

# MAG Building 401

Tree Survey Report

MAG Property

Project number: 60625935

August 2021

Quality information

| Prepared by                                            | Checked by                                                  | Verified by                                                 | Approved by                           |
|--------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------|
| Georgina Tearne<br>Senior Arboricultural<br>Consultant | Thomas Fairhurst,<br>Principal Arboricultural<br>Consultant | Thomas Fairhurst,<br>Principal Arboricultural<br>Consultant | Andy Wakefield,<br>Associate Director |

Revision History

| Revision | Revision date | Details     | Authorized | Name           | Position           |
|----------|---------------|-------------|------------|----------------|--------------------|
| 00       | 05.08.2021    | First Issue | 05.08.2021 | Andy Wakefield | Associate Director |
|          |               |             |            |                |                    |
|          |               |             |            |                |                    |
|          |               |             |            |                |                    |

Distribution List

| # Hard Copies | PDF Required | Association / Company Name |
|---------------|--------------|----------------------------|
|               |              |                            |
|               |              |                            |
|               |              |                            |
|               |              |                            |

**Prepared for:**

MAG Property

**Prepared by:**

Georgina Tearne  
Senior Arboricultural Consultant  
T: +44 (0) 113 3018 641  
M: 07384 464 084  
E: georgina.tearne@aecom.com

AECOM Limited  
5th Floor, 2 City Walk  
Leeds LS11 9AR  
United Kingdom

T: +44 (0)113 391 6800  
aecom.com

© 2021 AECOM Limited. All Rights Reserved.

This document has been prepared by AECOM Limited ("AECOM") for sole use of our client (the "Client") in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM and the Client. Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of AECOM.

## Table of Contents

|       |                                                          |    |
|-------|----------------------------------------------------------|----|
| 1.    | Introduction .....                                       | 5  |
| 1.1   | Background .....                                         | 5  |
| 1.2   | Trees and the Planning Process .....                     | 5  |
| 1.2.1 | Local Policy Context .....                               | 5  |
| 1.3   | Methodology .....                                        | 6  |
| 2.    | General Arboricultural Principles .....                  | 7  |
| 2.1   | General Principles .....                                 | 7  |
| 2.2   | Below Ground Constraints .....                           | 7  |
| 2.3   | Soils .....                                              | 7  |
| 2.4   | Above Ground Constraints .....                           | 8  |
| 2.5   | Trees and Risk in the Context of Development .....       | 8  |
| 2.6   | Trees and Wildlife .....                                 | 8  |
| 2.7   | Tree Works .....                                         | 8  |
| 3.    | Field Work Observations .....                            | 9  |
| 3.1   | The Site .....                                           | 9  |
| 3.2   | The Trees .....                                          | 9  |
| 3.3   | Statutory and Non Statutory Designations .....           | 9  |
| 3.3.1 | Statutory Designations: .....                            | 9  |
| 3.3.2 | Non Statutory Designations .....                         | 10 |
| 4.    | Tree Related Constraints and Opportunities .....         | 11 |
| 4.1   | Tree Categorisations as per BS5837:2012 .....            | 11 |
| 4.2   | Considerations .....                                     | 11 |
| 4.3   | The Future Impact of Trees .....                         | 12 |
| 4.4   | Loss of Companion Shelter .....                          | 12 |
| 4.5   | Tree Protection .....                                    | 12 |
| 4.6   | Tree Planting .....                                      | 13 |
| 5.    | Summary and Conclusion .....                             | 14 |
| 6.    | References .....                                         | 15 |
|       | Appendix A Tree Constraints Plan .....                   | 16 |
|       | Appendix B Tree Survey Schedule .....                    | 17 |
|       | Appendix C Key to Abbreviations Used in the Survey ..... | 25 |
|       | Appendix D Site Photography .....                        | 26 |

## Figures

|           |                                                                                                                                      |    |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------|----|
| Picture 1 | Planted trees within a hedgerow (T2 & T3) .....                                                                                      | 26 |
| Picture 2 | Planted rowan trees with T6 being in poor condition (T5 & T6) .....                                                                  | 27 |
| Picture 3 | Damage to T6 that exists from base into the tree's canopy .....                                                                      | 28 |
| Picture 4 | A mature oak (T14) at the entrance to the site. ....                                                                                 | 29 |
| Picture 5 | T17, a mature ash with dense ivy growth obscuring visibility .....                                                                   | 30 |
| Picture 6 | A large declining oak (T18) at the edge of the woodland group, large dead limbs but still some sparse live growth in the crown ..... | 31 |
| Picture 7 | A large dead limb seen on T18, overhead wires can also be seen running through the trees crown .....                                 | 32 |
| Picture 8 | One of many mature ash trees lining the woodland edge .....                                                                          | 33 |
| Picture 9 | Standing dead tree within the woodland group .....                                                                                   | 34 |

## Tables

|          |                                                 |    |
|----------|-------------------------------------------------|----|
| Table 1: | BS5837:2012 Tree Categorisation process .....   | 6  |
| Table 2: | Summary of trees in each quality category. .... | 11 |

# 1. Introduction

## 1.1 Background

AECOM has been instructed by MAG Property (the Client) to carry out a Tree Survey to BS5837:2012 Trees in relation to design, demolition and construction – Recommendations (BS5837); to include trees with the potential to be affected by development works within or immediately adjacent to the predetermined area of land at Manchester Airport (hereafter referred to as ‘the Site’). This report identifies preliminary information in relation to the nature and level of constraints posed by existing trees on the Site and is intended to inform the development of any design proposals and working methodologies to ensure that the potential impacts on significant trees are fully considered.

## 1.2 Trees and the Planning Process

The National Planning Policy Framework (NPPF) seeks to ensure that new development is sustainable and underlines the importance of Green Infrastructure, of which trees form an integral part. This encompasses a recognition of the importance of trees in relation to the management of air, soil and water quality along with other associated ecosystem services and climate change adaptation. The NPPF also seeks to achieve the protection and enhancement of landscapes and a net gain in biodiversity. Finally, it specifically identifies veteran and ancient trees and woodland as a highly valuable and irreplaceable habitat.

Local Planning Authorities (LPA) in the UK have a statutory duty to consider both the protection and planting of trees when considering planning applications. The potential impact of development on all trees (including those not protected by a Tree Preservation Order or other statutory designation) is therefore a material consideration.

‘BS5837:2012 Trees in relation to design demolition and construction – Recommendations (BS5837)’ provides a framework which sets out how trees should be considered in this context and also explicitly applies to development where planning consent is not required.

BS5837 recommends that a tree survey is undertaken to identify the quality and benefits of trees and the spatial constraints associated with them. This is then used to produce a Tree Constraints Plan showing the above and below ground constraints associated with trees. This drawing is used to inform the design process and to allow the retention of good quality trees where appropriate.

An Arboricultural Impact Assessment is then developed to identify the likely direct and indirect impacts of the Proposed Development, and a Tree Protection Plan is prepared to identify trees to be removed or retained and to illustrate how retained trees are to be protected. An Arboricultural Method Statement is often required as a condition of planning consent to detail how sensitive operations are to be achieved in proximity to retained trees. These elements are the minimum normally required for a planning application and are intended to ensure both a sustainable and harmonious relationship between trees and new development.

### 1.2.1 Local Policy Context

Manchester City Council has a statutory duty to consider tree retention and new planting when assessing planning applications. The Manchester City Council Core Strategy Policy EN 9<sup>1</sup> Green Infrastructure states that *‘new development will be expected to maintain existing green infrastructure in terms of its quantity, quality and multiple function. Where the opportunity arises and in accordance with current Green Infrastructure Strategies the Council will encourage developers to enhance the quality and quantity of green infrastructure, improve the performance of its functions and create and improve linkages to and between areas of green infrastructure. Where the benefits of a proposed development are considered to outweigh the loss of an existing element of green infrastructure, the developer will be required to demonstrate how this loss will be mitigated in terms of quantity, quality, function and future management.....The Council will seek to protect existing street trees and promote new planting, particularly where this can enhance green links in the urban area’.*

Policy EN 15 Biodiversity and Geological Conservation aspires to maintain or enhance sites of biodiversity and geological value throughout the City by protecting and conserving the City’s existing trees and woodlands and the aim for a net increase in trees across the City and also sites that are recognised for their geological importance.

---

<sup>1</sup> [https://secure.manchester.gov.uk/downloads/download/4964/core\\_strategy\\_development\\_plan](https://secure.manchester.gov.uk/downloads/download/4964/core_strategy_development_plan)

### 1.3 Methodology

The tree survey has been based on the topographical survey plan provided (ref: XREF\_TOPO). .

A number of trees were not included on the topographical survey plan and have been plotted indicatively with reference to site features and publicly available aerial photography. Such trees have been marked with an '\*\*' on the Tree Survey Schedule included as Appendix B. As such all positions for these trees must be considered to be indicative only and the relative distances of features must be measured out on the Site as required.

The survey was otherwise conducted in accordance with the requirements of BS5837.

The initial fieldwork was undertaken in June 2021, during which time dimensional data and observational information were collected. A diameter tape measure was used to measure stem diameters where feasible.

The fieldwork informing this report has comprised a preliminary, non-intrusive, visual survey undertaken from ground level with the specific intention of evaluating the quality and benefits of trees on the Site.

Where further inspection is deemed appropriate to ascertain the condition of the tree or other arboreal features, this has been identified within the preliminary management recommendations. Average dimensions or dimensional ranges have occasionally been used, where appropriate, to best describe features.

