



Gladman Developments

**South Newington Road, Bloxham**

**Arboricultural Assessment**

March 2019

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## 1.0 INTRODUCTION

- 1.1 This report has been prepared by FPCR Environment and Design Limited on behalf of Gladman Developments to present the findings of an Arboricultural Assessment and survey of trees located at land to the west of South Newington Road, Bloxham (hereafter referred to as the site), OS Grid Ref SP 4236 3532 as shown in Figure 1. The initial survey was carried out on 27<sup>th</sup> October 2016, however due to the time lapse of over 1 year, the site was re-surveyed on 13<sup>th</sup> April 2018.
- 1.2 The tree survey and assessment of existing trees has been carried out in accordance with guidance contained within British Standard 5837:2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations*' (hereafter referred to as BS5837). The guidelines set out a structured assessment methodology to assist in determining which trees would be deemed either as being suitable or unsuitable for retention.
- 1.3 The guidance also provides recommendations for considering the relationship between existing trees and how those trees may integrate into designs for development; demolition operations and future construction processes so that a harmonious and sustainable relationship between any retained trees and built structures can be achieved.
- 1.4 The purpose of the report is therefore to firstly present the results of an assessment of the existing trees' arboricultural value, based on their current condition and quality and to secondly provide an assessment of impact arising from the proposed development of the site.
- 1.5 This report has been produced to accompany a planning application for outline planning permission for a residential development comprising a central developable area accessed via an existing farm/access track leading off South Newington Road and adjoining an internal primary road layout bisecting the developable area. Flood attenuation shall be provided through the creation of SuDS along the northern boundary of the site whilst the majority of the existing tree and vegetative cover, much of which shall be retained, shall be incorporated into the final scheme and further enhanced by new structured tree and hedgerow planting.
- 1.6 The site comprises of a large area of grassland currently managed as pasture for cattle. The landscape beyond the site is predominantly rural, comprising largely of arable land and pasture. Residential areas associated with Bloxham are located outside the site to the north and a recreation ground is adjacent to the site to the north-east. A public right of way runs along the sites northern boundary before crossing diagonally across the centre of the site to the western boundary.
- 1.7 The presence of any Tree Preservation Orders that may affect the site has yet to be confirmed by Cherwell District Council. Before any tree works are undertaken confirmation of the presence of the statutory constraints should be sought from the Local Authority. The site does not fall within a Conservation Area.

## Planning Policy

### National Planning Policy Framework 2019

- 1.8 National Planning Policy is defined by the National Planning Policy Framework (NPPF). This sets out the Government's most current and up to date planning policies for England and how these should be applied. The current NPPF is dated February 2019.
- 1.9 Paragraph 11 of the NPPF states that there is a presumption in favour of sustainable development and states that for decision making, the LPA should be '*c) approving development proposals that accord with an up-to-date development plan without delay*'. In the absence of a development plan or the development plan is out of date, the acting LPA should grant planning consent so far as the development proposals do not breach the policies and guidance outlined in the NPPF.
- 1.10 In relation to arboriculture, the NPPF also states that:
- *175(c) 'development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists';*  
and provides specific guidance that:
  - *175(d) 'development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity'.*
- 1.11 Examples of what is deemed to be '*wholly exceptional*' are included within Footnote 58 and provides the examples of '*infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat*'.

## 2.0 METHODOLOGY

- 2.1 The survey of trees has been carried out in accordance with the criteria set out in Chapter 4 of BS5837. The survey has been undertaken by a suitably qualified and experienced arboriculturalist and has recorded information relating to all those trees within the site and those adjacent to the site which may be of influence to any proposals. Trees were assessed for their arboricultural quality and benefits within the context of the proposed development in a transparent, understandable and systematic way.
- 2.2 Trees have been assessed as groups where it has been determined appropriate. The term group has been applied where trees form cohesive arboricultural features either aerodynamically, visually or culturally including biodiversity or habitat potential for example parkland or wood pasture. An assessment of individual trees within groups has been made where a clear need to differentiate between them, for example, in order to highlight significant variation between attributes including physiological or structural condition or where a potential conflict may arise.



