# Arboricultural Report
# &
# Tree Constraints Plan

# of

# Manor House, Church Street, Burbage, LE10 2DB

# for

# Mr S & Ms C Bennett

28/04/2023

2020-01(12)

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Survey date: 3rd February 2020

| Report Version | Date | Author: | Quality check by: | Approved by: |
|---|---|---|---|---|
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| Revised | 27/04/23 | John Crawshaw<br>M.Arbor.A.<br>Senior Arboriculturalist | Helen Morgan<br>PA to Director | George Burton,<br>MCIAT., CEnv.,<br>MIEMA., ACIEEM |

## Contents

# 1 Introduction

## 1.1 Instruction

Ecolocation were commissioned by Mr S and Ms C Bennett to provide an Arboricultural report for the trees within and adjacent to the Manor House, Church Street, Burbage in Leicestershire (hereafter referred to as the 'Site'), as shown on the Tree Constraints Plan, which was understood will be subject to a future planning application for residential development.

### *1.1.1 Site location*

The Site comprises a detached house set in extensive grounds including gardens and pond with a variety of trees and shrubs present within the Site boundary, shown in Figure 1.


*Figure 1: Survey boundary*

## 1.2 Limitations of use and copyright

# 2 Methodology

## 2.1 Site Visit

The Site was visited by suitably qualified Arboriculturalist John Crawshaw. (M.Arbor.A. RFS Cert Arb) on Monday 3rd February 2020. The survey took approximately 3 hours. This report is based on Site observations and the provided information. Conclusions were drawn in the light of their experience and qualifications above.

## 2.2 Limitations

There were no limitations at the time of the survey.

## 2.3 Tree Observation

The trees were visually inspected, and the information recorded below. Each tree has been given a classification relevant to BS5837 2012.

| CASCADE CHART FOR TREE QUALITY ASSESSMENT (from British Standard 5837:2012 "Trees in Relation to Design, demolition and Construction") | | | |
|---|---|---|---|
| TREES FOR REMOVAL | | Identification on Plan | DARK RED |
| Category and Definition | Criteria | | |
| Category U<br>Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years | ➢ 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 U category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning).<br>➢ Trees that are dead or are showing signs of significant, immediate and irreversible overall decline.<br>➢ 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.<br>NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7 | | |

| TREES TO BE CONSIDERED FOR RETENTION | | | | | |
|---|---|---|---|---|---|
| Category and Definition | Criteria – Subcategories | | | Identification on Plan | |
| | 1. Mainly Arboricultural Qualities | 2. Mainly Landscape Qualities | 3. Mainly Cultural Values, including Conservation | | |
| Category A<br>Those of high quality with a estimated remaining life expectancy of at least 40 years | Trees that are particularly good examples of their species, especially if 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). | Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features | Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture). | LIGHT GREEN | |
| Category B<br>Those of moderate quality with a estimated remaining life expectancy of at least 20 years | Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of unsympathetic past management and storm damage) such that they are unlikely to be suitable for retention for beyond 40 years; or lacking the merit for Category A | Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality | Trees with clearly identifiable conservation or other cultural benefits. | MID BLUE | |
| Category C<br>Those of low quality with an estimated life expectancy of at least 10 years, or young trees with a stem diameter below 150mm. | Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories | Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits | Trees with very limited conservation or other cultural benefits. | GREY | |