The Root Protection Area (RPA) is the notional extent of what is considered to be the key rooting area for tree health and function. This is generally depicted as a circle but can be amended to a polygon with an equivalent area in accordance with Section 4.6.2 of BS5837 where the RPA is likely to have developed asymmetrically. The RPA of all surveyed trees is depicted as a circle and no RPAs have been amended.

A Tree Constraints Plan showing the position of trees and the spatial constraints associated with them is included as Appendix A of this report, which corresponds with the Tree Survey Schedule presented in Appendix B.

The tree categorisation process recommended by BS5837:2012 is summarised in the table below and corresponds with the tree canopy outline shown on the Tree Constraints Plan (Appendix A) and the information in the Tree Survey Schedule (Appendix B).

**Table 1: BS5837:2012 Tree Categorisation process**

| Category | Definition                                                    |
|----------|---------------------------------------------------------------|
| A        | High quality, minimum of 40+ years remaining contribution     |
| B        | Moderate quality, minimum of 20+ years remaining contribution |
| C        | Low quality, minimum of 10+ years remaining contribution      |
| U        | Unsuitable for retention, <10 years remaining contribution    |
| 1        | Arboricultural value                                          |
| 2        | Landscape value                                               |
| 3        | Conservation or cultural value                                |

## 2. General Arboricultural Principles

### 2.1 General Principles

Trees are dynamic living organisms which provide essential benefits to society and the wider environment. Any proposed development with the potential to impact on trees must take into consideration the value of trees on site; the impact of any proposed activity along with any potential future conflicts on the Site. Suitable measures to safeguard retained trees or mitigate the loss of trees (to be removed) will need to be fully considered and may be subject to a condition of planning consent.

Tree branches and roots frequently grow across site boundaries and offsite trees can pose a significant constraint and should be carefully considered when assessing the developable space within a site.

### 2.2 Below Ground Constraints

Below ground tree roots and the soil environment in which they grow need to be protected if the tree is to be retained. Trees grow in association with fungi and other soil organisms which are of key importance to tree health. Roots are essential for anchorage, the uptake of water and nutrients, and the storage of energy (carbohydrates) for the future growth and function of the tree.

Roots can be damaged by physical severance or wounding (e.g. following excavation of the soil) which can lead to the development of decay and a decline in vitality and/or instability. Raising the soil level can bury tree roots at a depth where suitable conditions for growth are less available. Toxic materials discharged into the soil (such as cement-based aggregates, fuel and chemicals) can lead to root death and dysfunction. Soils can be compacted to levels inhospitable to tree growth with even a single pass of machinery, regular pedestrian traffic or the storage of plant and materials. Relieving compaction can be problematic and may require costly remedial works. Changes in drainage/water levels can also have significant long-term impacts for tree health.

The effects of these incursions may take many years to manifest, with a resulting decline in amenity value and potentially the death or failure of the tree. It should be noted that older trees are particularly sensitive to damage and changes in conditions.

The Root Protection Area (RPA) is a notional area considered to be the minimum zone that must be protected to avoid any adverse impacts on retained trees. This area is deemed to be particularly important for tree stability, growth, function and health. However, roots may extend far greater distances, with the distribution of the root system relating directly to the availability of suitable conditions for growth (namely oxygen, water and nutrients). It is generally accepted that tree roots are predominantly located in the upper 1000mm of soil; however, roots may develop at deeper levels where conditions allow.

RPAs are calculated as per BS5837: 2012 Annex C, D and Section 4.6 in the BS 5837 2012 Document.

The RPA of the existing tree stock is an important material consideration when considering Site constraints and planning development activities. The RPA of significant trees on Site is shown on the Tree Constraints Plan (Appendix A).

The default position must be that all development, including any associated services will occur outside the RPAs of retained trees. Where this is unavoidable, it may be appropriate to use special measures to install structures, services or surfacing within RPAs which allow the protection of roots and soil structure which are essential for tree growth and keep any incursion to a minimum.

Further steps to improve or increase the useable rooting area available to the tree may also be required.

### 2.3 Soils

On shrinkable clay soil, tree growth can lead to the differential movement of structures as moisture is removed from the soil during the growing season. Soils must be carefully assessed, and any foundations must be installed following the recommendations of National House Building Council (NHBC) Standards Chapter 4.2: *Building Near Trees (2021)* to avoid potential future damage. Where trees which predate existing structures are to be removed, this can result in heave as the soils are re-wet.

The advice of a suitably qualified engineer must be obtained to inform any potential issue of heave. Specific advice in relation to this issue is beyond the scope of this report.

## 2.4 Above Ground Constraints

Tree stems and branches can restrict available space on site. Damage or wounding (including excessive pruning) can significantly reduce the amenity contribution of the tree and may lead to the development of dysfunction and decay, with significant long-term implications for tree health. The future impact of existing trees should be carefully considered, including individual species characteristics (such as potential future size, fruit fall, shade etc.) and how the tree will interact with any proposed development and future land use. Annual tree growth can lead to direct damage if stems/branches (or roots) come into physical contact with structures and this must also be taken into consideration.

## 2.5 Trees and Risk in the Context of Development

Tree owners/managers have a legal duty to prevent foreseeable harm. It is generally accepted that this duty can be fulfilled by undertaking proactive inspections of significant trees to identify obvious defects and by taking appropriate remedial action or gaining further advice as appropriate.

AECOM can provide surveys and advice in relation to tree risk management if required. Further guidance is available from the National Tree Safety Group<sup>2</sup>.

The tree survey carried out as the basis of this report is primarily for planning purposes, focusing on the quality and benefits of the trees and is not specifically designed to assess the safety of trees on Site. However, when obvious issues have been identified recommendations have been included in the Tree Survey Schedule.

The Construction (Design and Management) Regulations (2015) states that developers and contractors have responsibilities for health and safety as a result of their actions. Should trees be left in an unstable or hazardous condition the Health and Safety Executive (HSE) could seek to prosecute those responsible along with the potential for further Civil claims for damages.

## 2.6 Trees and Wildlife

Full consideration must be given to the presence of species protected under the Wildlife and Countryside Act (1981 - as amended), the Countryside Rights of Way Act (2000) and the Conservation of Habitats and Species Regulations (2017), in particular the presence of bats and nesting birds. It is recommended that wherever possible, significant tree/hedge works take place outside of the typical bird nesting season of March to September. The advice of a suitably qualified Ecologist is recommended in relation to any potential impacts on protected species.

## 2.7 Tree Works

Any tree surgery recommendations contained within this report are to be undertaken in accordance with BS3998: 2010 Tree work – Recommendations (BS3998) by suitably qualified and insured contractors. Significant pruning works are best undertaken when trees are dormant or outside periods of high functional activity to reduce the overall impact on energy available to the tree for growth and processes. In general, the optimum period for works is between November to February and July to August (subject to the presence of protected species) when the tree is less active and better placed to respond to wounding and a reduction in leaf area.

---

<sup>2</sup> National Tree Safety Group (NTSG), 2011. Common sense risk management of trees. Forestry Commission.

### 3. Field Work Observations

#### 3.1 The Site

The Site is located within Manchester Airport along Pinfold Lane, Manchester.

The existing use is for the airport's coach and staff parking. Wilmslow Old Road borders the Site to the south, Pinfold Lane to the north, an unnamed access road to the west and Avro Way to the north west.

The Site consists of airport coach parking and industrial buildings associated with airport infrastructure.

The Landis soilscape viewer<sup>3</sup> was checked on 24<sup>th</sup> of June 2021 and the soil type was identified as slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils. Shrinkable clay soils can be subject to heave or subsidence associated with water use by trees and this should be taken into account in the design of any foundations for structures. This issue is beyond the scope of this report.

#### 3.2 The Trees

A total of 40 tree features (combined individual trees, woodland, hedgerow and tree groups) have been included in the survey which includes one large woodland group present on the western boundary of the Site. Individual trees that are of significance within the woodland group have been recorded as individual trees.

The trees on the Site are predominantly semi-mature to mature and in fair to good condition. Species present on the Site include common alder (*Alnus glutinosa*), rowan (*Sorbus aucuparia*), rockspray cotoneaster (*Cotoneaster horizontalis*), Leyland cypress (*Cupressus × leylandii*), wild cherry (*Prunus avium*), dogwood (*Cornus sanguinea*), elder (*Sambucus nigra*), sycamore (*Acer pseudoplatanus*), English oak (*Quercus robur*), common ash (*Fraxinus excelsior*), wych elm (*Ulmus glabra*), hawthorn (*Crataegus monogyna*), common plum (*Prunus domestica*), aspen (*Populus tremula*), willow sp. (*Salix*), silver birch (*Betula pendula*), English yew (*Taxus baccata*), holly (*Ilex aquifolium*) and horse chestnut (*Aesculus hippocastanum*).

Many of the trees on the Site are located in formally planted areas along the Site boundary. The most significant trees included in the survey are located on the south western boundary within the woodland group.

A number of trees have defects that require remedial pruning works or felling. This includes tree T6; a rowan tree with major wounding from the base into the crown, tree T16; a dying cherry and G39; a group of leaning trees in poor condition. Tree T18 is a large English oak which has also been identified to be in poor condition, with many large dead limbs present and the stem is covered with dense ivy growth.

The woodland group (W26) provides important screening value for the Site along with adding to the overall biodiversity of the area. The woodland has largely been left unmaintained. There are some large standing dead trees within the group which provide habitat value. There is minimal spacing between the more immature trees within the group and the woodland could benefit from thinning works. Rubbish has been tipped throughout the woodland.

Site photography can be found at Appendix D located to the rear of this report.

