BS5837:2012 -Trees in relation to design, demolition and construction. Tree Constraints report in relation to trees Belle Green Court Care Home, Cudworth, Barnsley.

Prepared by: East Midlands Tree Surveys Ltd.

Date: 22/12/23

East Midlands Tree Surveys

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1. Instructions

This report was commissioned by Portress & Richardson with instruction to carry out an inspection of trees at Belle Green Court Care Home, Cudworth, Barnsley, in line with *BS5837:2012 Trees in relation to design, demolition and construction - Recommendations.*

The objectives of this report are as follows:

- To make an assessment of the trees' condition and identify any faults.
- To provide recommendations in line with BS5837:2012.
- To provide Tree Constraints in line with BS5837:2012.

2. Information supplied

EMTS was supplied with the following document(s):

Title	Format	Provider
SFS 329POR	DWG	P&R

Our plans are based on the above DWG/DXF files which were imported to our mapping software for revision.

3. Introduction

This document has been prepared to fulfil the requirements for the proposal in accordance with the Department for Communities and Local Government guidance on information requirements and validation and is set out in compliance with British Standard 5837 Trees in relation to design, demolition and construction recommendations 2012.

The initial tree survey is considered to be compliant with BS5837:2012.

All trees considered likely to be affected by the proposal were surveyed and the details are given in Appendix 1 Table.

A topographical survey was provided which showed the position of the trees on site. It should be noted however that topographical surveys are not always comprehensive and sometimes it is considered appropriate to record details of trees and landscape features omitted from or beyond the scope of the plan. If this circumstance occurs, the location of the individual tree or landscape feature is estimated.

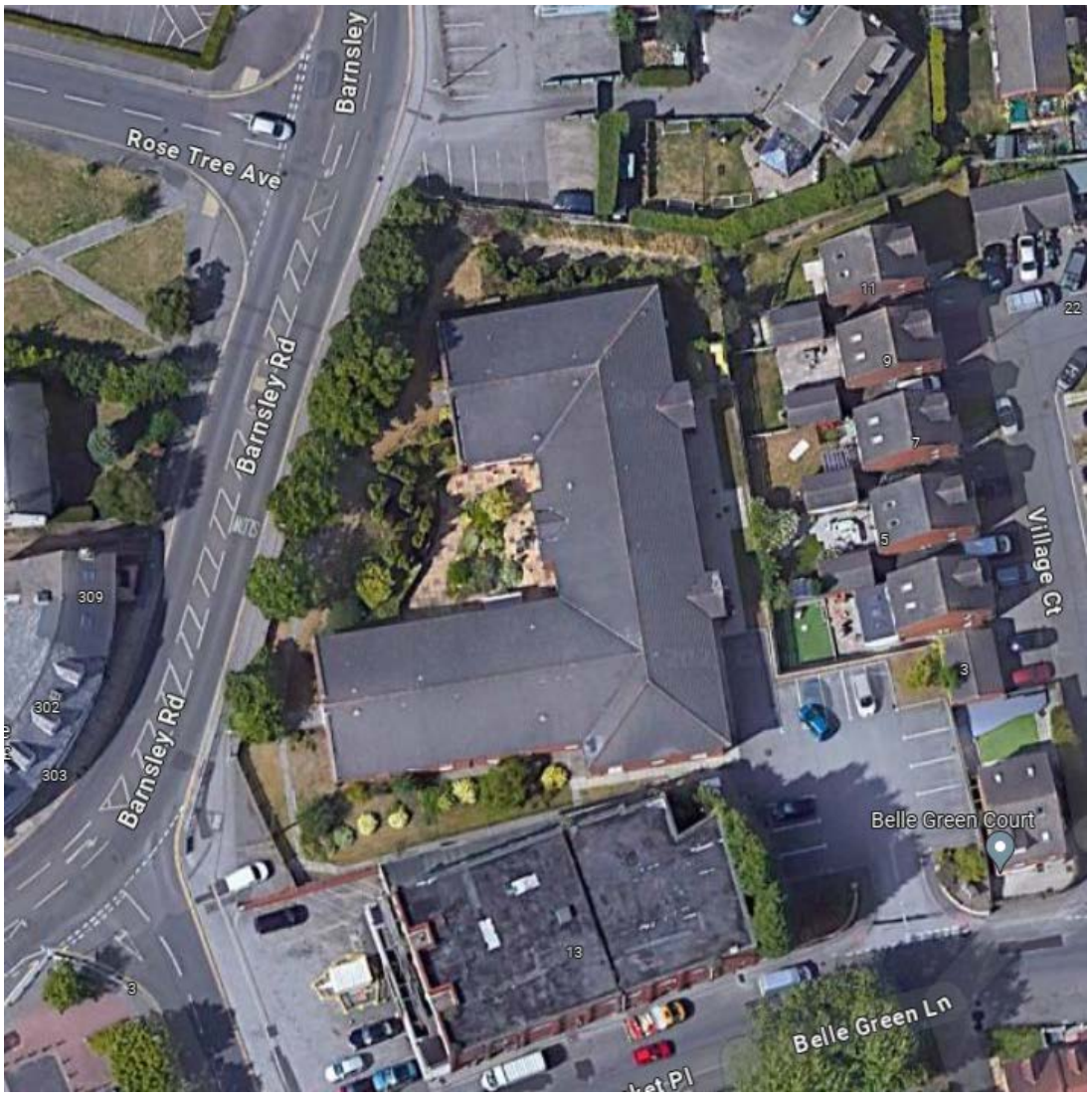
Whilst the plans within this report are all to scale in terms of visual presentation, it is not possible to measure within each plan.