## 2.4 Trees

### *2.4.1 Tree Survey Schedule*

| Ref | Species | H/T | Stems | Dia | Canopy | | | | First | Crown | Age | Yrs | Cat | Observations | Recommendations | RPA (r) | RPA (a) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | mm | N | E | S | W | Branch | H/T | | | | | | | |
| T1 | Beech | 14 | S | 700 | 5 | 5 | 5 | 5 | 3N | 3 | Mature | 40+ | A | Good overall condition | None | 8.4 | 221.7 |
| T2 | Holly | 4 | M | 300 | 1.5 | 1.5 | 2 | 1.5 | 2S | 2 | Early Mature | 40+ | B | Good overall condition | None | 3.6 | 40.7 |
| T3 | Holly | 4 | M | 275 | 1 | 1.5 | 1 | 1.5 | 2N | 2 | Early Mature | 40+ | B | Good overall condition | None | 3.3 | 34.2 |
| T4 | Holly | 4 | M | 250 | 2 | 1.5 | 2 | 1.5 | 2S | 2 | Early Mature | 40+ | B | Good overall condition | None | 3 | 28.3 |
| T5 | Holly | 4 | M | 300 | 2.5 | 2.5 | 2.5 | 2.5 | 1E | 1 | Early Mature | 40+ | B | Good overall condition | None | 3.6 | 40.7 |
| T6 | Maple | 10 | S | 400 | 5 | 5 | 5 | 5 | 2S | 4 | Mature | 40 | B | Good overall condition | None | 4.8 | 72.4 |
| T7 | Robinia | 9 | S | 350 | 3 | 3 | 3 | 3 | 3N | 3 | Mature | 20 | C | Showing signs of decline, ivy encroachment | Monitor/possible removal | 4.2 | 55.4 |
| T8 | Lime | 20 | S | 1200 | 8 | 8 | 8 | 10 | 4N | 4 | Mature | 40 | A | Good overall condition | None | 14.4 | 651.4 |
| T9 | Beech | 18 | S | 1000 | 4 | 6 | 10 | 10 | 4S | 4 | Mature | 40+ | A | Good overall condition, minor decay in old pruning wound. Large spread over road, possible limb reduction to reduce weight | Maintain management regime | 12 | 452.4 |
| T10 | Damson | 5 | S | 200 | 1.5 | 1.5 | 1.5 | 1.5 | 2E | 2 | Mature | 20 | C | Good overall condition | None | 2.4 | 18.1 |
| T11 | Robinia | 7 | S | 400 | 2 | 2 | 2 | 2 | 6N | 6 | Mature | 30 | B | Good overall condition | None | 4.8 | 72.4 |
| T12 | Robinia | 7 | S | 450 | 1.5 | 2 | 1.5 | 2 | 5E | 6 | Mature | 30 | B | Good overall condition | None | 5.4 | 91.6 |
| T13 | Conifer | 12 | S | 375 | 2.5 | 2.5 | 2.5 | 2.5 | 3W | 1.5 | Mature | 40+ | C | Good overall condition | None | 4.5 | 63.6 |
| T14 | Conifer | 12 | S | 450 | 2.5 | 2.5 | 2.5 | 2.5 | 3E | 1.5 | Mature | 40+ | C | Good overall condition | None | 5.4 | 91.6 |
| T15 | Holly | 4 | M | 300 | 3 | 2.5 | 3 | 3 | 1E | 1.5 | Mature | 40+ | C | Good overall condition | None | 3.6 | 40.7 |
| T16 | Cotoneaster | 6 | M | 400 | 1.5 | 1 | 1.5 | 1.5 | 4S | 4 | Mature | 40+ | C | Good overall condition | None | 4.8 | 72.4 |
| T17 | Fruit | 4 | S | 200 | 1.5 | 1.5 | 1.5 | 1.5 | 2N | 2 | Mature | 20 | C | Good overall condition | None | 2.4 | 18.1 |
| T18 | Fruit | 4 | S | 150 | 1 | 1.5 | 1.5 | 1 | 2E | 2 | Mature | 20 | C | Good overall condition | None | 1.8 | 10.2 |
| T19 | Beech | 18 | S | 700 | 4 | 4 | 4 | 4 | 5S | 4 | Mature | 40+ | A | Good overall condition | None | 8.4 | 221.7 |
| T20 | Beech | 18 | S | 800 | 6 | 5 | 4 | 5 | 6N | 4 | Mature | 40+ | A | Good overall condition | None | 9.6 | 289.5 |
| T21 | Yew | 4 | S | 250 | 2 | 2.5 | 2 | 2 | 1N | 0.5 | Early Mature | 40+ | B | Good overall condition | None | 3 | 28.3 |
| T22 | Beech | 18 | S | 750 | 6 | 5 | 6 | 6 | 5N | 4 | Mature | 40+ | A | Good overall condition | None | 9 | 254.5 |
| T23 | Beech | 18 | S | 700 | 7 | 5 | 4 | 4 | 6N | 4 | Mature | 40+ | A | Good overall condition | None | 8.4 | 221.7 |
| T24 | Elm | 6 | S | 150 | 1.5 | 1.5 | 1.5 | 1.5 | 2E | 1.5 | Young | 10 | C | Good overall condition | None | 1.8 | 10.2 |
| T25 | Oak | 10 | S | 275 | 2.5 | 3 | 2.5 | 2.5 | 4N | 4 | Young | 40+ | B | Good overall condition, minor deadwood | Remove Deadwood | 3.3 | 34.2 |
| T26 | Hazel | 5 | M | 275 | 3 | 3 | 1.5 | 1.5 | 2E | 1.5 | Mature | 40 | C | Showing signs of decline, deadwood & decayed limbs | Monitor condition | 3.3 | 34.2 |
| T27 | Ash | 14 | S | 300 | 3 | 3 | 3 | 3 | 2S | 5 | Early Mature | 40+ | B | Minor deadwood present | Remove Deadwood | 3.6 | 40.7 |
| T28 | Ash | 15 | S | 350 | 3 | 3 | 3 | 3 | 2S | 5 | Early Mature | 40+ | B | Minor deadwood present | Remove Deadwood | 4.2 | 55.4 |
| T29 | Ash | 15 | S | 275 | 4 | 4 | 3 | 4 | 4N | 4 | Early Mature | 40+ | B | Minor deadwood present | Remove Deadwood | 3.3 | 34.2 |
| T30 | Ash | 15 | S | 300 | 3 | 3 | 3 | 3 | 3W | 4 | Early Mature | 40+ | B | Minor deadwood present | Remove Deadwood | 3.6 | 40.7 |
| T31 | Elm | 6 | S | 150 | 1.5 | 1.5 | 1.5 | 1.5 | 2E | 1.5 | Young | 10 | C | Good overall condition | None | 1.8 | 10.2 |
| T32 | Elm | 8 | S | 200 | 2.5 | 1.5 | 2.5 | 1.5 | 1S | 1.5 | Young | 10 | C | Good overall condition | None | 2.4 | 18.1 |
| T33 | Ash | 6 | S | 400 | 1.5 | 1.5 | 1.5 | 1.5 | 6S | 6 | Dead | 0 | C | Dead tree with superb habitat potential over lake. | None | 4.8 | 72.4 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T34 | Ash | 12 | S | 500 | 3 | 5 | 3 | 3 | 6S | 6 | Early Mature | 40+ | B | Good overall condition | None | 6 | 113.1 |