#### 3.3 Statutory and Non-Statutory Designations

##### 3.3.1 Statutory Designations:

AECOM checked the Manchester City Council website<sup>4</sup> on 24<sup>th</sup> June 2021 and there were no Tree Preservation Orders or Conservation Area designations identified which could affect trees within or immediately adjacent to the Site.

The Hedgerows Regulations (1997) protect agricultural or countryside hedgerows which meet the requirements of an 'important hedgerow'. These include a minimum length of 20m (or meets another hedge at each end) and a minimum age of at least 30 years. A wide range of other ecological and archaeological/heritage features can constitute an important hedgerow and further advice from a qualified ecologist is recommended in advance of

<sup>3</sup> <http://www.landis.org.uk/soilscape/#>

<sup>4</sup> [https://open-data-mcr-council.hub.arcgis.com/datasets/234d49a3783b47e49d7016747654e988\\_1/explore?filters=eyJBUkVBljpbMCw2NiUzNy41Nzh dLCJUUkVfVFIQRSl6WjYBTLiLCglwiU1IDQU1SlwiSE9MTFkiLCJCRUVDSCJdLCJTaGFwZV9fQXJlYSI6WzquOTI3Nzk1N DEwMTU2MjUsNzg4MzkuMjAxMzU0OTgwNV0sIlNoYXBIX19MZW5ndGgiOlsxMC42MDkwMzEzNjI0OTEsMjg1NS45MTM0Nj A1OTM3OV19&location=53.360317%2C-2.286483%2C15.98](https://open-data-mcr-council.hub.arcgis.com/datasets/234d49a3783b47e49d7016747654e988_1/explore?filters=eyJBUkVBljpbMCw2NiUzNy41Nzh dLCJUUkVfVFIQRSl6WjYBTLiLCglwiU1IDQU1SlwiSE9MTFkiLCJCRUVDSCJdLCJTaGFwZV9fQXJlYSI6WzquOTI3Nzk1N DEwMTU2MjUsNzg4MzkuMjAxMzU0OTgwNV0sIlNoYXBIX19MZW5ndGgiOlsxMC42MDkwMzEzNjI0OTEsMjg1NS45MTM0Nj A1OTM3OV19&location=53.360317%2C-2.286483%2C15.98)

any planned works which could impact established hedgerows on or bordering agricultural or countryside land. Prior to the removal or destruction of a protected hedgerow an application must be made to the Local Planning Authority. Full planning consent is an exemption to this requirement. No significant hedgerows likely to meet this standard were identified during the tree survey.

A felling licence may be required by the Forestry Commission to fell more than 5m<sup>3</sup> in any calendar quarter (subject to relevant exceptions including trees in gardens, designated public open spaces or churchyards). If more than 1ha of woodland is to be removed (on 'non-sensitive' sites) a Forestry Environmental Impact Assessment may be required and where this is potentially required a screening request should be sent to the Forestry Commission.

Full planning consent is an exemption from the need to apply for consent for works to trees protected by a Tree Preservation Order, the need to give notice of the intention to undertake works within a Conservation Area and the need to apply for a Felling Licence with the Forestry Commission (to fell more than 5m<sup>3</sup> per calendar quarter). Prior to any tree works the status of trees to be removed or pruned must be verified with the LPA and the Forestry Commission as appropriate.

### 3.3.2 Non-Statutory Designations

**BAP Habitat:** Following a review of Magic Map<sup>5</sup> the Site includes a deciduous woodland which is a Biodiversity Action Plan (BAP) Priority Habitats, this is a non-statutory designation which has the potential to be a material consideration in the planning process.

The area has also been identified as within a community forest<sup>6</sup> where over the next five years, the Community Forest Trust is seeking to plant over 6000 hectares of new woodland and establish new community forests.

The Woodland Trust Ancient Tree Inventory<sup>7</sup> was checked and none of the trees within the Site have been recorded within the inventory as of ancient or veteran status.

---

<sup>5</sup> <https://magic.defra.gov.uk/MagicMap.aspx>

<sup>6</sup> <https://englandscommunityforests.org.uk/>

<sup>7</sup> <https://ati.woodlandtrust.org.uk/tree-search/?v=1900306&ml=map&z=15&nwLat=53.134499863862246&nwLng=-1.255180963215261&seLat=53.12474080516937&seLng=-1.2009788834423119>

## 4. Tree Related Constraints and Opportunities

The Tree Constraints Plan (Appendix A) shows the area of constraints associated with the trees on the Site. As identified within the drawing key, the green shaded area shows the extent of tree canopies, the canopy outline colour indicates the quality category of the tree and the dashed black line is indicative of the RPA, which is the nominal area of tree roots which are generally considered essential to tree health and function. Roots are likely to extend outside of this point but beyond the RPA extent tree roots are not considered a significant constraint.

The default position is generally that all new features and associated works be located outside of areas where trees are to be retained.

### 4.1 Tree Categorisations as per BS5837:2012

The trees on the Site have been assigned to a quality category as per BS5837:2012, which relates to their arboricultural, landscape and cultural/conservation value.

Category C trees are shown by a grey canopy outline on the Tree Constraints Plan (Appendix A). This means they are of relatively low quality and would not normally be considered a significant constraint to future development. However, these trees may still provide some useful value and should be considered for retention where they do not pose a significant constraint to a proposed development.

Category B trees (blue canopy outline) are described as being of moderate quality and it is generally desirable to retain trees of this standard and incorporate them within a proposed development wherever feasible.

Category A trees (green canopy outline) are classified as being of high quality and trees of this nature should be retained and incorporated into the design of a proposed development due to the high level of benefits they provide.

Category U trees (red canopy outline) are trees with less than ten years of reasonable useful life expectancy or those in such poor condition that they should be removed, regardless of any development activity. Trees of this nature represent no constraint to development.

The table below summarises the number of trees in each category recorded within or adjacent to the Site.

**Table 2: Summary of trees in each quality category.**

| Quality Category | A | B  | C  | U |
|------------------|---|----|----|---|
| Number of trees  | 0 | 21 | 16 | 3 |

### 4.2 Considerations

In planning terms lower quality trees can often be straightforwardly removed to facilitate development where their loss can be mitigated with replacement tree planting or where no replacement planting is necessary. This is likely to apply to Category C and Category U trees and hedgerows where there are no other constraints in place (e.g. ecological or heritage).

The default position must be that higher quality trees (Category B) are retained and protected, however in some cases it may also be feasible to remove trees of this quality where there is no reasonable alternative and where the benefit of the development outweighs the impact of the loss of the tree/s. Should this be required pre application discussions with the LPA are recommended to manage the risk of refused consent.

If any of the trees are owned by third parties, prior consent must be in place before any tree works are carried out and it is recommended that this is secured prior to the submission of any planning application.

While it is often feasible to install new hard surfacing on existing soft ground within a tree RPA this generally requires the use of raised surfaces supported by carefully located piles or the use of proprietary load bearing surfaces (such as CellWeb, ArborRaft or equivalent) installed on top of the existing unsurfaced ground level using 'no dig' techniques. New areas of hard surfacing or building footprints should not generally occupy more than 20% of the RPA of a retained tree, as set out in Section 7.4.2.3 of BS5837.

New services or the diversion or removal of existing services must be carefully considered. In general, all new services should be routed outside of the RPA of retained trees. Where this is unavoidable alternative

methodologies such as the use of directional drilling or equivalent trenchless techniques can facilitate service installation beneath tree root systems (likely to be at least 1m+ dependent on ground conditions and tree species affected).

Shallow service runs may be installed using hand excavation where all significant tree roots can be retained and services be threaded beneath. Existing services can be winched out from a manhole/chamber located outside of an RPA and redundant pipework can be decommissioned using pipe bursting techniques to avoid excavation which could damage roots.

These operations typically require a detailed arboricultural method statement to set out in detail how they can be successfully achieved.

### 4.3 The Future Impact of Trees

The future impact of trees on the Site must be considered in relation to any development proposals. Trees and groups to be retained must be afforded suitable space to ensure they remain viable in the long term. Trees which are currently not fully grown will increase in size and this must be considered in conjunction with a proposed development and future use of the Site.

The Tree Constraints Plan shows the notional area of shade produced by the trees on the Site (based on their current height) and this should inform a proposed development layout. Due consideration must also be given to the likely future growth of the tree (which for younger trees is likely to involve a significant increase in the level of shade produced) and the advice of an arboriculturist should be obtained to inform this assessment. Shade is less likely to be a significant issue for non-residential development, however, key areas where shade could have a negative impact should be positioned to avoid the area of shade associated with retained trees. This is likely to be most significant for the trees to the south and west of the Site.

Sycamore such as trees within G13 and W26 are often associated with aphids which secrete a sticky liquid called 'honeydew'. This can be a nuisance for parked cars and potentially areas of hard surfacing and structures as the deposits can lead to the development of sooty moulds and staining. This can be easily cleaned with warm soapy water or equivalent and is likely to be less visible on darker surfaces. This potential future maintenance requirement should be considered in relation to the future use of the Site beneath the canopy of these trees where they are to be retained.

Deciduous trees (which includes all the trees surveyed with the exception of G11, G37 and T38) will drop leaves each autumn and this is likely to result in a maintenance requirement to manage leaves on hard surfaced footways and to clear gutters where tree canopies extend over or immediately adjacent to roofs. Leaf fall can be easily cleared as required from hard surfacing. Non-slip surfacing can reduce the frequency that this is required. Measures such as Gutter Guards or equivalent can be used to reduce the potential for leaves to block guttering and these should be employed where trees overhang or grow in close proximity to structures.