- 2.3 Trees have been divided into one of four categories based on Table 1 of BS5837, '*Cascade chart for tree quality assessment*'. For a tree to qualify under any given category it should fall within the scope of that category's definition (see below). Category U trees are those which would be lost in the short term for reasons connected with their physiology or structural condition. They are, for this reason not considered in the planning process on arboricultural grounds. Categories A, B and C are applied to trees that should be of material considerations in the development process. Each category also having one of three further sub-categories (i, ii, iii) which are intended to reflect arboricultural, landscape and cultural or conservation values accordingly.
- 2.4 **Category (U) – (Red):** Trees which are unsuitable for retention and are 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 within this category are:
- Trees that have a serious irremediable structural defect such that their early loss is expected due to collapse and includes trees 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.
  - Trees that are infected with pathogens of significance to the health and/ or safety of other nearby trees or are very low quality trees suppressing adjacent trees of better quality.
  - Certain category U trees can have existing or potential conservation value which may make it desirable to preserve.
- 2.5 **Category (A) – (Green):** Trees that are considered for retention and are of high quality with an estimated remaining life expectancy of at least 40 years with potential to make a lasting contribution. Such trees may comprise:
- Sub category (i) trees that are particularly good examples of their species, especially if rare or unusual, or are essential components of groups such as formal or semi-formal arboricultural features for example the dominant and/or principal trees within an avenue.
  - Sub category (ii) trees, groups or woodlands of particular visual importance as arboricultural and / or landscape features.
  - Sub category (iii) trees, groups or woodlands of significant conservation, historical, commemorative or other value for example veteran or wood pasture.
- 2.6 **Category (B) – (Blue):** Trees that are considered for retention and are of moderate quality with an estimated remaining life expectancy of at least 20 years with potential to make a significant contribution. Such trees may comprise:
- Sub category (i) trees that might be included in category A but are downgraded because of impaired condition for example the presence of significant though remediable defects, including unsympathetic past management and storm damage.
  - Sub category (ii) 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.
  - Sub category (iii) trees with material conservation or other cultural value.

2.7 **Category (C) – (Grey):** Trees that are considered for retention and are of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm. Such trees may comprise:

- Sub category (i) unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.
- Sub category (ii) trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value or trees offering low or only temporary / transient screening benefits.
- Sub category (iii) trees with no material conservation or other cultural value.

### **Veteran Trees**

2.1 Veteran trees and Ancient Woodland are important components of the landscape, their importance can be for a number of reasons including that of their ecological, social, cultural and historic value. Veteran Trees and Ancient Woodlands are material considerations within the planning process and their importance is specifically recognised within the National Planning Policy Framework 2019.

2.2 This assessment, and the criteria for identification of attributable veteran features, has been based on currently published guidance and resources. Reference has been made to *Reed, H. (2000). Veteran Trees: A Guide to Good Management. English Nature* and more recently *Lonsdale, D (ed.) (2013) Ancient and other Veteran Trees: Further Guidance on Management, The Tree Council & Ancient Tree Forum*. Reference has also been made to the *Specialist Survey Methodology (SSM)* which provides a standardised framework for recording veteran trees.

2.3 Where this assessment has identified veteran trees, further survey work of those trees and their communities will be required. From an ecological perspective veteran trees provide a rare and specialist niche habitat and therefore preservation of this habitat is considered highly important. Veteran trees and many of their associated specialised species are becoming increasingly rare within the landscape and therefore some veteran tree landscapes and their associated species are now protected, both nationally and Europe wide through the Natura 2000 Directive.

### **Tree Schedule**

2.4 Appendix A presents details of any individual trees, groups and hedgerows found during the assessment including heights, diameters at breast height, crown spread (given as a radial measurement from the stem), age class, comments as to the overall condition at the time of inspection, BS5837 category of quality and suitability for retention and the root protection area.

2.5 General observations particularly of structural and physiological condition for example the presence of any decay and physical defect and preliminary management recommendations have also been recorded where appropriate.