| T35 | Ash | 18 | S | 450 | 4 | 4 | 4 | 4 | 5N | 5 | Early Mature | 40+ | B | Good overall condition | None | 5.4 | 91.6 |
| T36 | Ash | 6 | S | 400 | 5 | 4 | 4 | 4 | 6S | 6 | Early Mature | 40+ | B | Good overall condition | None | 4.8 | 72.4 |
| T37 | Ash | 6 | S | 500 | 4 | 4 | 4 | 4 | 6N | 6 | Early Mature | 40+ | B | Good overall condition | None | 6 | 113.1 |
| T38 | Ash | 6 | S | 425 | 3 | 4 | 3 | 3 | 5E | 4 | Early Mature | 40+ | B | Good overall condition | None | 5.1 | 81.7 |
| T39 | Ash | 6 | S | 525 | 5 | 4 | 5 | 4 | 4W | 6 | Early Mature | 40+ | B | Good overall condition | None | 6.3 | 124.7 |
| T40 | Ash | 6 | S | 400 | 4 | 5 | 4 | 4 | 5E | 6 | Early Mature | 40+ | B | Good overall condition | None | 4.8 | 72.4 |
| T41 | Ash | 6 | S | 450 | 3 | 4 | 3 | 3 | 6S | 7 | Early Mature | 40+ | B | Good overall condition | None | 5.4 | 91.6 |
| T42 | Hornbeam | 6 | M | 400 | 4 | 2.5 | 2 | 3 | 2S | 2 | Mature | 40 | C | Good overall condition | None | 4.8 | 72.4 |
| T43 | Damson | 4 | S | 275 | 2.5 | 2.5 | 2.5 | 2.5 | 1N | 1 | Over Mature | <5 | C | Poor quality specimen, significant decay in main stem and limbs | Monitor/possible removal | 3.3 | 34.2 |
| T44 | Apple | 2 | M | 150 | 1.5 | 2 | 1 | 1.5 | 1N | 1 | Over Mature | <10 | C | Poor quality specimen in decline | Monitor/possible removal | 1.8 | 10.2 |
| T45 | Damson | 3 | S | 150 | 2.5 | 0.5 | 0.5 | 0.5 | 2N | 2 | Over Mature | <5 | C | Poor quality specimen, significant decay in main stem and limbs | Monitor/possible removal | 1.8 | 10.2 |
| T46 | Ash | 14 | S | 500 | 4 | 4 | 4 | 5 | 6S | 6 | Mature | 40 | C | Good overall condition, ivy encroachment | None | 6 | 113.1 |
| T47 | Conifer | 9 | S | 350 | 4 | 3 | 3 | 3 | 1N | 0.5 | Mature | 40+ | C | Good overall condition | None | 4.2 | 55.4 |
| T48 | Conifer | 9 | S | 300 | 4 | 3 | 3 | 3 | 1N | 0.5 | Mature | 40+ | C | Good overall condition | None | 3.6 | 40.7 |
| T49 | Conifer | 9 | S | 350 | 3 | 3 | 3 | 3 | 1S | 0.5 | Mature | 40+ | C | Good overall condition | None | 4.2 | 55.4 |
| T50 | Conifer | 7 | S | 375 | 3 | 3 | 3 | 3 | 1N | 0.5 | Mature | 40+ | C | Good overall condition | None | 4.5 | 63.6 |
| T51 | Conifer | 8 | S | 400 | 3 | 3 | 3 | 3 | 1N | 0.5 | Mature | 40+ | C | Good overall condition | None | 4.8 | 72.4 |
| T52 | Conifer | 9 | S | 375 | 3 | 2 | 2 | 3 | 1E | 0.5 | Mature | 40+ | C | Good overall condition | None | 4.5 | 63.6 |
| T53 | Conifer | 9 | S | 350 | 3 | 3 | 3 | 3 | 1N | 0.5 | Mature | 40+ | C | Good overall condition | None | 4.2 | 55.4 |
| T54 | Conifer | 8 | S | 350 | 3 | 3 | 3 | 3 | 1N | 1 | Mature | 40+ | C | Good overall condition | None | 4.2 | 55.4 |
| T55 | Conifer | 9 | S | 350 | 3 | 3 | 3 | 3 | 2E | 0.5 | Mature | 40+ | C | Good overall condition | None | 4.2 | 55.4 |
| T56 | Conifer | 9 | S | 350 | 2 | 2 | 2 | 2 | 1N | 1.5 | Mature | 40+ | C | Good overall condition | None | 4.2 | 55.4 |
| T57 | Conifer | 9 | S | 375 | 2 | 3 | 2 | 3 | 2N | 0.5 | Mature | 40+ | C | Good overall condition | None | 4.5 | 63.6 |
| T58 | Ash | 12 | S | 350 | 4 | 3 | 3 | 3 | 5N | 4 | Early Mature | 40+ | B | Good overall condition | None | 4.2 | 55.4 |
| T59 | Conifer | 9 | S | 350 | 3 | 3 | 3 | 3 | 1N | 0.5 | Mature | 40+ | C | Good overall condition | None | 4.2 | 55.4 |
| T60 | Conifer | 9 | S | 350 | 2 | 2.5 | 2.5 | 3 | 1S | 2 | Mature | 40+ | C | Good overall condition | None | 4.2 | 55.4 |
| T61 | Conifer | 9 | S | 325 | 3 | 3 | 3 | 3 | 1N | 2 | Mature | 40+ | C | Good overall condition | None | 3.9 | 47.8 |
| T62 | Conifer | 8 | S | 350 | 3 | 3 | 3 | 3 | 1E | 1.5 | Mature | 40+ | C | Good overall condition | None | 4.2 | 55.4 |
| T63 | Conifer | 8 | S | 325 | 3 | 2.5 | 3 | 3 | 1N | 0.5 | Mature | 40+ | C | Good overall condition | None | 3.9 | 47.8 |
| T64 | Conifer | 8 | S | 350 | 3 | 3 | 3 | 3 | 1N | 2 | Mature | 40+ | C | Good overall condition | None | 4.2 | 55.4 |
| T65 | Conifer | 8 | S | 400 | 3 | 3 | 3 | 3 | 3N | 0.5 | Mature | 40+ | C | Good overall condition | None | 4.8 | 72.4 |
| T66 | Tulip tree | 14 | S | 675 | 5 | 5 | 5 | 5 | 3S | 4 | Early Mature | 40+ | B | Good overall condition, damage to lowe limb, minor deadwood & hung up limb may be safety concern | Remove Deadwood & hanger, monitor condition | 8.1 | 206.1 |
| T67 | Horse Chestnut | 10 | S | 525 | 4 | 3 | 3 | 3 | 2N | 4 | Mature | 30 | C | Showing signs of decline, bleeding on main stem, minor deadwood | Monitor condition | 6.3 | 124.7 |
| T68 | Conifer | 9 | S | 400 | 3 | 3 | 3 | 3 | 2E | 2 | Mature | 40+ | C | Good overall condition | None | 4.8 | 72.4 |
| T69 | Lime | 20 | S | 525 | 5 | 5 | 5 | 5 | 2E | 2 | Mature | 40+ | B | Good overall condition, minor deadwood present | Remove Deadwood | 6.3 | 124.7 |
| T70 | Lime | 16 | S | 300 | 3 | 2 | 4 | 2 | 2E | 2 | Young | 40+ | C | Good overall condition | None | 3.6 | 40.7 |