Evergreen trees (which includes G11, G37 and T38) will deposit leaves/needles, seeds and other detritus throughout the year.

### 4.4 Loss of Companion Shelter

Where groups of trees or woodland has established the trees within the feature will have developed to rely on the support of neighbouring trees to shelter them from winds. Where part of a group of trees is to be removed this can leave retained trees vulnerable to failure or windthrow. Where possible the outer edges of tree groups should be retained to reduce this issue (particularly on sides facing the prevailing wind). Where part of a tree group is to be removed the remaining trees must be assessed by an arboriculturist following the site clearance works to assess the suitability and stability of retained trees. Additional tree pruning or removals may be required where trees are subject to unacceptable increased exposure or are of a form or condition that are unsuitable for retention in the context of the proposed land use.

### 4.5 Tree Protection

Trees to be retained in proximity to areas of development activity, including areas for new surfacing, services, work site compounds and storage will need to be protected to ensure they are not damaged. This is generally achieved with the use of robust, immovable temporary tree protection fencing, to prevent access within the RPA or canopy spread of trees. Where access is unavoidable, alternative protection arrangements such as ground protection (sufficient to protect the structure of the soil from compaction), and/or access facilitation pruning (to

ensure a reasonable clearance for operations is provided) may be required. The advice of an arboriculturist should be sought to inform this assessment.

## 4.6 Tree Planting

Where trees are to be removed due to a conflict with the proposed design, mitigation planting is likely to be required to ensure a continuity of tree cover for the Site and to address any negative impact on local amenity and landscape character. Consideration should be given to the reasonable provision of space for new tree planting to off-set any necessary tree loss.

Soil structure in areas for new planting will need to be maintained and may require protection during operation of a proposed development to ensure reasonable conditions for future tree growth are available.

New planting should consider the existing species mix present on site in relation to both arboricultural and ecological considerations. New planting also offers an opportunity to increase the species and age class diversity for a given area which can boost the resilience of the local tree stock in relation to pests, disease and climate change as well as providing a greater range of amenity and other benefits.

New trees should be planted in accordance with the guidance set out in BS8545:2014 Trees: from nursery to independence in the landscape - Recommendations (BS8545) and with the minimum distances from new structures, services and surfacing set out in Table A.1 of BS5837. AECOMs arboriculturists can provide further advice in relation to this issue if required.

## 5. Summary and Conclusion

The survey area contains 40 tree features which are generally in fair to good condition and contribute to the character of the site/local amenity.

The trees on Site form a significant spatial constraint to any potential development works.

Where it is not possible to completely avoid the area of constraint associated with significant trees it may be possible to utilise special measures to facilitate the works.

A key consideration for any development activity will be the protection of the surrounding trees including the structure of the soil in which they grow, including from indirect damage via the storage or discharge of materials and the movement and use of plant and machinery. The default position is that all RPA and canopies of retained trees be fenced off as exclusion zones with no access. Where this is not feasible limited access may be acceptable using fit for purpose ground protection or other protective measures in accordance with BS5837.

Outside of the canopy and RPA, development works are not likely to be significantly constrained by trees, however it is important not to significantly impact on ground water levels in proximity to trees and where this could be a potential impact specific arboricultural advice must be obtained.

Lower quality trees (Category C and U) are not likely to be significant constraint to development where they can be satisfactorily replaced with new tree planting (or where their loss will not have a significant impact - e.g. due to the retention of adjacent trees) and therefore some sections of lower quality tree cover may be feasible to remove from a planning perspective.

All moderate value trees should be afforded full protection where possible. If the potential removal of higher value trees (Category B) is unavoidable, this should be discussed in advance with local planning authority (Manchester City Council), however, the default position must be that trees of this quality are to be retained and protected where possible.

As the design progresses, it is recommended that the advice of an arboriculturist is sought to inform this process, particularly in relation to new features in proximity to trees.

Draft layouts should be overlaid onto the Tree Constraints Plan to allow an assessment of the impact of a proposed development, including the identification of any trees which are to be removed.

An Arboricultural Impact Assessment is typically required to support a planning application, which allows the identification and assessment of the direct and indirect effects of a proposed development along with appropriate mitigation measures where necessary.

## 6. References

British Standards Institution (BSI), BS5837:2012. Trees in relation to design, demolition and construction – Recommendations. BSI

British Standards Institution (BSI), BS3998:2010. Tree work – Recommendations. BSI

British Standards Institution (BSI) BS8545: 2014 Trees: from the nursery to independence in the landscape - Recommendations

National House Building Council (NHBC) Standards, (2021). Chapter 4.2: Building Near Trees

National Joint Utilities Group (NJUG) Volume 4, Issue 2, (2007). NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.

National Tree Safety Group (NTSG), 2011. Common sense risk management of trees. Forestry Commission.

Ministry of Housing, Communities and Local Government (MHCLG), 2021. National Planning Policy Framework (NPPF). MHCLG

Manchester City Council (2012) Manchester's Local Development Framework Core Strategy Development Plan

## Appendix A Tree Constraints Plan



PROJECT

MAG Building 401

CLIENT

MAG Property

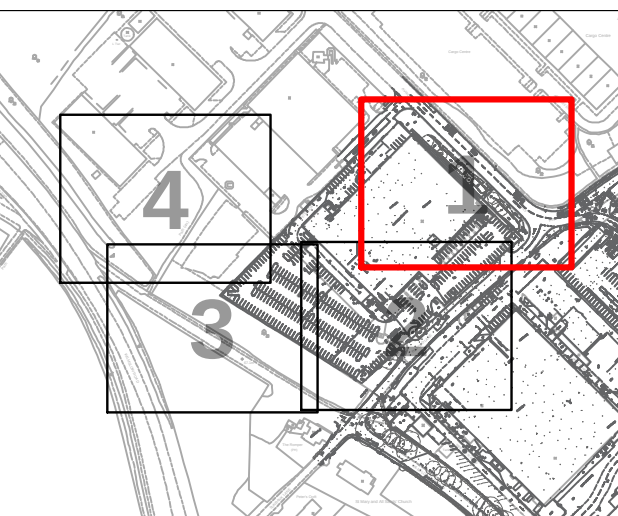
CONSULTANT

AECOM  
Plumer House, Third Floor,  
East Wing, Tallyour Road  
Plymouth, PL6 5DH  
Tel +44(0)1752 676700  
Fax +44(0)870 238 6023  
[www.aecom.com](http://www.aecom.com)

GENERAL NOTES

1. TREE CATEGORIES AS DEFINED BY BS 5837:2012
2. TREE LOCATIONS ARE BASED ON THE TOPOGRAPHICAL SURVEY, AERIAL IMAGERY, AND GPS CO-ORDINATES FROM ON SITE WALKOVER.
3. \* INDICATES A TREE / GROUP WHOSE POSITION IS APPROXIMATE AS BASED UPON AERIAL PHOTOGRAPHY AND ON SITE OBSERVATIONS.
4. PLANS SHOULD BE READ IN CONJUNCTION WITH THE AECOM ARBORCULTURAL REPORT.
5. THE ORIGINAL OF THIS DRAWING WAS PRODUCED IN COLOUR - A MONOCHROME COPY SHOULD NOT BE RELIED UPON.
6. DRAWING REFERENCES:  
XREF: TOPO-EDIT.dwg  
020598-RPS-SI-XX-DR-A-9015.dwg  
Xref (N0018329) OS\_MasterMap\_499377\_663323\_OS\_Mastermap.dwg  
X002 OS-EDIT.dwg

KEY PLAN



KEY

- A CATEGORY TREE, GROUP, HEDGE, OR WOODLAND  
(HIGH QUALITY & VALUE)
- B CATEGORY TREE, GROUP, HEDGE, OR WOODLAND  
(MODERATE QUALITY & VALUE)
- C CATEGORY TREE, GROUP, HEDGE, OR WOODLAND  
(LOW QUALITY & VALUE)
- U CATEGORY TREE, GROUP, HEDGE, OR WOODLAND  
(UNSUITABLE FOR RETENTION)
- ROOT PROTECTION AREAS (RPA)  
(AS DEFINED BY BS 5837:2012)
- APPROXIMATE SHADING ARC  
(AS DEFINED BY BS 5837:2012)

ISSUE/REVISION

| NO  | DATE     | DESCRIPTION |
|-----|----------|-------------|
| P01 | 05.08.21 | FIRST ISSUE |
| VR  | DATE     | DESCRIPTION |

DRAWING STATUS

ISSUE

PROJECT NUMBER

60625935

SHEET TITLE

TREE CONSTRAINTS PLAN  
(SHEET 01)

SHEET NUMBER

60625935-ACM-XX-XX-AB-TCP-001

REV.

P01

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility and denies any liability whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.