The tree numbers referred to in this report are the same as shown on the tree survey schedule and plan.

This report has been prepared to meet planning requirements and as such is not considered to be a condition survey, any obvious actionable defects will however be picked up as part of the assessment.

4. Site description

The site is adjacent to Barnsley Rd. and currently consists of a Care Home with associated gardens and an historic picture house directly south.



The majority of the trees are along the periphery of the site on Barnsley Rd.

5. Tree survey findings

The tree details along with comments made at the time of the inspection can be found at Appendix 1.

It would appear that a number of trees have been removed since the topographical survey was carried out.

The majority of the trees are in reasonable condition with no actionable defects noted.

Site photos can be found at Appendix 7.

6. Constraints

The tree constraints plan can be found at Appendix 2.

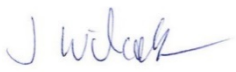
7. Advice/recommendations

Design a site layout that positions buildings outside the RPAs of all retained trees.

It is suggested that the group of ornamental conifers (G2) are removed and replaced due to the die back levels.

G3 Cypress should also be removed, they are unsustainable in that location, growing so close to the adjacent building with the tops touching the upper brick work, equally, there is damage the adjacent retaining wall (See photos).

Due to the high target, it is recommended that the Limes are risk assessed during the summer months based on the levels of crown die back to determine their overall condition.



John Wilcockson – Director, East Midlands Tree Surveys LTD.

Tech Cert (Arbor A), NDF For

22/12/23

Appendix 1 - Tree Survey Data

BS5837 Report

Portess & Richardson

Proposed Care Home, Cudworth, Barnsley

Retention Category	No. trees	Rem. Contrib.	No. trees
B	11	20+ Years	3
C	3	40+ Years	11
Total	14		