### 2.4.2 Glossary of Terms

| Code | Definition |
|---|---|
| **ID** | Identification on position plan |
| **Name** | Common species name |
| **H/T** | Current tree height |
| **Stems** | Single or Multiple stems |
| **Dia** | Diameter of stem at 1.5m above ground (mm) |
| **Canopy** | Canopy measurements N,E,S & W |
| **Crown Height** | Height of lowest part of crown |
| **First Branch** | Height and direction of first branch |
| **Age** | Current age |
| **Yrs** | Approximate years of life remaining |
| **Cat** | Category of importance in line with current British Standards |
| **Obs** | Observations |
| **Recs** | Recommendations |
| **RPA (r)** | Root protection area (approximate area of roots Radius of circle) |
| **RPA (a)** | Root protection area (approximate area of roots Area of circle) |

### 2.4.3 Tree Survey Methodology

Trees, tree groups and woodlands have been considered following evaluation into one of four categories (U, A, B, C) based on tree quality as outlined in British Standard 5837 (2012) which has been followed. Categorisation of trees, following the British Standard, gives an indication as to the trees' importance in relation to the site and the local landscape and also, the overall value and quality of the existing tree stock on site. This allows for informed decisions to be made 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. In the categories A, B, C which collectively deal with trees that should be a material consideration in the development process, there are three sub-categories which are intended to reflect arboricultural, landscape and cultural values respectively. Category U trees are those which would be lost in the short-term for reasons connected with their poor physiological or structural condition. They are, for this reason, not usually considered in the planning process.

In assigning trees to the A, B or C categories the presence of any serious disease or tree related hazards are 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, even if they are otherwise of considerable value.

Category (A) – trees whose retention is most desirable and is 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:

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);

Trees, groups or woodlands 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); and

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

Category (B) – are 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:

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;

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; and

Trees with clearly identifiable conservation or other cultural benefits.

Category (C) – are trees that could be removed to facilitate the development 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 150mm and may comprise:

Trees not qualifying in higher categories;

- 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; and
- Trees with very limited conservation or other cultural benefits.
- Category (U) – trees for removal are those trees in such a condition that any existing value would be lost within 10 years and which should in the current context be removed for reasons of sound arboricultural management. Trees within this category are:
- 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;
- Trees that are dead or are showing signs of significant, immediate or irreversible overall decline; and
- Trees infected with pathogens of significance to the health and or/safety of other trees nearby trees or very low-quality trees suppressing adjacent trees of better quality.

Species has been recorded by common name and recorded as such in the Arboricultural Data schedule. Height has been estimated in meter and stem diameters have been measured at 1.5 metres above ground level and recorded in millimetres. Crown spreads have been measured in half metres and taken to the point of greatest spread unless the crown has presented a pronounced asymmetrical form and therefore measurements have been taken for the four cardinal points. The measurements have always been considered in the following sequence, North, East, South, and West, and therefore appear as such within the Tree Survey Schedule.

In the assessment particular consideration has been given to the following when deciding the most appropriate British Standard Category and Sub-Category allocation:

- the health, vigour and condition of each tree;
- the presence of any structural defects in each tree and its life expectancy;
- the size and form of each tree and its suitability within the context of the proposed scheme; and

- the location of each tree relative to existing site features, e.g. its value as a screen or as a skyline feature.
- Age class is assessed according to the age class categories referred to in BS 5837.
- Y: Young trees up to five years of age;
- SM: Semi-mature, trees less than 1/3 life expectancy;
- EM: Early mature, trees 1/3 – 2/3 life expectancy;
- M: Mature trees over 2/3 life expectancy;
- OM: Over mature – declining or moribund trees of low vigour; and
- V: Veteran - Characteristics have been noted where a tree exhibits certain characteristic features of veteran trees.

Major defects or diseases and relevant observations have also been recorded under Structural Condition. The assessment for structural condition has included inspection of the following defects:

- The presence of fungal fruiting bodies around the base of the tree or on the stem, as they could possibly indicate the presence of possible internal decay;
- Soil cracks and any heaving of the soil around the base indicating possible root plate movement;
- Any abrupt bends in branches and limbs resulting from past pruning, as it may be an indication of internal weakness and decay;
- Tight or weak 'V' shaped unions and co-dominant stems;
- Hazard beam formations and other such biomechanical related defects (as described by Claus Mattheck, Body Language of Trees HMSO Research for Amenity Trees No. 4 1994);
- Cavities as a result of limb losses or previous pruning;
- Broken branches;
- Storm damage;
- Canker formations;
- Loose bark;
- Damage to roots;
- Basal, stem or branch / limb cavities;
- Crown die-back;
- Abnormal foliage size and colour;
- Any changes to the timing of normal leaf flush and leaf fall patterns; and
- Other pathological diseases affecting any part of the tree.

Major defects or diseases and relevant observations have also been recorded. Dead wood has been defined as the following:

- Twigs and small branch material up to 5cm in diameter;
- Minor dead wood 5cm to 10cm in diameter; and
- Major dead wood 10cm in diameter and above.

The survey was completed from ground level only, aerial inspection of trees was not undertaken. Investigations as to the internal condition of a tree have not been undertaken. Further investigations of this type can be made and have been recommended where it has been considered necessary, within the report although these investigations are beyond the scope of this report.

Evaluation of the trees condition given within this assessment applies to the date of survey and cannot be assumed to remain unchanged. It may be necessary to review these within 12 months, in accordance with sound arboricultural practice.

The individual positions of trees and groups of trees recorded in the Tree Survey Schedule. have been shown on the Tree Constraints Plan. The positions of trees are based on a topographical / land survey supplied by the development and client in dwg. format for the purpose of plotting the trees.

The Root Protection Areas (RPA) to be required by the individual and groups of trees are indicated by the Tree Constraints element of the above plans. The Root Protection Areas are formulated as described below.

Below ground constraints to future development is represented by the area surrounding the tree that contains sufficient rooting volume to ensure survival of the tree, which need protecting in order for the tree to be incorporated into any future scheme, without adverse harm to the tree or structural integrity of buildings. This is referred to as the RPA and is shown as a circle of a given radius.

The circle may be modified in shape to maintain a similar total area depending on the presence of surrounding obstacles. Where groups of trees have been assessed, the RPA has been shown based on the maximum sized tree in any one group and so would automatically exceed the RPA's required for many of the individual specimens within the group. An RPA is equivalent to a circle with a radius 12x the stem diameter for single stem trees and 10x the basal diameter for trees with more than one stem arising less than 1.5 meters above ground level.

### *2.4.4 TPO's and Conservation Areas*

An investigation into the relevant legal protection of the trees through Hinckley & Bosworth Borough Council revealed that the Site lies WITHIN a Conservation Area. There are no Tree Preservation orders.