**AECOM**

PROJECT

MAG Building 401

CLIENT

MAG Property

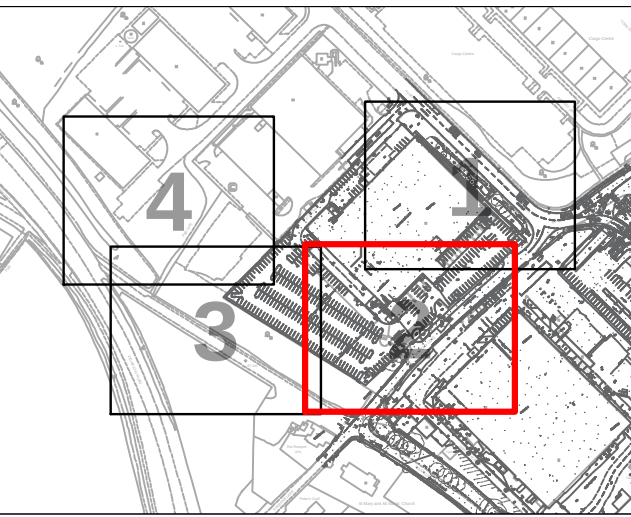
CONSULTANT

AECOM  
Plumer House, Third Floor,  
East Wing, Tallyour Road  
Plymouth, PL6 5DH  
Tel +44(0)1752 676700  
Fax +44(0)870 238 6023  
[www.aecom.com](http://www.aecom.com)

GENERAL NOTES

1. TREE CATEGORIES AS DEFINED BY BS 5837:2012
2. TREE LOCATIONS ARE BASED ON THE TOPOGRAPHICAL SURVEY, AERIAL IMAGERY, AND GPS CO-ORDINATES FROM ON SITE WALKOVER.
3. \* INDICATES A TREE / GROUP WHOSE POSITION IS APPROXIMATE AS BASED UPON AERIAL PHOTOGRAPHY AND ON SITE OBSERVATIONS.
4. PLANS SHOULD BE READ IN CONJUNCTION WITH THE AECOM ARBORCULTURAL REPORT.
5. THE ORIGINAL OF THIS DRAWING WAS PRODUCED IN COLOUR - A MONOCHROME COPY SHOULD NOT BE RELIED UPON.
6. DRAWING REFERENCES:  
XREF: TOPO-EDIT.dwg  
020598-RPS-SI-XX-DR-A-9015.dwg  
Xref (N0018329) OS\_MasterMap\_499377\_663323\_OS\_MasterMap.dwg  
X002 OS-EDIT.dwg

KEY PLAN



KEY

- A CATEGORY TREE, GROUP, HEDGE, OR WOODLAND  
(HIGH QUALITY & VALUE)
- B CATEGORY TREE, GROUP, HEDGE, OR WOODLAND  
(MODERATE QUALITY & VALUE)
- C CATEGORY TREE, GROUP, HEDGE, OR WOODLAND  
(LOW QUALITY & VALUE)
- U CATEGORY TREE, GROUP, HEDGE, OR WOODLAND  
(UNSUITABLE FOR RETENTION)
- ROOT PROTECTION AREAS (RPA)  
(AS DEFINED BY BS 5837:2012)
- APPROXIMATE SHADING ARC  
(AS DEFINED BY BS 5837:2012)

ISSUE/REVISION

| NO  | DATE     | DESCRIPTION |
|-----|----------|-------------|
| P01 | 05.08.21 | FIRST ISSUE |
| VR  | DATE     | DESCRIPTION |

DRAWING STATUS

ISSUE

PROJECT NUMBER

60625935

SHEET TITLE

TREE CONSTRAINTS PLAN  
(SHEET 02)

SHEET NUMBER

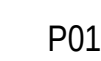
60625935-ACM-XX-XX-AB-TCP-002

REV.

P01

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.





Appendix B Tree Survey Schedule

| Ref. No | Species Common Name<br>(Scientific name)   | Estimated Height (m) | Stem Diameter (mm) | Canopy Spread (m) |     |     |     | First Significant Branch & direction (m) | Canopy Clearance height (m) | Physiological Condition | Life Stage | Structural Condition | Observations                                                                                                                                                                               | Preliminary Management Recommendations                                  | Work Required to Facilitate the Proposed Development | Estimated Remaining Contribution (yrs) | Category | RPA (m²) | RPA Radius (m) |
|---------|--------------------------------------------|----------------------|--------------------|-------------------|-----|-----|-----|------------------------------------------|-----------------------------|-------------------------|------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------|----------|----------|----------------|
|         |                                            |                      |                    | N                 | S   | E   | W   |                                          |                             |                         |            |                      |                                                                                                                                                                                            |                                                                         |                                                      |                                        |          |          |                |
| T1      | Common Alder<br>( <i>Alnus glutinosa</i> ) | 8                    | 250#               | 4.5               | 4   | 4   | 5   | 5.0/SE                                   | 5                           | Good                    | SM         | Good                 | No access to base due to shrub group. Eastern branches nearing the building.                                                                                                               | Prune back from building by 2m to provide clearance (when funds allow). |                                                      | 20+                                    | B2       | 3.0      | 0.98           |
| T2      | Rowan ( <i>Sorbus aucuparia</i> )          | 6                    | 180#               | 1                 | 1   | 2.5 | 1.5 | 2.0/S                                    | 2.5                         | Good                    | EM         | Good                 | No access to base due to shrub group. Eastern side of tree's crown suppressed by T3.                                                                                                       |                                                                         |                                                      | 20+                                    | B2       | 2.2      | 0.84           |
| T3      | Common Alder<br>( <i>Alnus glutinosa</i> ) | 8                    | 250#               | 4                 | 1   | 4   | 4   | 6.0/W                                    | 2                           | Good                    | SM         | Good                 | No access to base due to shrub group. Slight eastern stem lean, pruning wounds on lower stem occluded.                                                                                     |                                                                         |                                                      | 20+                                    | B2       | 3.0      | 0.98           |
| T4      | Common Alder<br>( <i>Alnus glutinosa</i> ) | 9                    | 300#               | 4                 | 3.5 | 4   | 5   | 6.0/NE                                   | 2                           | Good                    | M          | Good                 | No access to base due to shrub group. Pruning wounds to stem mostly occluded other than one on the eastern side which presents minor decay. Branches beginning to obscure road speed sign. | Prune branches on west side to clear signage. <3 months                 |                                                      | 20+                                    | B2       | 3.6      | 1.07           |
| T5      | Rowan ( <i>Sorbus aucuparia</i> )          | 5                    | 240                | 3                 | 2   | 2   | 2   | 3.0/S                                    | 2                           | Good                    | SM         | Good                 | Minor mower damage to base, minor deadwood in the crown.                                                                                                                                   |                                                                         |                                                      | 20+                                    | B2       | 2.9      | 0.96           |

| Ref. No | Species<br>Common Name<br>(Scientific name)               | Estimated Height (m) | Stem Diameter<br>(mm)  | Canopy Spread (m) |     |     |   | First Significant<br>Branch & direction<br>(m) | Canopy Clearance<br>height (m) | Physiological<br>Condition | Life Stage | Structural Condition | Observations                                                                                                                                                                        | Preliminary<br>Management<br>Recommendations                   | Work Required to<br>Facilitate the<br>Proposed<br>Development | Estimated Remaining<br>Contribution (yrs) | Category | RPA<br>(m²) | RPA<br>Radius<br>(m) |
|---------|-----------------------------------------------------------|----------------------|------------------------|-------------------|-----|-----|---|------------------------------------------------|--------------------------------|----------------------------|------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------|----------|-------------|----------------------|
|         |                                                           |                      |                        | N                 | S   | E   | W |                                                |                                |                            |            |                      |                                                                                                                                                                                     |                                                                |                                                               |                                           |          |             |                      |
| T6      | Rowan ( <i>Sorbus aucuparia</i> )                         | 5                    | 240                    | 3                 | 3   | 0.5 | 3 | 3.0/W                                          | 2                              | Poor                       | SM         | Poor                 | Failure to come into full leaf with very small and sporadic foliage. Likely dead buds throughout. Decay throughout the main stem, major wounds from base upwards into the crown.    | Fell to ground level and replant. <3 months                    |                                                               | <10                                       | U1       | 2.9         | 0.96                 |
| T7      | Rowan ( <i>Sorbus aucuparia</i> )                         | 8                    | 420#                   | 4                 | 3.5 | 3   | 3 | 1.5/W                                          | 1                              | Fair                       | M          | Good - Fair          | Large sections of dead wood present in lower crown due to age. Previous pruning wounds with no reaction growth. No access to base due to dense conifer group beneath.               | Remove dead wood. <3 months                                    |                                                               | 10+                                       | C1       | 5.0         | 1.26                 |
| H8      | Rockspray cotoneaster ( <i>Cotoneaster horizontalis</i> ) | 1.5                  | 100#                   | 1                 | 1   | 1   | 1 | n/a                                            | n/a                            | Good                       | SM         | Good                 | A maintained shrub group.                                                                                                                                                           | Continue routine maintenance. When funds allow.                |                                                               | 10+                                       | C2       | 1.2         | 0.62                 |
| T9      | Common Alder ( <i>Alnus glutinosa</i> )                   | 11                   | 300, 250#              | 3.5               | 4   | 3   | 3 | 2.0/W                                          | 3                              | Good                       | M          | Fair                 | No access to base. Codominant specimen with a V-shaped branch union, minor dead wood in lower crown.                                                                                |                                                                |                                                               | 20+                                       | B2       | 4.7         | 1.22                 |
| T10     | Common Alder ( <i>Alnus glutinosa</i> )                   | 7                    | 200,150, 150,150, 150# | 5                 | 4   | 1   | 3 | 3.0/N                                          | 2                              | Fair                       | EM         | Fair                 | A multi-stemmed specimen with 5 stems from the base, dieback and dead wood present in upper crown. Low hanging branches on the southern side over parking space. No access to base. | Remove dead wood. Prune branches over parking space. <3 months |                                                               | 10+                                       | C2       | 4.3         | 1.17                 |