Ref.	Species	Full Structure	Measurements	Survey Notes	Retention Category	RPA	Condition	Recommendations
G1	Mixed Broadleaves *(Mixed Broadleaves)*	Group	Height (m): 4.5 Stem Diam(mm): 80 Spread (m): 2.5N, 2.5E, 2.5S, 2.5W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 40+ Years	Predominantly Privet Multi-stemmed stools	B1,2	Area: 61 sq m.	Physiological Cond: Fair Structural Cond: Fair Public Visual Amenity value: High	No action required.
G2	Cypress *(Cupressocyparis sp.)*	Group	Height (m): 4.5 Stem Diam(mm): 100 Spread (m): 0.5N, 0.5E, 0.5S, 0.5W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 40+ Years	Trunk - Multi-stemmed at ground level Ornamental variety Some foliage dieback in places	B1,2	Area: 74 sq m.	Physiological Cond: Fair Structural Cond: Fair Public Visual Amenity value: Medium	No action required.
G3	Cypress *(Cupressocyparis sp.)*	Group	Height (m): 20 Stem Diam(mm): 280 Spread (m): 4N, 4E, 4S, 4W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 40+ Years	Lapsed hedge, part reduced Growing within 2m of the neighbouring building Retaining wall between trees and building is being pushed over	B1,2	Area: 102 sq m.	Physiological Cond: Fair Structural Cond: Fair Public Visual Amenity value: High	Remove trees
H1	Cypress *(Cupressocyparis sp.)*	Group	Height (m): 3 Stem Diam(mm): 80 Spread (m): 0.5N, 0.5E, 0.5S, 0.5W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 40+ Years	Maintained hedge	B1	Area: 26 sq m.	Physiological Cond: Good Structural Cond: Good Public Visual Amenity value: Low	No action required.
H2	Cypress *(Cupressocyparis sp.)*	Group	Height (m): 3 Stem Diam(mm): 80 Spread (m): 0.5N, 0.5E, 0.5S, 0.5W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 40+ Years	Maintained hedge	B1	Area: 11 sq m.	Physiological Cond: Good Structural Cond: Good Public Visual Amenity value: Low	No action required.
T001	Staghorn Sumac *(Rhus typhina)*	Tree	Height (m): 5 Stem Diam(mm): 100 Spread (m): 4N, 4E, 4S, 4W Crown Clearance (m): 1 Life Stage: Mature Rem. Contrib.: 20+ Years	Trunk - codominant at ground level Crown - minor deadwood < 100mm Trunk - old pruning wounds/stubs Roots - surface damage Poor form	C1	Radius: 1.2m. Area: 5 sq m.	Physiological Cond: Fair Structural Cond: Fair Public Visual Amenity value: Low	No action required.
T002	Lime *(Tilia sp.)*	Tree	Height (m): 12 Stem Diam(mm): 190 Spread (m): 4N, 4E, 4S, 5W Crown Clearance (m): 4 Life Stage: Semi Mature Rem. Contrib.: 40+ Years	Crown - minor deadwood < 100mm Trunk - old pruning wounds/stubs Crown - asymmetric due to historic competition from removed trees	B1,2	Radius: 2.3m. Area: 17 sq m.	Physiological Cond: Good Structural Cond: Good Public Visual Amenity value: High	No action required.
T003	Ash *(Fraxinus sp.)*	Tree	Height (m): 11 Stem Diam(mm): 260 Spread (m): 4.5N, 4.5E, 4.5S, 4.5W Crown Clearance (m): 3 Life Stage: Semi Mature Rem. Contrib.: 40+ Years	Trunk - old pruning wounds/stubs Trunk - codominant stems at 2m Telecoms cables	B1,2	Radius: 3.1m. Area: 30 sq m.	Physiological Cond: Good Structural Cond: Good Public Visual Amenity value: High	No action required.