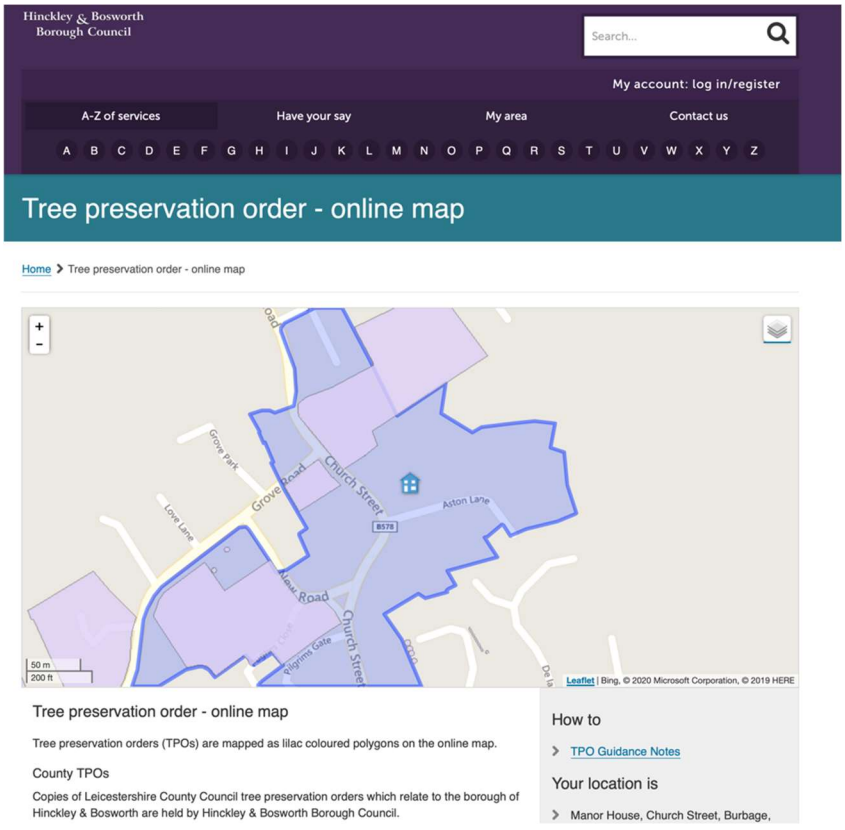



*Figure 2: Location of Tree's with TPO*

## 2.5 Hedgerows

There are 3 main hedgerows within the site.

H1. Holly 3m height and clipped. Average stem dia 75mm giving an RPA on either side of 900mm.

H2. Conifer 4m height and clipped. Average stem dia 100mm giving an RPA on either side of 1200mm.

H3. Laurel 2.5m height. Average stem dia 100mm giving an RPA on either side of 1200mm.

## 2.6 Conclusion

Trees categorised, as C trees could be considered on their merit or could be removed to facilitate the development. Trees categorised as B should be retained where possible, with regard to incorporating them into the new scheme. Category A trees should be conserved and protected by incorporation into any proposed scheme. Attention should be drawn to the Root Protection Areas depicted in Magenta for all retained trees (See Tree Constraints Plan).

The information within this report should be used to form the basis for any planning proposals. Regard should be given to the tree constraints both above and below ground. The green canopy around each tree shows the extent of the canopy and the magenta circle denotes the Root Protection Area RPA and should be avoided to satisfy current British Standards and planning advice.

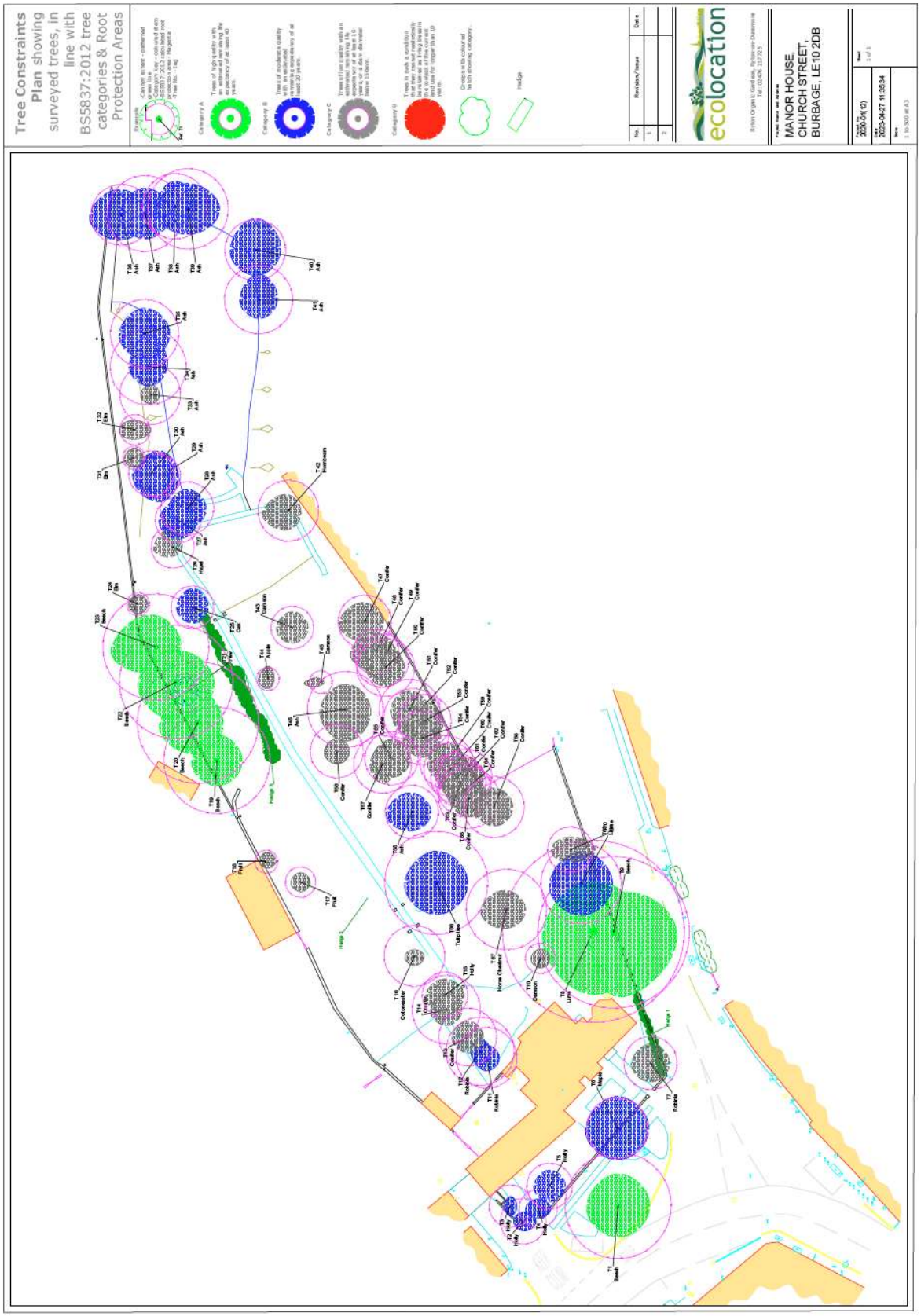
This report has been written in accordance with BS 5837. If planning permission is granted, further works would be required to detail mitigation and protection measures.