### **Hedgerows**

2.6 For the purposes of this assessment, a hedgerow is described as any boundary line of trees or shrubs less than 5m wide at the base and are managed under a regular pruning regime.

Hedgerows and substantial internal or boundary hedges (including evergreen screens) have been recorded including lateral spread, height and stem diameter(s). Where trees are present within a hedgerow that are significantly different in character from the remainder, these have been identified and recorded separately.

- 2.7 A tree survey in accordance with BS5837 does not assess hedgerows against the Hedgerow Regulations 1997 or specifically from an ecological perspective, and is outside the scope of this assessment.

### **Other Considerations**

- 2.8 It may be necessary during detailed design to undertake further assessment and accurate positioning of woody species within hedgerows and tree groups to assist structural calculations for foundation design of structures in accordance with current building regulations. Knowledge of soil type was not known at the time of this tree assessment. If a current soil survey of the site has taken place then it must be read in conjunction with the results of the tree survey.
- 2.9 The exact position of individual trees or species included as part of a tree group or hedgerow should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths in accordance with NHBC Chapter 4.2 Building near Trees.

### **Conditions of Tree Survey**

- 2.10 The survey was completed from ground level only and from within the boundary of the site. Aerial tree inspections or the internal condition of the stem/s or branches were not undertaken at this stage as this level of survey is beyond the scope of the initial assessment. Evaluation of tree 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.

### **Site Plans**

- 2.11 Figure 1 identifies the assessment area including trees beyond the application boundary that may be affected by future development of the site and should not be considered as the application boundary.
- 2.12 The individual positions of trees and groups have been shown on the Tree Survey Plan, Figure 2. The positions of trees are based on a topographical / land survey, as far as possible, supplied by the client.
- 2.13 Where topographical information has not identified the position of trees and hedgerows, their relation to any existing surrounding features has been plotted using a global positioning system and aerial photography to provide approximate locations. The crown spread, root protection area and shade pattern (where appropriate) are also indicated on this plan.
- 2.14 As part of this assessment, a Tree Retention Plan, Figure 3 has been prepared to show the proposed layout in relation to the existing tree cover allowing an assessment of any potential conflicts. The plan also identifies which trees would be required to be removed or retained as part of the proposed development.

- 2.15 Figure 4 shows the location of the detailed access position in relation to the surrounding tree cover allowing the identification of any potential conflicts through implementation of the site access.

### Tree Constraints and Root Protection Areas

- 2.16 Below ground constraints to future development are represented by the area surrounding the tree containing sufficient rooting volume for the specimen to have the best chance of survival in the long term which is identified as the root protection area (RPA). The RPA has been calculated in accordance with section 4.6 of BS5837 and requires suitable protection in order for the tree to be successfully incorporated into any future scheme. Where applicable the shape of the Root Protection Area has been modified to take into account the presence of any nearby obstacles (existing or past) which may have restricted root growth and the likely root distribution i.e. the presence of hard standing, structures and underground apparatus.
- 2.17 Where groups of trees have been assessed, the Root Protection Area has been shown based on the maximum sized tree in any one group and so may exceed the Root Protection Area required for some of the individual specimens within the group. Further detailed inspection of the individual trees forming a group may be required where development impacts upon the group.

Above ground constraints such as the current crown spread of the trees and an illustration of the shade pattern (where appropriate) have been considered and identified within the Tree Survey Plan and Tree Retention Plan indicates their potential area of shading influence.

## 3.0 RESULTS

- 3.1 A total of thirty-two individual trees, seven groups of trees and eight hedgerows were surveyed as part of the Arboricultural Assessment. Trees were surveyed as individual trees and groups of trees where examples are clearly present as per the description. Refer to Figure 2 – Tree Survey Plan (drwg.no 7503-A-02 – REV A) and Appendix A – Tree Schedule for full details of the trees included in this assessment.
- 3.2 The table below summarises the trees assessed. Several of the trees have been discussed in more detail following the table, owing to their physical condition or arboricultural significance.