| Ref. No | Species<br>Common Name<br>( <i>Scientific name</i> )                                             | Estimated Height (m) | Stem Diameter<br>(mm) | Canopy Spread (m) |   |   |   | First Significant<br>Branch & direction<br>(m) | Canopy Clearance<br>height (m) | Physiological<br>Condition | Life Stage | Structural Condition | Observations                                                                                                                      | Preliminary<br>Management<br>Recommendations            | Work Required to<br>Facilitate the<br>Proposed<br>Development | Estimated Remaining<br>Contribution (yrs) | Category | RPA<br>(m²) | RPA<br>Radius<br>(m) |
|---------|--------------------------------------------------------------------------------------------------|----------------------|-----------------------|-------------------|---|---|---|------------------------------------------------|--------------------------------|----------------------------|------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------|----------|-------------|----------------------|
|         |                                                                                                  |                      |                       | N                 | S | E | W |                                                |                                |                            |            |                      |                                                                                                                                   |                                                         |                                                               |                                           |          |             |                      |
| G11     | Leylandii<br>( <i>Cupressocyparis x leylandii</i> )                                              | 1.5                  | 100#                  | 2                 | 2 | 2 | 2 | n/a                                            | n/a                            | Good                       | SM         | Good                 | A maintained low spreading group.                                                                                                 | Continue routine maintenance. When funds allow.         |                                                               | 10+                                       | C2       | 1.2         | 0.62                 |
| G12     | Wild Cherry<br>( <i>Prunus avium</i> ),<br>Dogwood ( <i>Cornus sanguinea</i><br><i>Dogwood</i> ) | 4                    | 100#                  | 3                 | 3 | 3 | 3 | n/a                                            | n/a                            | Good                       | SM         | Good                 | A close group of shrub trees within fence line.                                                                                   |                                                         |                                                               | 10+                                       | C2       | 1.2         | 0.62                 |
| G13     | Elder ( <i>Sambucus nigra</i> ), Sycamore<br>( <i>Acer pseudoplatanus</i> )                      | 3                    | 150#                  | 2                 | 2 | 2 | 2 | n/a                                            | n/a                            | Good                       | SM         | Good                 | A small shrub group with a young sycamore growing in the centre of the group.                                                     |                                                         |                                                               | 10+                                       | C2       | 1.8         | 0.76                 |
| T14     | Common Oak<br>( <i>Quercus robur</i> )                                                           | 8                    | 640                   | 5                 | 6 | 5 | 6 | 2.0/N                                          | 2                              | Fair                       | M          | Good                 | Lots of dead wood in crown, occluded old pruning wounds on lower stem.                                                            | Remove dead wood. <3 months                             |                                                               | 20+                                       | B2       | 7.7         | 1.57                 |
| T15     | Common Oak<br>( <i>Quercus robur</i> )                                                           | 10                   | 550#                  | 6                 | 4 | 3 | 6 | 3.0/N                                          | 4                              | Good                       | M          | Good                 | Minor dead wood and broken branches in crown. Crossing branches throughout crown. No access to base due to scrub group and fence. | Remove dead wood and hung up broken branches. <3 months |                                                               | 20+                                       | B2       | 6.6         | 1.45                 |
| T16     | Cherry ( <i>Prunus sp.</i> )                                                                     | 6                    | 145                   | 1                 | 1 | 1 | 1 | 3.0/N                                          | 2                              | Poor                       | Y          | Fair                 | Standing dead tree. Suppressed specimen due to adjacent trees.                                                                    | Fell to ground level. <3 months                         |                                                               | <10                                       | U1       | 1.7         | 0.74                 |

| Ref. No | Species Common Name<br>(Scientific name) | Estimated Height (m) | Stem Diameter (mm) | Canopy Spread (m) |   |   |     | First Significant Branch & direction (m) | Canopy Clearance height (m) | Physiological Condition | Life Stage | Structural Condition | Observations                                                                                                                                                                                                                                                                                                          | Preliminary Management Recommendations                     | Work Required to Facilitate the Proposed Development | Estimated Remaining Contribution (yrs) | Category | RPA (m²) | RPA Radius (m) |
|---------|------------------------------------------|----------------------|--------------------|-------------------|---|---|-----|------------------------------------------|-----------------------------|-------------------------|------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------|----------------------------------------|----------|----------|----------------|
|         |                                          |                      |                    | N                 | S | E | W   |                                          |                             |                         |            |                      |                                                                                                                                                                                                                                                                                                                       |                                                            |                                                      |                                        |          |          |                |
| T17     | Ash ( <i>Fraxinus excelsior</i> )        | 16                   | 500, 450#          | 6                 | 6 | 6 | 6.5 | 6.0/SW                                   | 4                           | Good                    | M          | Fair                 | A large multi-stemmed specimen swamped in ivy growth from the base. Minor dieback of lower branches to north. Ivy obscuring view of stem. Minor dead wood.                                                                                                                                                            | Sever ivy at base and remove dead wood. <3 months          |                                                      | 20+                                    | B1,2     | 8.5      | 226            |
| T18     | Common Oak ( <i>Quercus robur</i> )      | 13                   | 600                | 6                 | 4 | 6 | 7   | 5.0/E                                    | 6                           | Poor                    | M          | Fair - Poor          | Low vitality with sparse foliage and significant sections of deadwood throughout its crown. Potentially in terminal decline. Lower stem swamped in ivy from the base. Overhead wires running through tree's crown. Sounding hammer test didn't suggest any extensive decay but ivy preventing full visual assessment. | Sever ivy, remove dead wood over hard surfacing < 3 months |                                                      | 10+                                    | C1       | 7.2      | 1.51           |
| T19     | Ash ( <i>Fraxinus excelsior</i> )        | 13                   | 500                | 5                 | 6 | 6 | 5   | 5.0/E                                    | 5                           | Good                    | M          | Good                 | A large ash at the edge of woodland group. Stem swamped in ivy growth. Minor dead wood within crown.                                                                                                                                                                                                                  | Sever ivy at base and remove dead wood. < 3 months         |                                                      | 20+                                    | B1, 2    | 6.0      | 1.38           |
| T20     | Ash ( <i>Fraxinus excelsior</i> )        | 12                   | 550                | 8                 | 1 | 4 | 4   | 4.0/N                                    |                             | Good                    | M          | Fair                 | A large ash at the edge of woodland group. Northern stem lean. Crown suppressed by adjacent trees to south. Minor dead wood.                                                                                                                                                                                          | Sever ivy at base. (When funds allow)                      |                                                      | 10+                                    | B1       | 6.6      | 1.45           |
| T21     | Ash ( <i>Fraxinus excelsior</i> )        | 13                   | 500,450            | 4                 | 4 | 5 | 3   | 4.0/E                                    | 2                           | Good                    | M          | Good                 | A large codominant ash at the edge of woodland group. U-shaped union. Minor ivy on stem. More significant ivy has previously been severed at 1m. Deadwood in upper crown.                                                                                                                                             | Sever ivy at base and remove dead wood. <3 months          |                                                      | 20+                                    | B1, 2    | 8.1      | 1.61           |

| Ref. No | Species Common Name<br>(Scientific name) | Estimated Height (m) | Stem Diameter (mm) | Canopy Spread (m) |   |     |   | First Significant Branch & direction (m) | Canopy Clearance height (m) | Physiological Condition | Life Stage | Structural Condition | Observations                                                                                                                                                                     | Preliminary Management Recommendations                                                             | Work Required to Facilitate the Proposed Development | Estimated Remaining Contribution (yrs) | Category | RPA (m²) | RPA Radius (m) |
|---------|------------------------------------------|----------------------|--------------------|-------------------|---|-----|---|------------------------------------------|-----------------------------|-------------------------|------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------|----------|----------|----------------|
|         |                                          |                      |                    | N                 | S | E   | W |                                          |                             |                         |            |                      |                                                                                                                                                                                  |                                                                                                    |                                                      |                                        |          |          |                |
| T22     | Ash ( <i>Fraxinus excelsior</i> )        | 14                   | 300,280, 280,250   | 4                 | 5 | 5   | 4 | 6.0/E                                    | 3                           | Fair                    | M          | Fair                 | Multi-stemmed. Ivy growth covering stem. Lots of dead wood in crown with some large sections of dead branches. Low hanging branch over road.                                     | Sever ivy at base and remove dead wood. Crown lift to provide 5m clearance over highway. <3 months |                                                      | 10+                                    | B1       | 6.7      | 1.46           |
| T23     | Common Oak ( <i>Quercus robur</i> )      | 10                   | 450                | 6                 | 3 | 7   | 6 | 5.0/E                                    | 4                           | Good                    | EM         | Good                 | Lower branches pruned back from road as stubs now dead and decaying. Minor dead wood in crown.                                                                                   | Remove dead wood. <3 months                                                                        |                                                      | 20+                                    | B1       | 5.4      | 1.31           |
| T24     | Common Oak ( <i>Quercus robur</i> )      | 11                   | 600                | 7                 | 7 | 7   | 6 | 1.0/E                                    | 1                           | Good                    | M          | Good                 | Large sections of dead wood in crown. Some snapped out branches on the ground. Ivy covering main stem. Lower branches encroaching the roadway.                                   | Remove dead wood. to provide a 5m clearance over highway. <3 months                                |                                                      | 20+                                    | B1, 2    | 7.2      | 1.51           |
| T25     | Common Oak ( <i>Quercus robur</i> )      | 12                   | 580,550            | 6                 | 6 | 7.5 | 5 | 6.0/E                                    | 3                           | Good                    | M          | Good                 | A codominant oak with a strong U-shaped union. Swamped in ivy growth. Large sections of dead wood. One sided crown due to woodland on west side. Low hanging branches over road. | Remove dead wood. Sever ivy at base. Crown lift to 5m to provide clearance over highway. <3 months |                                                      | 20+                                    | B2       | 9.6      | 1.75           |