Any practical work should be carried out by a competent contractor with the relevant insurance and experience. The contractor should carry out all tree works to BS 3998 *Recommendations for Tree Work* (2010) as modified by more recent research.

Reference should be made to the Wildlife and Countryside Act (1981), protection of bird and bat species, European Protected Species legislation and local planning policy.

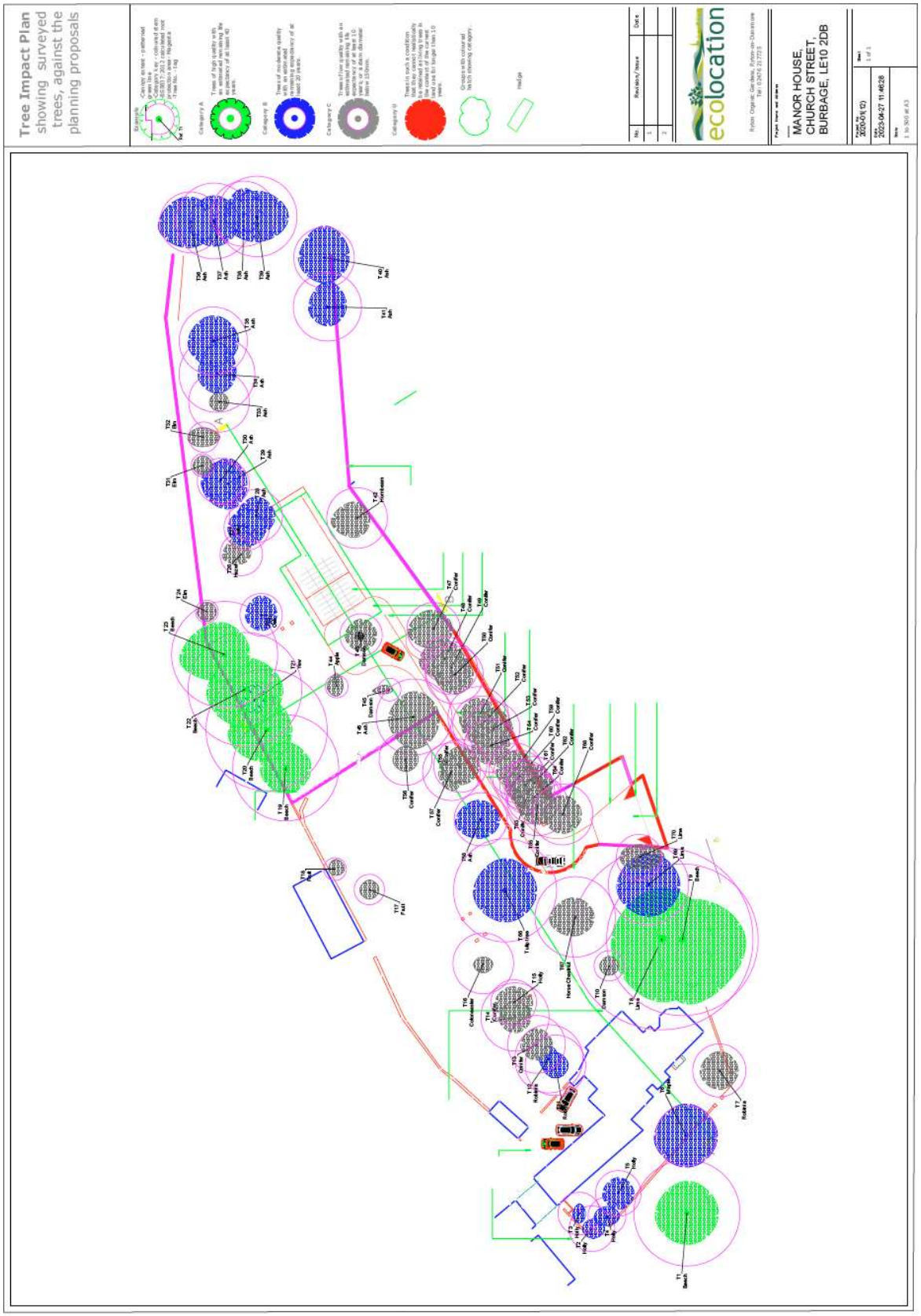
## 3 Tree Constraints Plan

PDF below, not to scale. Refer to scaled AutoCad drawing for measurements.



