methods and materials will need to be used.

It is accepted that it is not always possible to avoid the RPA entirely, in which case the consulting arborist should be made aware of any possible incursions and where possible advise on mitigation action. Any such actions should be detailed within an Arboricultural Implications Assessment (AIA).

Shading by any retained trees should be considered and where buildings are to be positioned within the shade-cast areas, these should be designed in order to maximise available light.

### **7.1 Protection for Retained Trees**

Trees that are to be retained will require protective measures during the development, which typically involves temporary fencing around the RPA which is securely anchored to the ground. Where this is not possible or practicable, ground protection can be utilised which is specific to the vehicle weight.

No material storage is permitted within the RPA of retained trees unless confirmed to be acceptable by the consulting arboriculturalist. The exact details and location of protective measures should be included within an Arboricultural Method Statement (AMS) if deemed necessary by the planning authority.

Positioning of any site compound including office, facilities, toilets and storage of materials should be carefully considered and, where possible, be located away from trees and their associated RPAs.

## 6. Conclusions

The trees onsite are considered to be relatively low value specimens due to their age and stature. Despite this, their locations makes them visible to anyone using Manchester Road and as such their amenity value is considered to have a moderate impact on the local tree-scape.

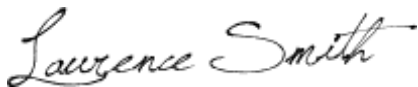
With reference to any potential development at the site, provided the proposal is located to the west of the green belt boundary, there are very little in the way of arboricultural constraints expressed, with only the RPA of T9 crossing this boundary.

In terms of other forceable impacts, the low canopies of the Maples (*Acer*) included within H1 have low canopies which extend over the driveway. While this may be acceptable for normal traffic, larger vehicles would likely impact on these limbs.

Although not considered a constraint for site development, the canopy of T1 (located off-site) is in contact with this property's overhead utility cable. A reduction in height of this specimen should be discussed with the owner of T1 in order to ensure the cable is not damaged.

Given the volume of trees removed from site, consideration for restocking should be given and incorporated into any development proposal.

**Signed**

A handwritten signature in cursive script that reads "Laurence Smith". The ink is dark and the signature is fluid.

Laurence Smith BSc (Hons) Arboriculture, M Arbor A

## 8. Caveats and Limitations

### 7.1

All trees have been inspected from ground level using non-invasive techniques unless otherwise stated. In some instances, the surveyor may have used aerial photography to capture images from the site or observe overall canopy health, however this does not constitute an aerial inspection.

### 7.2

Climate conditions including storm, drought and temperature-related factors can cause damage and failure in apparently healthy trees. The client should consider that all trees potentially pose a hazard with the justification for action based on the risk level and target's value. While every effort has been made to detect any significant defects in inspected trees, it is impossible to guarantee a tree's safety.

### 7.3

Comments on tree conditions and their associated risk relate to the date and time the survey was undertaken. Tree health and structure are subject to development due to the tree's biological nature or other mechanical or physical changes nearby. As such, trees should be inspected at intervals relative to identified site risks and following relevant HSE and Central Government guidance, typically between 1 and 3 years.

### 7.4

No reports regarding underground utilities or past construction works have been made available to the author. The client should note that such documentation may affect the recommendations of this report.

### 7.5

As an arboricultural report, the author is not qualified to comment on damage to buildings or underground utilities that may or may not have been caused by roots. Any observations made regarding the condition of such structures are from a lay person's view.

### 7.6

In instances where trees have been protected by Tree Preservation Orders (TPOs) or other protective acts such as conservation areas, the client should not undertake any tree works without first obtaining permission from the relevant organisation.

### 7.7

All works should be undertaken following the appropriate Duty of Care and carried out to the standards set out in the British standards document BS 3998:2010 '*Tree work - recommendations*'.

For example, a contractor should include site-specific risk assessments and due diligence inspections for the presence of protected species, including all nesting birds and bats.