Ref.	Species	Full Structure	Measurements	Survey Notes	Retention Category	RPA	Condition	Recommendations
T004	Lime *(Tilia sp.)*	Tree	Height (m): 9 Stem Diam(mm): 240 Spread (m): 4N, 4E, 4S, 4W Crown Clearance (m): 2 Life Stage: Semi Mature Rem. Contrib.: 40+ Years	Crown - minor deadwood < 100mm Trunk - old pruning wounds/stubs Crown - Broken hanging branches	B1,2	Radius: 2.9m. Area: 26 sq m.	Physiological Cond: Good Structural Cond: Good Public Visual Amenity value: High	No action required.
T005	Lime *(Tilia sp.)*	Tree	Height (m): 7 Stem Diam(mm): 190 Spread (m): 1N, 3E, 3S, 4W Crown Clearance (m): 2 Life Stage: Semi Mature Rem. Contrib.: 20+ Years	Crown - minor deadwood < 100mm Trunk - old pruning wounds/stubs Trunk - codominant stems at 1.6m Central trunk has failed historically Crown - asymmetric Crown - suppressed	C1,2	Radius: 2.3m. Area: 17 sq m.	Physiological Cond: Fair Structural Cond: Fair Public Visual Amenity value: High	No action required.
T006	Lime *(Tilia sp.)*	Tree	Height (m): 14 Stem Diam(mm): 390 Spread (m): 5N, 5E, 5S, 5W Crown Clearance (m): 2 Life Stage: Semi Mature Rem. Contrib.: 20+ Years	Crown - minor deadwood < 100mm Trunk - old pruning wounds/stubs Trunk - codominant stems at 4m Crown - dieback Telecoms cables	C1,2	Radius: 4.7m. Area: 69 sq m.	Physiological Cond: Fair Structural Cond: Fair Public Visual Amenity value: High	No action required.
T007	Lime *(Tilia sp.)*	Tree	Height (m): 15 Stem Diam(mm): 530 Spread (m): 7N, 7E, 4S, 7W Crown Clearance (m): 2 Life Stage: Semi Mature Rem. Contrib.: 40+ Years	Crown - minor deadwood < 100mm Trunk - old decaying pruning wounds/stubs Trunk - codominant stems at 4m Crown - dieback Telecoms cables	B1,2	Radius: 6.4m. Area: 129 sq m.	Physiological Cond: Fair Structural Cond: Fair Public Visual Amenity value: High	No action required.
T008	Lime *(Tilia sp.)*	Tree	Height (m): 9 Stem Diam(mm): 200 Spread (m): 4N, 4E, 4S, 4W Crown Clearance (m): 2 Life Stage: Semi Mature Rem. Contrib.: 40+ Years	Trunk - old pruning wounds/stubs Trunk - codominant stems at 1.9m Telecoms cables	B1,2	Radius: 2.4m. Area: 18 sq m.	Physiological Cond: Fair Structural Cond: Fair Public Visual Amenity value: High	No action required.
T009	Lime *(Tilia sp.)*	Tree	Height (m): 9 Stem Diam(mm): 270 Spread (m): 4.5N, 4.5E, 3S, 4.5W Crown Clearance (m): 2 Life Stage: Semi Mature Rem. Contrib.: 40+ Years	Trunk - old pruning wounds/stubs Trunk - codominant stems at 1.5m Telecoms cables Crown - minor deadwood < 100mm	B1,2	Radius: 3.2m. Area: 32 sq m.	Physiological Cond: Fair Structural Cond: Fair Public Visual Amenity value: High	No action required.

Appendix 2. Tree Constraints Plan

KEY **BS 5837:2012 retention categories**

- Grade A Trees
- Grade B Trees
- Grade C Trees
- Grade U Trees
- Extent of Root Protection Area
- Extent of Canopy
- Extent of Canopy - Groups
- Trees to be Felled and Replaced
- Shade Footprint