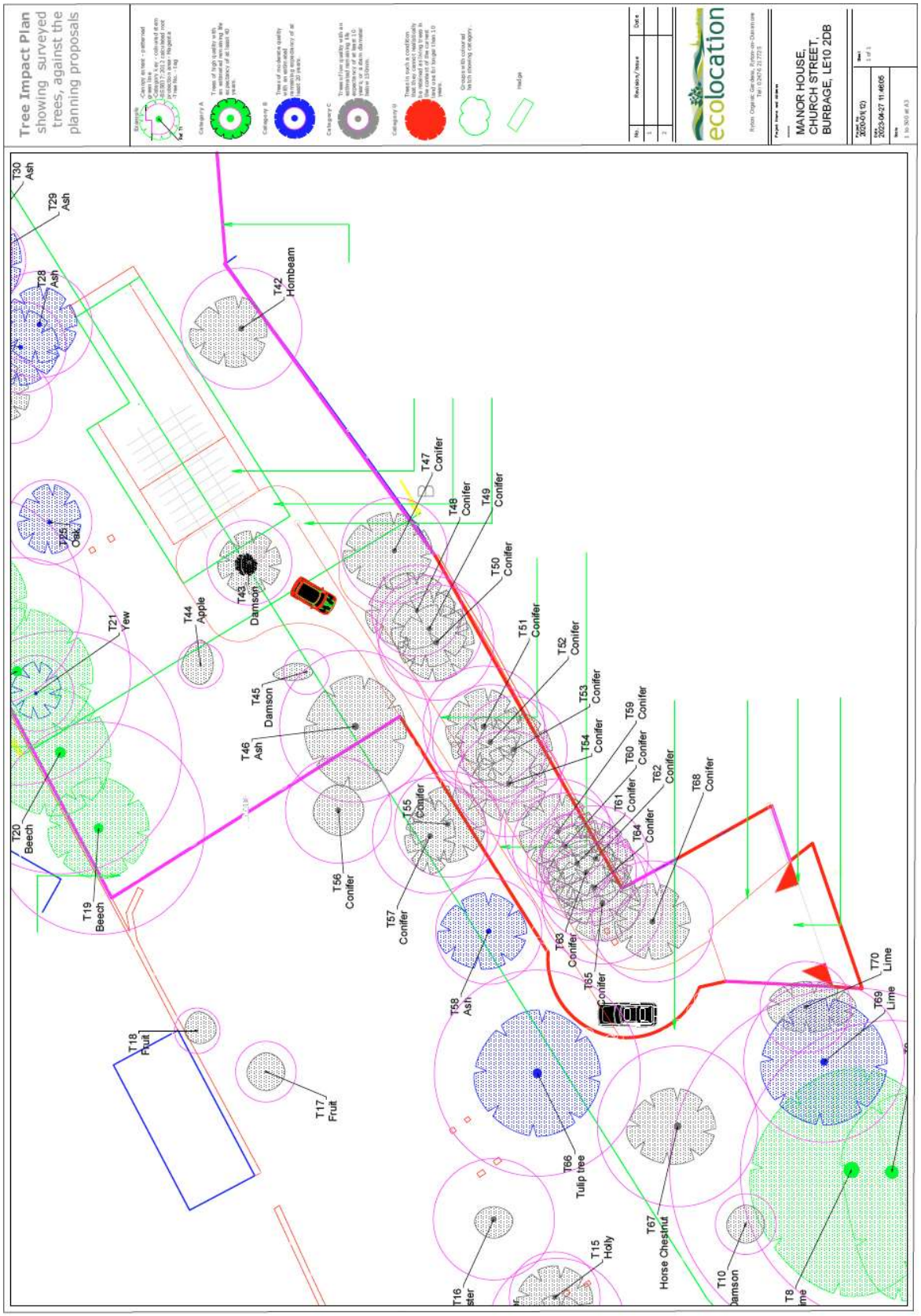
# 4 Tree Impact Plan

PDF below, not to scale. Refer to scaled AutoCad drawing for measurements.



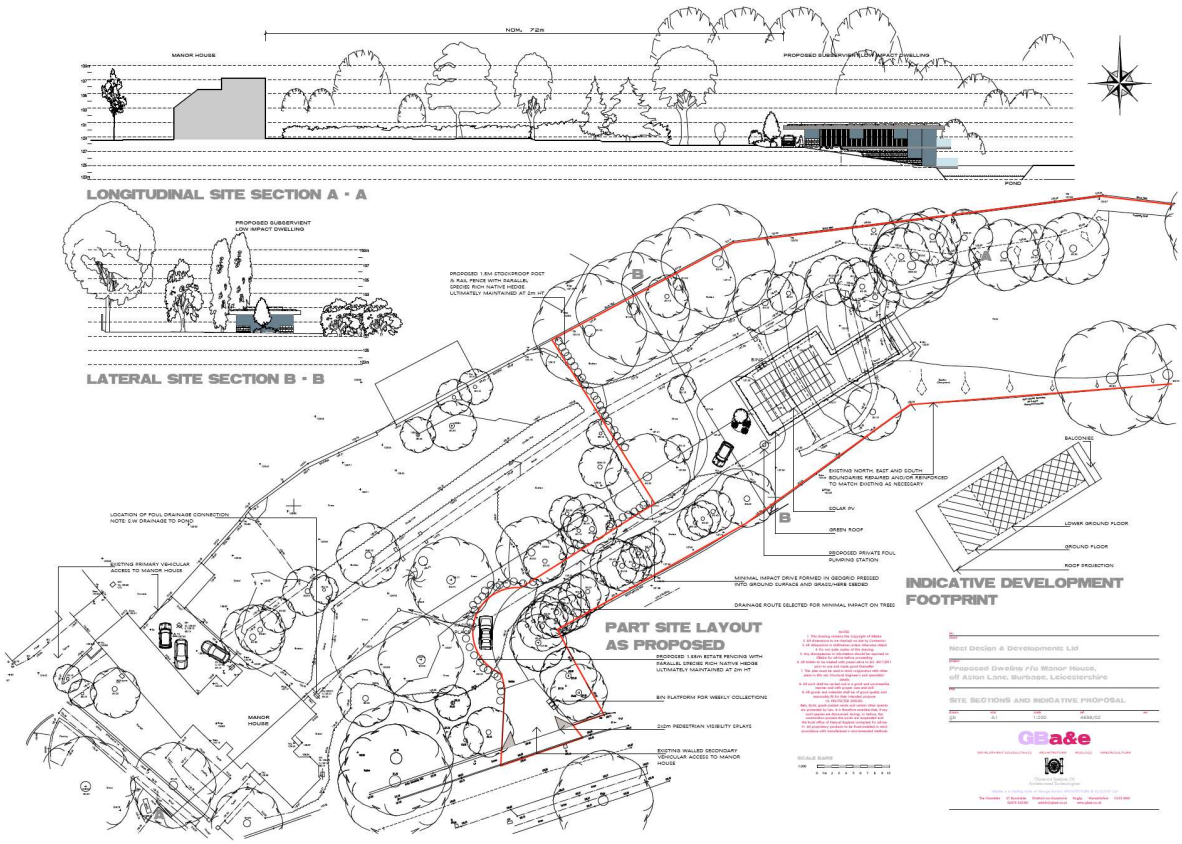
# 5 Tree Impact Plan 2

PDF below, not to scale. Refer to scaled AutoCad drawing for measurements.