| Ref. No | Species<br>Common Name<br>( <i>Scientific name</i> )                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Estimated Height (m) | Stem Diameter<br>(mm)  | Canopy Spread (m) |   |   |   | First Significant<br>Branch & direction<br>(m) | Canopy Clearance<br>height (m) | Physiological<br>Condition | Life Stage | Structural Condition | Observations                                                                                                                                                                                                                                                                                                                                                                          | Preliminary<br>Management<br>Recommendations                                                                                                                               | Work Required to<br>Facilitate the<br>Proposed<br>Development | Estimated Remaining<br>Contribution (yrs) | Category | RPA<br>(m²) | RPA<br>Radius<br>(m) |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------------|-------------------|---|---|---|------------------------------------------------|--------------------------------|----------------------------|------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------|----------|-------------|----------------------|
|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                        | N                 | S | E | W |                                                |                                |                            |            |                      |                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                            |                                                               |                                           |          |             |                      |
| W26     | Wych Elm ( <i>Ulmus glabra</i> ), Ash ( <i>Fraxinus excelsior</i> ), Hawthorn ( <i>Crataegus monogyna</i> ), Elder ( <i>Sambucus nigra</i> ), Common plum ( <i>Prunus domestica</i> ), English oak ( <i>Quercus robur</i> ), aspen ( <i>Populus tremula</i> ), Willow ( <i>Salix sp.</i> ), silver birch ( <i>Betula pendula</i> ), sycamore ( <i>Acer pseudoplatanus</i> ), Common yew ( <i>Taxus baccata</i> ), holly ( <i>Ilex aquifolium</i> ), horse chestnut ( <i>Aesculus hippocastanum</i> ). | 16                   | Up to 440, (200 Avg) # | 3                 | 3 | 3 | 3 | n/a                                            | n/a                            | Good - Dead                | Y-EM       | Good - Poor          | Ash trees showing signs of die back, some standing dead trees within group with fungal fruiting bodies present. Ivy growth throughout understory. Diverse mix of species. Thick woodland providing limited access. Screening value. - Rubbish tipped throughout woodland. Mix of age classes. Mostly upright in form competing for light. Woodland edges providing companion shelter. | Remove standing dead trees within falling distance of car parking/hard surfacing (< 3 months).<br><br>Group would benefit from woodland thinning works. (When funds allow) |                                                               | 20+                                       | B2       | 5.3         | 1.30                 |
| G27     | Hawthorn ( <i>Crataegus monogyna</i> ), Rusty sallow ( <i>Salix cinerea</i> )                                                                                                                                                                                                                                                                                                                                                                                                                         | 4                    | <150#                  | 1                 | 1 | 1 | 1 | n/a                                            | 0.5                            | Good                       | SM         | Good                 | A formally planted shrub group located next to the property boundary fence. Provides screen value for adjacent car park.                                                                                                                                                                                                                                                              | n/a                                                                                                                                                                        |                                                               | 10+                                       | C2       |             |                      |
| T28     | Common alder ( <i>Alnus glutinosa</i> )                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 6                    | 80, 80                 | 2                 | 1 | 2 | 1 | 2.0/E                                          | 2                              | Good                       | SM         | Good                 | A codominant tree located next to the property boundary fence. South western crown slightly suppressed by adjacent tree. Previous pruning evident on lower stem to provide clearance for parking.                                                                                                                                                                                     | n/a                                                                                                                                                                        |                                                               | 10+                                       | C2       |             |                      |
| T29     | Common alder ( <i>Alnus glutinosa</i> )                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 6                    | 120                    | 2                 | 2 | 2 | 2 | 3.0/N                                          | 2                              | Good                       | SM         | Good                 | Located next to the property boundary fence. Alder leaf beetles and larvae abundant on the tree's leaves. Previous pruning evident on lower branches to provide clearance for parking.                                                                                                                                                                                                | n/a                                                                                                                                                                        |                                                               | 10+                                       | C2       |             |                      |

| Ref. No | Species<br>Common Name<br>( <i>Scientific name</i> ) | Estimated Height (m) | Stem Diameter<br>(mm) | Canopy Spread (m) |     |     |     | First Significant<br>Branch & direction<br>(m) | Canopy Clearance<br>height (m) | Physiological<br>Condition | Life Stage | Structural Condition | Observations                                                                                                                                                                                                                                                          | Preliminary<br>Management<br>Recommendations | Work Required to<br>Facilitate the<br>Proposed<br>Development | Estimated Remaining<br>Contribution (yrs) | Category | RPA<br>(m²) | RPA<br>Radius<br>(m) |
|---------|------------------------------------------------------|----------------------|-----------------------|-------------------|-----|-----|-----|------------------------------------------------|--------------------------------|----------------------------|------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|-------------------------------------------|----------|-------------|----------------------|
|         |                                                      |                      |                       | N                 | S   | E   | W   |                                                |                                |                            |            |                      |                                                                                                                                                                                                                                                                       |                                              |                                                               |                                           |          |             |                      |
| T30     | Common alder<br>( <i>Alnus glutinosa</i> )           | 7                    | 160                   | 2                 | 3   | 2   | 2   | 2.0/NE                                         | 2                              | Good                       | SM         | Good                 | Located next to the property boundary fence. Previous pruning evident on lower stem near base to provide clearance for parking.                                                                                                                                       | n/a                                          |                                                               | 10+                                       | C2       |             |                      |
| T31     | Common alder<br>( <i>Alnus glutinosa</i> )           | 8                    | 110, 100              | 3                 | 3   | 3   | 3   | 2.0/S                                          | 2                              | Good                       | SM         | Fair                 | Located next to the property boundary fence. Codominant stems forming a natural brace above stem union. Slight damage at point where stems make contact. Previous pruning of limbs at base with minor decay evident on branch stubs. Some bare branches in the crown. | n/a                                          |                                                               | 10+                                       | C2       |             |                      |
| T32     | Aspen ( <i>Populus tremula</i> )                     | 4                    | 35                    | 0.5               | 0.5 | 0.5 | 0.5 | 1.0/NE                                         | n/a                            | Good                       | Y          | Good                 | A minor specimen located next to the property boundary fence. Easily replaced.                                                                                                                                                                                        | n/a                                          |                                                               | 10+                                       | C2       |             |                      |
| T33     | Aspen ( <i>Populus tremula</i> )                     | 4                    | 30                    | 0.5               | 0.5 | 0.5 | 0.5 | 1.0/N                                          | n/a                            | Good                       | Y          | Good                 | A minor specimen located next to the property boundary fence. Easily replaced.                                                                                                                                                                                        | n/a                                          |                                                               | 10+                                       | C2       |             |                      |
| T34     | Common alder<br>( <i>Alnus glutinosa</i> )           | 7                    | 170#                  | 2.5               | 2.5 | 2.5 | 2.5 | 3.0/NW                                         | 3                              | Good                       | SM         | Good                 | Located next to property boundary fence within a small shrub group. No access to base due to shrub group. No major visible defects. Tree presents a good form and good future potential.                                                                              | n/a                                          |                                                               | 20+                                       | B2       |             |                      |
| G35     | Dogwood ( <i>Cornus sanguinea</i> )                  | 2                    | <100#                 | 1                 | 1   | 1   | 1   | n/a                                            | n/a                            | Good                       | SM         | Good                 | A formally planted, formally maintained shrub feature                                                                                                                                                                                                                 | n/a                                          |                                                               | 10+                                       | C2       |             |                      |
| T36     | Ash ( <i>Fraxinus excelsior</i> )                    | 8                    | 270                   | 3                 | 3   | 4   | 3   | 2.0/NW                                         | 3                              | Fair                       | SM         | Good                 | A tree planted within a roadside grass verge. Minor dieback symptoms within the crown. Occluded wound on lower stem. Previous pruning evident in lower crown. Minor deadwood present.                                                                                 | n/a                                          |                                                               | 20+                                       | B2       |             |                      |

| Ref. No | Species Common Name<br>(Scientific name)                          | Estimated Height (m) | Stem Diameter (mm) | Canopy Spread (m) |   |   |   | First Significant Branch & direction (m) | Canopy Clearance height (m) | Physiological Condition | Life Stage | Structural Condition | Observations                                                                                                                                                                                                                                         | Preliminary Management Recommendations | Work Required to Facilitate the Proposed Development | Estimated Remaining Contribution (yrs) | Category | RPA (m²) | RPA Radius (m) |
|---------|-------------------------------------------------------------------|----------------------|--------------------|-------------------|---|---|---|------------------------------------------|-----------------------------|-------------------------|------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------|----------------------------------------|----------|----------|----------------|
|         |                                                                   |                      |                    | N                 | S | E | W |                                          |                             |                         |            |                      |                                                                                                                                                                                                                                                      |                                        |                                                      |                                        |          |          |                |
| G37     | Black pine ( <i>Pinus nigra</i> )                                 | 9                    | 250#               | 3                 | 3 | 3 | 3 | n/a                                      | 1                           | Good                    | SM         | Good                 | A group containing 3 pine trees. One presents a minor eastern stem lean and has a wound on the lower stem with wound wood. No access to base due to dense shrub group. No major visible defects.                                                     | n/a                                    |                                                      | 20+                                    | B2       |          |                |
| T38     | Black pine ( <i>Pinus nigra</i> )                                 | 9                    | 300#               | 3                 | 3 | 3 | 3 | 2.0/E                                    | 2                           | Good                    | EM         | Good                 | No access to base due to dense shrub group. No major visible defects to report. Minor ivy growth on lower stem. Tree presents a good form and has good future potential.                                                                             | n/a                                    |                                                      | 20+                                    | B1,2     |          |                |
| G39     | Goat willow ( <i>Salix caprea</i> ), Cherry ( <i>Prunus sp.</i> ) | 7                    | 200#               | 5                 | 0 | 2 | 2 | n/a                                      | 2                           | Poor - Dead             | SM         | Poor                 | A group of trees leaning toward the car park, one currently held up by barbed wire fence. No access to base due to boundary fence. Sparse growth in crowns, trees have failed to come into full leaf. Cherry tree appears to be dead.                | Fell to ground level <3 months         |                                                      | <10                                    | U1       |          |                |
| T40     | Ash ( <i>Fraxinus excelsior</i> )                                 | 12                   | 250#               | 2                 | 2 | 2 | 2 | 5.0/W                                    | 3                           | Fair                    | EM         | Good                 | No access to base due to boundary fence. Sparse growth in crown, tree has failed to come into full leaf. Possible symptoms of ash dieback. Lots of deadwood present within the crown. Would not impact the woodland group if tree was to be removed. | Remove dead wood <3 months             |                                                      | 10+                                    | C1       |          |                |