### Results Summary

**Table 1: Summary of Trees by Retention Category**

	Individual Trees	Total	Groups of Trees	Total
Category U - Unsuitable		0		0
Category A (High Quality / Value)	T15, T18, T21, T22, T31	5		0
Category B (Moderate Quality / Value)	T2, T3, T4, T12, T13, T16, T17, T19, T20, T23, T28, T32	12	G2, G3, G5, G7, H6	5
Category C (Low Quality / Value)	T1, T5, T6, T7, T8, T9, T10, T11, T14, T24, T25, T26, T27, T29, T30	15	G1, G4, G6, H1, H2, H3, H4, H5, H7, H8	10

- 3.3 Tree stock across the site comprised predominantly of moderate, Category B, to low quality, Category C, individual tree specimens, groups of trees and hedgerows with the exception of six category A (high quality) trees, namely T15, T18, T21, T22 and T31. These trees were either considered to be fine examples of their species (Ai) or, in the case of T18 and T31, to be of high cultural, historical and ecological value (Aiii) demonstrating a number of characteristic features associated with aging and veteran trees.
- 3.4 Full confirmation of their classification as Veteran trees will need to be formerly decided following a more detailed Veteran Tree Assessment.
- 3.5 None of the individual trees or groups of trees assessed was regarded as being unsuitable for retention (category U) regardless of future development proposals.
- 3.6 Ash *Fraxinus excelsior* and English oak *Quercus robur* were the most abundant free standing individual tree specimens surveyed on site, being those species typically found in open grown agricultural environments. Species diversity existed in the form of occasional individual crack willow *Salix fragilis* and field maple *Acer campestre* with the hedgerows in their majority comprising elder *Sambucus nigra*, hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*.
- 3.7 The age group of the trees within the confines of the site varied, yet in the majority were of an early mature to mature age. Although the site was considered to host a healthy tree population with good age diversity, which includes trees that could reach maturity and replace those with a limited useful life expectancy remaining, many of these early mature trees shall fail to succeed if they are not managed appropriately.
- 3.8 The northern and western boundaries each host the densest areas of tree cover, in particular housing a number of high quality (category A) individual trees, namely T21, T22, two English oak, and T31, a mature Ash which had all the attributes of a veteran tree. Veteran trees provide niche habitats which cannot be offered by the majority of trees within our landscapes and therefore are worthy of stronger consideration and held with higher importance within this assessment.
- 3.9 The tree population assessed can be subdivided into two clearly definable areas for ease of interpretation of the results of the survey. These areas can be broadly defined as those trees within the eastern half of the site and those trees within the western half of the site, divided by a centrally demarking single hedgerow (H4).

### Eastern Tree Population

- 3.10 Situated along the eastern boundary, outside the site along the edge of the private driveway serving the adjoining residential property, a dense cluster of mixed species tree cover (T1, T2, T3, T4, T5, T6 and tree group G1) were observed. Comprised of early mature to mature examples of hawthorn, English elm *Ulmus procera*, Ash, common lime *Tilia x europaea* and field maple *Acer campestre* the trees offered mostly moderate quality and were regarded as category B trees, with the exception of T1, T5 and T6 (category C).
- 3.11 T5 and T6 were the largest of the six specimens with T5 possessing five stems from close to the base, each measuring on average 230mm diameter at 1.5m above ground level, whilst T6, a field maple which had a stem considered to be large for its species of 656mm. Each of these trees offered a fair overall condition housing notable but remedial defects which included branch stubs,

minor dead wood, slightly suppressed crown forms, caused by the density of surrounding tree cover, and dense ivy which almost entirely restricted closer inspection of the main stem.