# 6 Impact Assessment

The proposals have been assessed against the tree constraints. The design has been implemented to safeguard the important trees within and adjacent to the site.




*Site Sections and Indicative Proposal*

The foundations of the proposed building will be located outside any RPA, with the exception of a very minor incursion into the RPA of T28.

T43 Cat C tree will be removed to facilitate safe and practical working within the site.

The access driveway will be located close to retained trees and a 3D geogrid 'No dig' solution will be used as a load spreading system which will not require excavation within the root areas.

The grid will utilize the existing topsoil and be seeded with grass so as to retain the permeability for water and oxygen, without compaction or need for impervious surfaces.

Some crown lifting of conifer trees along the route may be required, but is not seen as detrimental to the specimens.

All Cat A trees will be unaffected.

Further protection measures will be put in place to prevent root compaction and potential impact, by way of fencing and construction exclusion zones.

## Appendix 1: List of Common and Scientific Tree Names

| | | | |
|---|---|---|---|
| Ash | *Fraxinus excelsior* | Lodgepole pine | *Pinus contorta* |
| Aspen | *Populus tremula* | Lombardy poplar | *Populus nigra* var. *italica* |
| Atlas cedar | *Cedrus atlantica* | London plane | *Platanus x hispanica* |
| Austrian pine | *Pinus nigra* | Maritime pine | *Pinus pinaster* |
| Bay willow | *Salix pentandra* | Midland thorn | *Crataegus laevigata* |
| Beech | *Fagus sylvatica* | Monkey puzzle | *Araucaria araucana* |
| Bird cherry | *Prunus padus* | Monterey cypress | *Cupressus macrocarpa* |
| Black cottonwood | *Populus trichocarpa* | Monterey pine | *Pinus radiata* |
| Black poplar | *Populus nigra* | Norway maple | *Acer platanoides* |
| Black walnut | *Juglans nigra* | Norway spruce | *Picea abies* |
| Box | *Buxus sempervirens* | Oriental plane | *Platanus orientalis* |
| Caucasian fir | *Abies nordmanniana* | Pedunculate oak | *Quercus robur* |
| Cedar of Lebanon | *Cedrus libani* | Red alder | *Alnus rubra* |
| Coast redwood | *Sequoia sempervirens* | Red oak | *Quercus rubra* |
| Common alder | *Alnus glutinosa* | Robusta poplar | *Populus x robusta* |
| Common juniper | *Juniperus communis* | Rowan | *Sorbus aucuparia* |
| Common lime | *Tilia x vulgaris* | Sallow (Goat willow) | *Salix caprea* |
| Common silver fir | *Abies alba* | Scots pine | *Pinus sylvestris* |
| Common walnut | *Juglans regia* | Sessile oak | *Quercus petraea* |
| Corsican pine | *Pinus nigra* | Silver birch | *Betula pendula* |
| Crab apple | *Malus sylvestris* | Sitka spruce | *Picea sitchensis* |
| Crack willow | *Salix fragilis* | Small-leaved lime | *Tilia cordata* |
| Cricket-bat willow | *Salix alba*, var *caerulea* | Smooth-leaved elm | *Ulmus carpinifolia* |
| Douglas fir | *Pseudotsuga menziesii* | Southern beech | *Nothofagus antarctica* |
| English elm | *Ulmus procera* | Swamp cypress | *Taxodium distichum* |
| Eucalypts | *Eucalyptus* species | Swedish whitebeam | *Sorbus intermedia* |
| European larch | *Larix decidua* | Sweet chestnut | *Castanea sativa* |
| Field maple | *Acer campestre* | Sycamore | *Acer pseudoplatanus* |
| Giant fir | *Abies grandis* | Turkey oak | *Quercus cerris* |
| Grey alder | *Alnus glutinosa* | Wellingtonia | *Sequoiadendron giganteum* |
| Grey poplar | *Populus x canescens* | Western hemlock | *Tsuga heterophylla* |
| Hawthorn | *Crataegus monogyna* | Western red cedar | *Thuja plicata* |
| Hazel | *Corylus avellana* | White poplar | *Populus alba* |
| Holly | *Ilex aquifolium* | White willow | *Salix alba* |
| Holm oak | *Quercus ilex* | Whitebeam | *Sorbus aria* |
| Hornbeam | *Carpinus betulus* | Wild cherry (Gean) | *Prunus avium* |
| Horse chestnut | *Aesculus hippocastanum* | Wild service tree | *Sorbus torminalis* |
| Japanese larch | *Larix kaempferi* | Wych elm | *Ulmus glabra* |
| Large-leaved lime | *Tilia platyphyllos* | Yew | *Taxus baccata* |
| Lawson cypress | *Chamaecyparis lawsoniana* | Tulip Tree | *Liriodendron tulipfera* |

## Appendix 2: Photographs

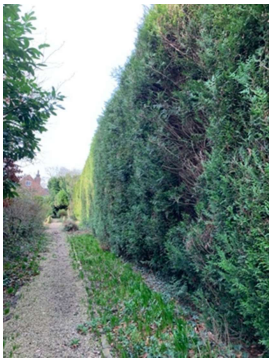
T1

T6

T's 8 & 9

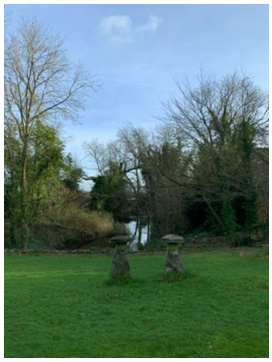
T9 decay in stem

T's 19 – 22



H 2

T's 43 – 45



T's 26 - 42

59 – 65

T66

T67

T's 69 & 70