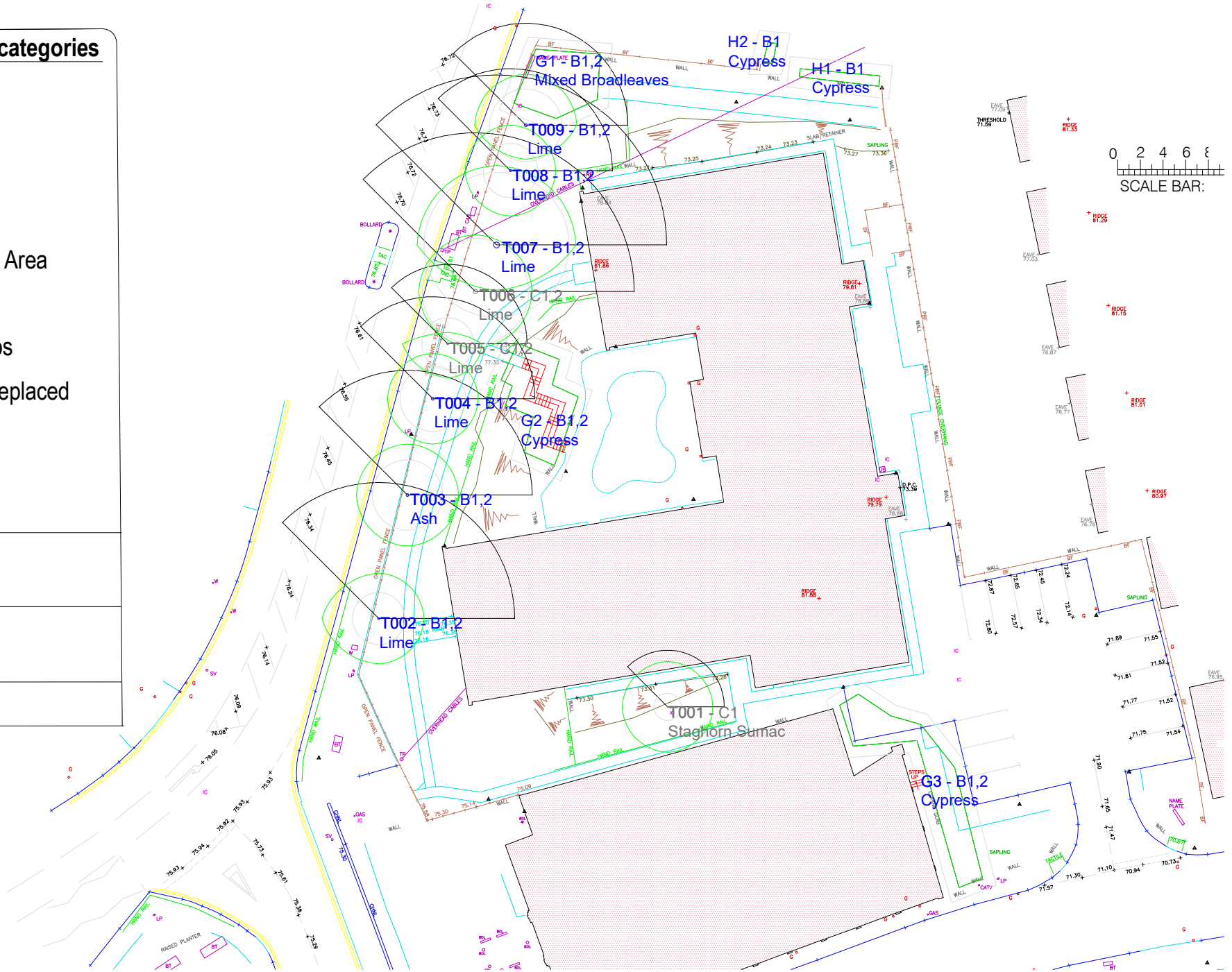
Tree Constraints Plan

Care Home Cudworth

Client:

Portress & Richardson

TO SCALE WITHIN PLAN	Date: 22/12/23



Appendix 3. Tree survey

The trees were assessed objectively using 'Visual Tree Assessment' (VTA) techniques from the ground. VTA is a methodology, employed by arboriculturists, to evaluate the structural integrity of a tree, relying on observation of a trees biomechanical and physiological features; this is the method generally adopted and is appropriate in this instance. The survey includes an individual tree number listed sequentially, tree Species in both its common and botanical name, its height, stem diameter measured at 1.5m from ground level, spread of the radius of the crown by cardinal points, height of the crown above ground level, age classification its general condition and any general conditions structural or biological defects noted during the survey. An estimate of the remaining safe life expectancy (SLE) and the category as defined in BS 5837:2012 Recommendations cascade chart for tree quality assessment.

The root protection area (RPA) will be calculated from the stem diameter and this will identify the area which will require special protection during the works.

Trees on the site have been divided into one of four categories (based on the cascade chart for tree quality assessment). These are classed as A, B, C or U (Section 4 of BS 5837) within the table in Appendix 1, Table 2. This gives an indication as to the tree's importance in relation to the site, the local landscape and, also, the value and quality of the existing trees on site. This assists informal decisions concerning which trees should be removed or retained should development occur. For a tree to qualify under any given category it should fall within the scope of that category's definition (see below).

Categories A, B and C cover trees that should be a material consideration in the development process, each with three further sub-categories (i, ii, iii) which are intended to reflect arboricultural, landscape and cultural (nature conservation) values. Category U trees may have no significant landscape value, but it is not presumed that there is any overriding need to remove these unless stated otherwise in the description and recommendations. They are for this reason not considered as being significant within the planning process. In assigning trees to the A, B or C categories, and the presence of any serious disease or tree–related hazard is taken into account. If the disease is considered fatal and/or irremediable, or likely to require sanitation for the protection of other trees it may be categorised as U with a recommendation for work or even removal, even if they are otherwise of considerable value.

Category (A): Trees whose retention is most desirable and are of high quality and value. These trees are considered to be in such a condition as to be able to make a lasting contribution (a minimum of 40 years) and may comprise:

(i) Trees which are particularly good examples of their species especially rare or unusual, or essential components of groups or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue);

(ii) Trees, or groups of trees which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups);

(iii) Trees or groups of significant conservation, historical, commemorative or other value (e.g. Veteran or wood-pasture trees).