- 3.12 Stood within the garden of the single residential property and falling within the confines of the site were T7 and T8, a semi-mature and ornamental variety of Sycamore *Acer pseudoplatanus* 'Brilliantissimum' closely neighboured by T8, a mature apple *Malus domestica*. T8 was regarded as being characteristic of its species in relation to its age, possessing a number of characteristic defects, notably branch socket cavities, minor dead branches and stubs throughout the crown and a number of pruning wounds which had failed to occlude. Regarded as being of a category C, each of the trees served limited arboricultural value, however served a purpose, as originally intended, as ornamental trees.
- 3.13 Further offsite tree cover was observed offering a variety of species and being categorised as a mixture of 'B' and 'C' grade trees. T3, T4, T6 and T11-T12 are all running along the ditch which runs along the site boundary. T3, T4, T12 and T13 were all classed as 'B' grade trees of moderate quality. To the west of T12, within 5m, was T13 a single hawthorn which again was notably a good example of its species within some minor lower stem bark wounds being the only significant observation to be recorded, as such T13 was regarded to be of moderate arboricultural quality (category B).
- 3.14 T15, T16, T17 and tree group G3 were each set within the neighbouring playing field, T15 being the most significant of the trees assessed was an early mature English oak which, as well as offering good landscape prominence making for an attractive and focal feature along a boundary otherwise relatively devoid of tree cover, was free from significant and inhibiting defects (category A).
- 3.15 The most significant tree observed within this area of the site was T18 a crack willow which possessed a stem that would be considered large for its species, measuring 1917mm diameter at 1.5m above ground level and whilst willow as a species are large upon maturity, a stem of 1917mm is significantly larger than the majority of these trees observed. Despite offering a fair to poor overall condition, notably due to the extent of decay along the length of the west side of the main stem and possessing a form which would be best described as a collapsed pollard with a number of the branches self-layering, T18 was regarded as being a strong candidate for veteran classification. As such, until further surveys confirm this, T18 should be adequately protected and therefore a high quality (category A iii) was applied.

### Western Tree Population

- 3.16 With the exception of T21 and T22 (both category A) and T23 (category B), the northern boundary was formed largely by the collective group of blackthorn, hawthorn and yew *Taxus baccata* identified as G6, an early mature to mature age of interlocking trees. Characteristic for their species and in their majority free from obvious defects, G6 was downgraded to a category C (low quality) due to offering limited value other than a natural boundary forming feature which offered buffering from the adjoining residential areas.
- 3.17 G7 formed almost the entirety of the sites western boundary. Species diversity, age and overall condition was more greatly varied to that of G6, with mature examples of ash and crack willow standing tall against the lower group of smaller and squat forms of the understorey of elder, hawthorn and occasional crab apple. Much of this lower group of trees formed the understorey

tree cover which comprised multiple stems from ground level with many of the trees giving the appearance that they had been previously under formal management, most likely as a hedgerow, with a lapse in management allowing for their development with broader and more individual crown forms. G7 is offering significant site screening to the site and so was categorised as 'B' grade.

- 3.18 Trees T24, T25, T26 and T27, a single field maple (T24) and three crack willow were each regarded as offering low arboricultural quality (category C), notably due to their poor overall forms, either multi-leadered or suppressed and asymmetrical, and as result offering limited value to develop into suitable examples of their species. T28 was the only example of a higher quality tree to that of its neighbours, offering a moderate quality (category B) being free from major defects and having developed with a uniform crown which offered good landscape prominence.
- 3.19 T31 was the most significant tree with the western portion of the site. A mature ash which exceeded 20m in height and which had formed with a slight asymmetrical crown directed to the north, T31 possessed a large stem for its species, measuring an estimated 1650mm diameter at 1.5m above ground level, a defining feature of an ash tree considered eligible as a veteran tree. Further attributable features were observed in the form of several large cavities, splits, seams and tears (hazard beams) along the length of numerous lower crown lateral branches. The central main stem, within the upper crown, had previously failed resulting in a large jagged remnant stub which appeared to be progressively hollowing and subsequently, allowing for cavity formation.
- 3.20 As a result of the stem measurement exceeding that which is required of ash trees for eligibility as a veteran and the number of attributable veteran features recorded, T31 was considered to be of high cultural, historical and ecological value (A iii).
- 3.21 In this instance T31 was considered as part of the initial survey and assessment to be eligible as a veteran, although this will need to be formerly decided following a more detailed Veteran Tree Assessment. At this stage this specimen will be adequately safeguarded.