## Appendix C Key to Abbreviations Used in the Survey

|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                      |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>Ref No</b>                                 | Specific identification number given to each tree or group.<br>T=Tree/H=Hedge/G=Group/W=Woodland.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                      |
| <b>Species</b>                                | Common name followed by botanical name shown in <i>italics</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                      |
| <b>RPA</b>                                    | Root Protection Area (As defined by BS5837)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                      |
| <b>Stem diameter</b>                          | Diameter of main stem, measured in millimetres at 1.5 m above ground level.<br>(MS = Multi-stem tree measured in accordance with BS5837 Annexe C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Av / Average:<br><br>indicates an average representative measured dimension for the group or feature |
| <b>Spread</b>                                 | The width and breadth of the crown. Estimated on the four compass points in metres.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                      |
| <b>Crown clearance</b>                        | The estimated height (in metres) above ground level of the lowest significant branch attachments.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                      |
| <b>#</b>                                      | Estimated dimensions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                      |
| <b>*</b>                                      | Indicates estimated position of tree (not indicated on topographical survey).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                      |
| <b>Category</b>                               | Categorisation of the quality and benefits of trees on Site as per Table 1 and 2 of BS5837:2012.<br>1=Arboricultural quality/value<br>2=Landscape quality/value<br>3=Cultural quality/value (including conservation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                      |
|                                               | A=High quality/value 40yrs+ (light green).<br>B=Moderate quality/value 20yrs+ (mid blue)<br>C=Low quality/value min 10yrs/stem diameter less than 150mm (grey).<br>U=Unsuitable for retention (dark red).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                      |
| <b>Life stage</b>                             | <b>Young (Y):</b> Newly planted tree 0-10 years.<br><b>Semi-Mature (SM):</b> Tree in the first third of its normal life expectancy for the species (significant potential for future growth in size).<br><b>Early Mature (EM):</b> Tree in the second third of its normal life expectancy for the species (some potential for future growth in size)<br><b>Mature (M):</b> Tree in the final third of its normal life expectancy for the species (having typically reached its approximate ultimate size).<br><b>Over Mature (OM):</b> Tree beyond the normal life expectancy for the species.<br><b>Veteran (V):</b> Tree which is of interest biologically, aesthetically or culturally because of its condition, size or age. |                                                                                                      |
| <b>Structural condition</b>                   | <b>Good:</b> No significant structural defects<br><b>Fair:</b> Structural defects which can be resolved via remedial works.<br><b>Poor:</b> Structural defects which cannot be resolved via remedial works.<br><b>Dead:</b> Dead.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                      |
| <b>Physiological condition</b>                | <b>Good:</b> Normal vitality including leaf size, bud growth, density of crown and wound wood development.<br><b>Fair:</b> Lower than normal vitality, reduced bud development, reduced crown density, reduced response to wounds.<br><b>Poor:</b> Low vitality, low development and distribution of buds, discoloured leaves, low crown density, little extension growth for the species.<br><b>Dead:</b> Dead<br><b>Fair/Good</b> = Indicates an intermediate condition<br><b>Fair – Good</b> = Indicates a range of conditions (e.g. within a group)                                                                                                                                                                          |                                                                                                      |
| <b>Preliminary management recommendations</b> | Works identified during the tree survey as part of sound arboricultural management, based on the current context of the Site (where relevant reference has been made to tree management based on the potential future context of the site).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                      |

## Appendix D Site Photography



Picture 1 Planted trees within a hedgerow (T2 & T3)



Picture 2 Planted rowan trees with T6 being in poor condition (T5 & T6)



Picture 3 Damage to T6 that exists from base into the tree's canopy



Picture 4 A mature oak (T14) at the entrance to the site.



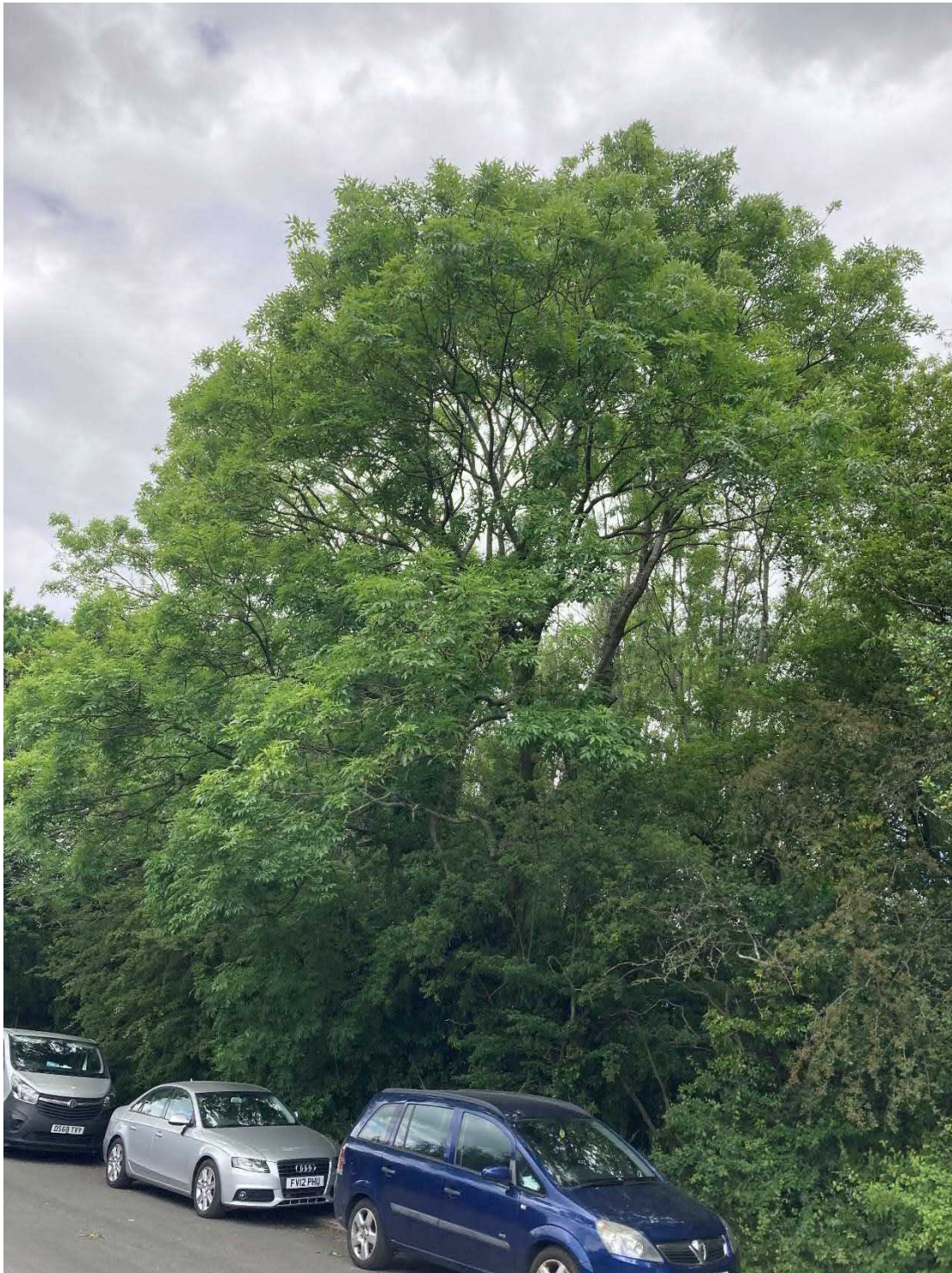
Picture 5 T17, a mature ash with dense ivy growth obscuring visibility



Picture 6 A large declining oak (T18) at the edge of the woodland group, large dead limbs but still some sparse live growth in the crown



Picture 7 A large dead limb seen on T18, overhead wires can also be seen running through the trees crown



Picture 8 One of many mature ash trees lining the woodland edge



Picture 9 Standing dead tree within the woodland group



Picture 10 Another section of standing deadwood within the woodland group providing habitat value



Picture 11 Decay fungi on standing deadwood



Picture 12 An example of the dense spacing of trees within the woodland



**Picture 13 Rubbish tipped throughout woodland**



Picture 14 Heras fence panels tipped in woodland

Georgina Tearne  
Senior Arboricultural Consultant  
T: +44 (0) 113 3018 641  
M: 07384 464 084  
E: [georgina.tearne@aecom.com](mailto:georgina.tearne@aecom.com)

AECOM Limited  
5th Floor, 2 City Walk  
Leeds LS11 9AR  
United Kingdom

T: +44 (0)113 391 6800  
[aecom.com](http://aecom.com)