Category (B): Trees whose retention is considered desirable and are of moderate quality and value. These trees are considered to be in such a condition as to make a significant contribution (a minimum of 20 years) and may comprise:

(i) Trees that might be included in the high category but because of their numbers or slightly impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage), are downgraded in favour of the best individuals;

(ii) Trees present in numbers such that they form distinct landscape features and attract a higher collective rating than they would as individuals. Individually these trees are not essential components of formal or semi-formal arboricultural features, or trees situated mainly internally to the site and have little visual impact beyond the site;

(iii) Trees with clearly identifiable conservation or other cultural benefits.

Category (C): Trees that could be retained and are considered to be of low quality and value. These trees are in an adequate condition to remain until new planting could be established (a minimum of ten years) or are young trees with a stem diameter below 150 mm and may comprise:

(i) Trees not qualifying in higher categories;

(ii) Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value and or trees offering low or only temporary screening benefit;

(iii) Trees with very limited conservation or other cultural benefits.

Category (U): Trees that are considered to have no significant landscape value, but it is not presumed that there is any overriding need to remove these unless stated otherwise in the description and recommendations. They are for this reason not considered as being significant within the planning process. These trees will be in such a condition that any existing value would be lost within 10 years and which should in the current context be ignored or removed for reasons of sound arboricultural management. Trees within this category are:

(i) Trees that have a serious irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees;

(ii) Trees that are dead or are showing signs of significant, immediate or irreversible overall decline;

(iii) Trees infected with pathogens of significance to the health and or/safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality.

All U Category (poor quality) trees should generally be removed for reasons of sound arboricultural practice or health & safety, irrespective of any development proposals, unless they offer particular conservation value to the site, in which case this will be highlighted in the survey schedule along with appropriate recommendations.

As regards the C category trees, it may not always be possible or even desirable to retain low quality trees within the context of a proposed development, unless in such a location that they do not represent a significant constraint on the design brief. Young trees, and those with a stem diameter of less than 150mm, will normally be placed in the C category, unless it is considered that they are of especially good form or are of a species that is particularly rare, in which case they may be upgraded.

All A & B Category trees (high & moderate quality) will under normal circumstances be retained on development sites, and should ideally influence and inform the conceptual design, site layout, and in some cases the specific construction methods to be used – The root protection area and/or crown spread of these trees will generally form a construction exclusion zone, although under certain circumstances it may be possible to build or operate within these areas providing that appropriate measures and specifications have been formally agreed between the local planning authority, the consulting arborist and the developer/client.

The Soil type was not assessed.

This report is valid for two years from the date of site inspection. The condition of trees can change following severe weather conditions, the effects of diseases and pests, and other abiotic factors.

Appendix 4. Legal Constraints

Where Local Planning Authorities can assess trees as beneficial to the wider community in terms of their amenity value, they may be protected by a Tree Preservation Order (TPO).

In certain areas classified as Conservation Areas, all trees with a stem diameter of 75mm (measured at 1.5m above ground) are protected by Conservation Area legislation. The LPA must be given notice of any work intended so they can visit the site and then either protect the tree(s) with a TPO or allow the works to go ahead. Their decision must be made within a six-week period. If no decision is made within the six-week period, the work may be carried out, providing it is done within a two-year period.

If trees protected by a TPO or within conservation areas are cut-down, topped, lopped, uprooted or wilfully damaged or destroyed, the owner of the tree(s) and the contractor

responsible for the work can both be legally prosecuted. The current maximum fine is £20,000 per tree at the Magistrates Court or unlimited fine at the Crown Court.

Trees that are dead or dangerous are exempt from legislation. It is common good practice to notify the LPA of intention to carry out work to trees that fall into these categories, preferably with some notice (e.g. one working week).

A leaflet produced by the DTLR (Protected Trees), covers the issues raised by this legislation.

Any works prescriptions for protected trees can be dealt with by way of inclusion into a Planning Application for development purposes; this avoids the need to make a separate tree application.

A check with the Local Planning Authority has not been carried out.

Statutory wildlife obligations: The Wildlife and Countryside Act 1981 as amended by the Countryside and The Habitat Regulations 2012 and The Conservation of Habitats and Species Regulations 2017 provide statutory protection to birds, bats and other species that inhabit trees. All tree work operations are covered by these provisions and advice from an ecologist should be obtained before undertaking any works that might constitute an offence.