## References

British Geological Survey (Online) <https://www.bgs.ac.uk>

British standards document BS 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*'

British standards document BS 3998:2010 '*Tree work - recommendations*'

Barnsley Metropolitan Borough Council (Online) <https://www.barnsley.gov.uk>

Management of the risk from falling trees or branches - Health & Safety Executive (HSE) Document

2018 National House Building Council (NHBC) standards

## Appendix 1: Survey Reference Information

| Column Heading           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tree ID                  | Each tree/group has been given a unique number prefixed with a letter to represent the element type. (T) Tree, (G) Group, (H) Hedge, (W) Woodland.                                                                                                                                                                                                                                                                                                                                                                                |
| Age Class                | The tree is described as Young, Semi-Mature, Early-Mature, Mature, Over-Mature, Veteran or Dead.                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Species                  | The English common name has been used along with botanical name in italics.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Height                   | An indication of the tree's height measured in metres.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Diameter                 | The diameter of the tree when measured at 1.5 metres from ground level.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| N E S W                  | The distance the live crown extends in each of the four cardinal directions.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| First Branch & Direction | Height given in meters that the first significant branch extends from and the direction of extent.                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Canopy Height            | Height given in metres of the lowest part of the canopy.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Physiology               | A quick reference guide to the trees overall health and condition. Given as Good, Fair or Poor.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Structure                | A quick reference guide to the trees arrangement of branch and stem architecture taking into account cavitation or other defects such as bark included unions. Given as Good, Fair or Poor.                                                                                                                                                                                                                                                                                                                                       |
| Comments                 | Narrative comment on the general condition including significant defects and overall appearance.                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Recommendations          | Any works recommended in order to minimise risk, improve form or maintain a high value.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Priority                 | Any recommendations made have been given a priority rating stated as Low, Medium or High. <ul style="list-style-type: none"> <li>• Low priority - No timescale and is predominantly for remedial pruning works to improve form or defects.</li> <li>• Medium priority - Should be acted upon within 12 months and is considered to pose a modest risk.</li> <li>• High priority - Should be acted upon immediately and poses a significant risk due to failure potential or a defect located over a high traffic area.</li> </ul> |
| Remaining contribution   | An estimation of how long the feature will contribute to its surroundings. This is recorded in bands of either <10 years, 10+ years, 20+ years and 40+ years.                                                                                                                                                                                                                                                                                                                                                                     |
| Grading                  | The trees are graded to the categories prescribed within BS5837:2012 (U, A, B & C).                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| RPA                      | Calculated as prescribed in section 4.6 of BS5837:2012, provided as a radius from the tree's stem (m).                                                                                                                                                                                                                                                                                                                                                                                                                            |