#### **4.0 ARBORICULTURAL IMPACT ASSESSMENT**

- 4.1 The following paragraphs present a summary of the tree survey and discussion of particular trees and groups recorded in the context of any proposed development in the form of an Arboricultural Impact Assessment in accordance with section 5.4 of BS5837. Any final tree retentions will need to be reconciled with the advice contained within this report.
- 4.2 The AIA has been based upon the Development Framework and seeks to outline the potential impact that the proposals would have on the existing trees and vice versa. The proposals illustrate a residential development comprising a central developable area accessed via an existing farm/access track leading off South Newington Road and adjoining an internal primary road layout bisecting the developable area.
- 4.3 The majority of the existing tree and vegetative cover, much of which shall be retained, shall be incorporated into the final scheme and further enhanced by new structured tree and hedgerow planting. A large area of the western field parcel shall be retained as an area of public open space and will form part of the landscape scheme, being accessible to the residents through a

series of linking footpaths and enhanced further through the planting of new trees. This proposed future tree cover shall be of benefit to the wider local tree population.

- 4.4 Flood attenuation shall be provided through the creation of SuDS along the northern boundary of the site which shall be supported by new structured tree planting creating further opportunities for incidental open space and ecological habitat creation.
- 4.5 An overlay of the above layout has been incorporated in the Figure 3 - Tree Retention Plan (drwg.no.7398-A-03) to assist in identifying potential conflicts with the existing trees.
- 4.6 To facilitate the proposed development, it is recommended that H3 is removed in its entirety. The loss of a small area of vegetative tree cover should not be seen as a constraint to the proposals nor would it have a significant Arboricultural impact or considered to be at detriment to the wider tree population and landscape character of the site.
- 4.7 The proposals have been sympathetically designed to ensure the retention of the two individual trees regarded as offering veteran attributes, namely T18 and T31, implementing a scheme which adheres to their veteran RPA calculation to ensure they are adequately safeguarded. Veteran trees are valuable in that they possess historic connections to former landscapes; provide niche habitats considered rare and less abundant within our ever-evolving landscape as well as creating an attractive and interesting focal point for the wider amenity of the area.
- 4.8 Providing that the construction of the built element of the scheme avoids the RPA's of these trees and that any works close to these specimens are carried out under a prior approved Arboricultural Method Statement detailing supervision by a suitably qualified Arboricultural Consultant, the arboricultural impacts would be low and the likelihood of any unnecessary damage occurring would be avoided. This would ensure that the current health and vigour of each of these trees could be preserved.
- 4.9 For the future care and management of this aging/ transitional veteran situated within or close to the developable area, in order to retain it in a "safe" condition and, as far as practically possible, better guarantee its future survival, it is recommended that no pruning work is carried out at this point in time until a further more detailed assessment is undertaken. This assessment shall help determine the eligibility of T18 and T31 as a Veteran / Transitional Veteran trees which will influence their future management. The management plan will need to factor public safety as part of its recommendations.

### **New Tree Planting**

- 4.10 New tree planting will form an integral part of the new development however, proposals for new tree planting should be appropriate for the future use of the site and not just aim to improve the existing tree population.
- 4.11 As part of the development proposals an adequate quantity of structured tree planting has been demonstrated predominantly within or close to hard landscaped areas of car parking or alongside the primary access roads within the roadside verges. The purpose and function of this new tree planting should be understood from the start of any design stages so that key objectives from a landscape perspective can also be achieved.
- 4.12 The success of any landscaping scheme relies on an adequate provision of a high quality rooting environment within which trees can thrive and reach their full potential. Planting trees with due



care and consideration can, in the long term, provide a greater return on a schemes green investment and ensure trees remain healthy and grow to mature proportions.