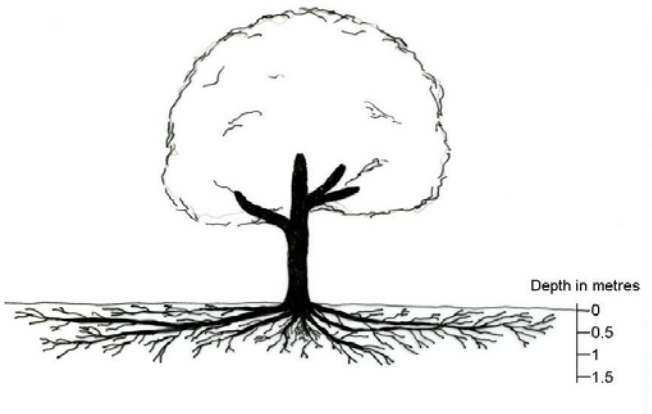
Appendix 5. Arboricultural considerations in relation to development.

Rooting structure

Rooting structure is a key issue when dealing with trees and development. To ensure the survival of trees the British Standard Institute has introduced the concept of a Root Protection Area (RPA). The RPA is an area surrounding a tree that contains sufficient rooting volume to ensure the tree's survival and is represented in square metres. (BS5837 2012 discusses the extent and for of a trees root system.)

The following diagram represents the typical rooting pattern of a tree. Note that 90% of the trees roots are usually located within the top 1m of soil and that roots may spread well beyond the canopy. Therefore, no works are allowed within the RPA. Even a small trench 0.5 metres deep to accommodate a cable or drain may lead to the loss of the tree. When work is proposed or is absolutely necessary within the RPAs of retained trees the proposals will only be considered if supported by an agreed robust and realistic Arboricultural Method Statement, following recommendations within BS 5837 2012.

Typical rooting structure of a tree



To successfully integrate trees into a development it will be necessary to allow enough space in the design to allow trees to mature and flourish and to agree protection measures during the entire construction phase. Trees should be considered at the earliest design stage to allow them to be successfully integrated into new development, a survey of trees on and adjacent to the site should be one of the first steps in the design process.

How can trees be damaged?

Compaction of the soil

When soil is compacted, the soil structure is damaged by removing the spaces between soil particles preventing the exchange of gases and uptake of nutrients by trees. The storage of materials, including bricks, soil, gravel and cement, and the movement of vehicles can cause compaction. One vehicle's movement can cause sufficient compaction to damage a tree. Compacted ground may alter soil drainage, resulting in the ground becoming waterlogged. The storage of materials and the movement of vehicles within RPAs will only be permitted when it is shown to be absolutely necessary and supported by an agreed robust and realistic Arboricultural Method Statement.

Excavations

Excavations within the RPA are likely to cause root severance. This may lead to loss of vigor, reduced uptake of water and nutrients, allow access for decay organisms and may compromise the tree's stability. Under exceptional circumstances, where excavation may be justified, hand digging will be required and the presence of an arboricultural consultant to supervise the works will be required on site.

Ground level changes

Both reduction and raising of soil levels can be detrimental even if this is only by a few centimeters. Reducing ground levels may sever roots and can increase the drainage of a site thereby reducing water availability. Raising ground levels can cause compaction and suffocate roots. There will be a presumption against the changing of ground levels within RPAs. Changing of ground levels within RPAs will only be permitted when it is

shown to be absolutely necessary and supported by an agreed robust and realistic Arboricultural Method Statement.

Impact damage

This can be caused by machinery and includes torn branches, and damage to bark and trunk. Damaged areas of trees can allow the entry of decay organisms and reduced vigour. There will be a presumption against the movement of machinery and equipment within RPAs. The movement of machinery and equipment will only be permitted when it is shown to be absolutely necessary and supported by an agreed robust and realistic Arboricultural Method Statement.

Soil contamination

This can be caused by the spillage of oil, fuel and chemicals, mixing cement or other materials. To prevent leaching through the soil where significant tree roots can be found, all chemicals should be kept in a safe storage area downhill from trees at least 10m from the RPA. There will be a presumption against the storage of chemicals within 10m of the RPAs of retained trees and storage will only be permitted when it is shown to be absolutely necessary and supported by an agreed robust and realistic Arboricultural Method Statement.