Appendix 2: Arboricultural Survey

| Tree ID | Age Class    | Species                                | Height (m) | Diameter (mm)      | N E S W          | First Branch & Direction | Canopy Height | Observations                                                                                                                                                                                                                                                                                               | Recommendations                                                          | Priority | Remaining contribution | Grading | Physiology | Structure | Amenity Value | RPA |
|---------|--------------|----------------------------------------|------------|--------------------|------------------|--------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------|------------------------|---------|------------|-----------|---------------|-----|
| H1      | Early Mature | Mix                                    | 5          | 75                 | N/A              | Ground level             | Ground level  | Mixed species hedge with Maple, Rhododendron, Mahonia, Cotoneaster, Laurel, Ornamental Pear, Honeysuckle along with a number of other woody shrubs. Sides have been cut back to give clearance for the driveway up to a hight of 2.5m. Above this point branches begin to arch over the drive by up to 2m. | Ensure clearance for any proposed vehicle entry.                         | Low      | 10                     | C       | Good       | Good      | Medium        | 1   |
| T1      | Early Mature | Holly ( <i>Ilex aquafolium</i> )       | 9          | 150, 200 *         | 2, 2, 2, 2       | 4S                       | 3             | Located off site. Growing under utility line.                                                                                                                                                                                                                                                              | Reduce height by 3m                                                      | Low      | 20                     | B       | Good       | Good      | Medium        | 2.5 |
| T3      | Semi Mature  | Beech ( <i>Fagus sylvatica</i> )       | 10         | 380                | 5, 2, 3.5, 4.5   | 1.5 W                    | 2             | Stem divides into 4 at 0.5m. DBH measured below this point. Minor deadwood internally with crowded limbs.                                                                                                                                                                                                  | Remove deadwood                                                          | Low      | 10                     | C       | Good       | Fair      | Medium        | 4.5 |
| T2      | Semi Mature  | Beech ( <i>Fagus sylvatica</i> )       | 10         | 320, 300           | 6, 6, 3, 3       | 1.5N                     | 2             | Minor internal dead and rubbing branches.                                                                                                                                                                                                                                                                  | Remove deadwood                                                          | Low      | 10                     | C       | Good       | Fair      | Medium        | 4.5 |
| T4      | Semi Mature  | Beech ( <i>Fagus sylvatica</i> )       | 11         | 320                | 3, 3.5, 4.5, 2.5 | 1.5 S                    | 1.5           | Bifurcation at 1m with large bark included union. Secondary bark included union at 3m with multiple rubbing branches. Likely to problematic if left to maturity.                                                                                                                                           | Consider early removal                                                   | Low      | 10                     | C       | Good       | Poor      | Medium        | 4   |
| T5      | Early Mature | Beech ( <i>Fagus sylvatica</i> )       | 10         | 350                | 3.5, 6, 6, 3     | 1S                       | 2             | Multiple upright leaders with minor rubbing branches. Unions adequate.                                                                                                                                                                                                                                     | None                                                                     |          | 10                     | C       | Good       | Good      | Medium        | 4   |
| T6      | Semi Mature  | Rowan ( <i>Sorbus aucuparia</i> )      | 5          | 160                | 2, 2, 2, 2       | 1.5 E                    | 1.5           | Minor deadwood, previously suppressed, potential to become a decent specimen now it has become more exposed.                                                                                                                                                                                               | Remove deadwood                                                          | Low      | 10                     | C       | Fair       | Good      | Low           | 2   |
| G1      | Semi Mature  | Holly ( <i>Ilex aquafolium</i> )       | 7.5        | 75                 | 2, 2, 2, 3       | Ground Level             | Ground level  | Ornimental Holly group with Juniper and Cypress at the north and end. Non holly species bring little to the benefit of the group due to dead open sections. Hollys becoming crowded.                                                                                                                       |                                                                          |          | 10                     | C       | Good       | Good      | Medium        | 1   |
| T7      | Semi Mature  | Oak ( <i>Quercus robur</i> )           | 10         | 370                | 3, 5.5, 3.5, 3.5 | 1.5 E                    | 1             | Canopy lifted to 4m on north, south and west sides, 5 retained lower branches growing east over the boundary wall. Lower branches have the potential to be impacted by farming operations.                                                                                                                 | Remove lower branches to match the rest of the canopy.                   | Low      | 20                     | B       | Fair       | Fair      | Medium        | 4.5 |
| T8      | Early Mature | Hawthorn ( <i>Crataegus monogyna</i> ) | 8          | 170 *              | 2.5, 2.5, 3, 2   | Ground level             | Ground level  | Growing within shrub boundary with Rose and Holly at the base.                                                                                                                                                                                                                                             | Potential to remove lower woody shrub growth and leave as an individual. |          | 10                     | C       | Good       | Fair      | Low           | 2   |
| H2      | Semi Mature  | Mixed                                  | 5          | 75                 | 3, 3, 3, 3       | Ground level             | Ground level  | Overgrown hedge with Rose, Blackthorn, Laurel, Holly. Viable green screen but currently looks unsightly.                                                                                                                                                                                                   |                                                                          |          | 10                     | C       | Fair       | Fair      | Low           | 1   |
| T9      | Mature       | Goat Willow ( <i>Salix caprea</i> )    | 13.5       | 400, 300, 410, 480 | 4, 6, 6, 6.5     | 3 W                      | 3             | A well formed specimen with only 1 minor bark included union on the north side. Growing over street and pavement. Species is susceptible to limb failure.                                                                                                                                                  |                                                                          |          | 20                     | B       | Good       | Good      | High          | 8   |

## **Appendix 3: Site Plan**

See the following pages





## Appendix 4: Tree Protection Search

The following image is a screen shot of the search carried out on Barnsley Metropolitan Borough Council's interactive map for TPO's and Conservation areas on the 26th May 2021.