Fires

Conducted and radiated heat as well as flames will damage trees resulting in the loss and damage to both major and fibrous roots, and damage to the trees vascular system under the bark even if the bark does not appear burnt. Keep fires a minimum of 10m from the outer crown spread of any retained trees or vegetation. If this clearance is not achievable, all waste must be disposed of off-site.

Appendix 6. Biosecurity advice

Please see the Forestry Commission's latest guidance in relation to biosecurity.

Biosecurity measures are a series of precautionary steps designed to reduce the risk of transmission of harmful organisms and must address 'movement pathways' for such organisms. In the context of the following guidance, good biosecurity practice refers to ways of working that minimise the risk of contamination and the spread of pests and invasive plants. Unless stated otherwise, the term "pest" should be taken to include all invertebrate, bacterial or fungal organisms that are harmful to trees. The term does not refer to other threats to trees such as deer or grey squirrels.
https://www.forestresearch.gov.uk/documents/5498/FC_Biosecurity_Guidance_Y6HQJHZ.pdf

Appendix 7. Site photos

T1

T2-T9

G1 with T7-T9 to the left.

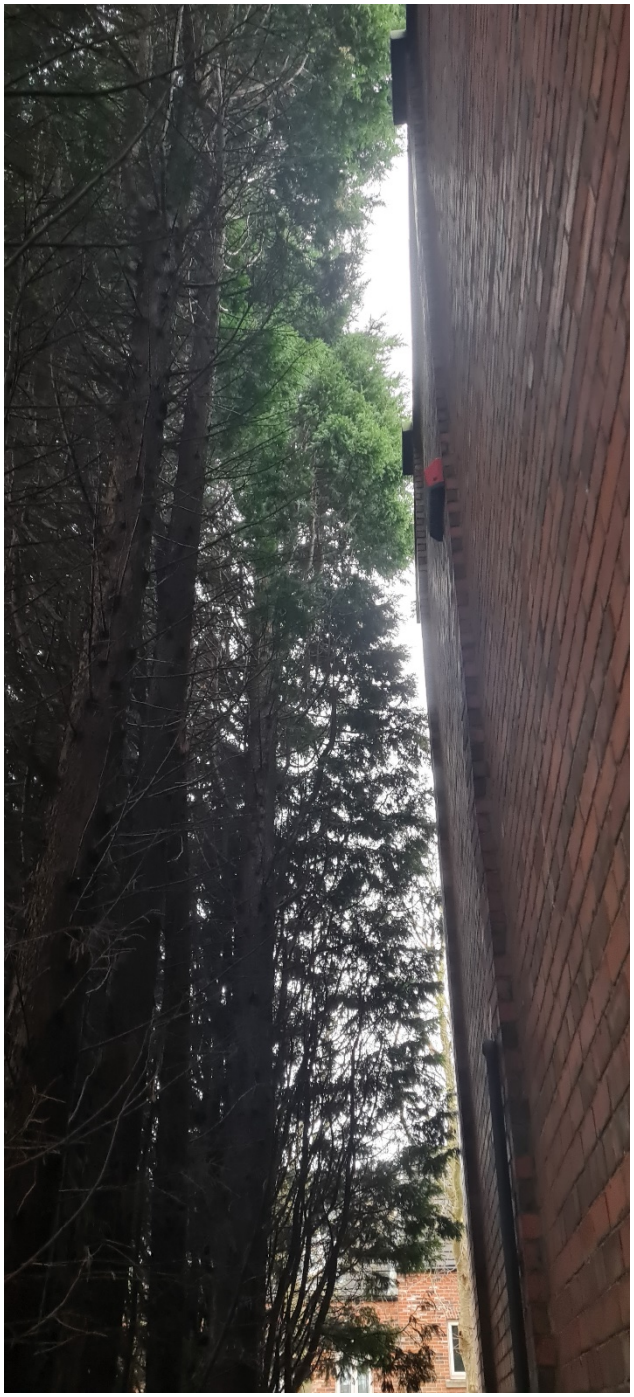
H1 & H2

East Midlands Tree Surveys

G2

G3

East Midlands
Tree Surveys



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