- 4.13 Healthy mature trees integrate well into the built environment; increase the maturity of the landscape; help provide a natural green and leafy urban environment in which people would want to reside whilst also benefiting local wildlife.
- 4.14 The planting of trees within confined urban environments should consider the use of appropriately designed planting pits specifically engineered to promote tree health and longevity. The rooting environment will need to provide an adequate volume of quality soil for roots to suitably develop by calculating the amount of available soil volumes needed and selecting species whose mature size is compatible with the site. This is an integral component of the planning stage (Lindsey & Bassuk, 1991).
- 4.15 Wherever possible, following discussions with the developer and utility company's, common service trenches should be specified to minimise land take associated with underground service provision and facilitation access for future maintenance.
- 4.16 The landscaping scheme should consider the use of both native tree species (for their low maintenance requirements and nature conservation value) and ornamental species (for their contribution to urban design and amenity value). Species choices should be selected on the basis of their suitability for the final site use.
- 4.17 Furthermore, during the design process consultation should be made with the Local Planning Authority to obtain information on their tree strategy and incorporate the planting proposals with any local policies and initiatives and/or Biodiversity Action Plans (BAP).
- 4.18 Careful consideration would need to be given to the following: ultimate height and canopy spread, form, habit, density of crown, potential shading effect, colour, water demand, soil type and maintenance requirements in relation to both the built form of the new development and existing properties. Through careful species selection, the landscape scheme shall reduce the risk of trees being removed in the future on the grounds of nuisance. Nuisance can be perceived in a number of ways and vary from person to person however most commonly, within the context of trees, low overhanging branches, excessive shading, seasonal leaf fall and the misinformed perception that trees close to buildings cause damage.
- 4.19 Tree planting should be avoided where they may obstruct overhead power lines or cables. Any underground apparatus should be ducted or otherwise protected at the time of construction to enable trees to be planted without resulting in future conflicts.

### **Tree Management**

- 4.20 All retained trees should be subjected to sound arboricultural management as recommended within section 8.8.3 of BS5837 *Post Development Management of Existing Trees*, where there is a potential for public access in order to satisfy the landowner's duty of care. Additionally, inspections annually and following major storms should be carried out by an experienced arboriculturalist or arborist to identify any potential public safety risks and to agree remedial works as required.
- 4.21 All tree works undertaken should comply with British Standard 3998:2010 and should therefore be carried out by skilled tree surgeons. It would be recommended that quotations for such work

be obtained from Arboricultural Association Approved Contractors as this is the recognised authority for certification of tree work contractors.

- 4.22 All vegetation and, particularly, woody vegetation proposed for clearance should be removed outside of the bird-breeding season (March - September inclusive) as all birds are protected under the Wildlife and Countryside Act, 1981 (as amended) whilst on the nest. Where this is not possible, vegetation should be checked for the presence of nesting birds prior to removal by an experienced ecologist.

### **General Design Principles in Relation to Retained Trees**

- 4.23 An assessment of the distance of proposed development in relation to the calculated root protection area of retained trees should be made which will inform the final layout.
- 4.24 Ground investigation through the use of pneumatic excavation, such as an Air Spade and digging of trial pits, may be required should there be areas where it is not possible to modify the layout to avoid conflict with retained trees. Ground investigations would aim to determine the actual location of the physical roots without causing them damage in the process. Such an assessment would enable consideration of the practicality and suitability of certain 'tree friendly' construction methods and would better inform decision making for a design.
- 4.25 Further assessment of the impact to actual roots found during the ground investigations can then be made and solutions reached thus, greatly reducing any potential future impacts on retained trees whilst allowing the development to proceed and minimising risks to future tree health.
- 4.26 Ultimately the aim would be to reduce conflicts between trees and buildings and achieve successful tree retention.
- 4.27 The use of "no-dig" construction methods should be considered prior to decisions being made as to the removal of each tree concerned, where conflicts between trees identified for retention and the layout arise. Such methods of construction and the use of industry led specialist engineering solutions i.e. three dimensional "load bearing" cellular confinement systems can be used particularly in the case of carriageways, footways and driveways in order to avoid unnecessary losses of trees.
- 4.28 The routing of below ground services should also be considered with regard to the retained trees as part of a subsequent reserved matters application pursuant to layout. As recommended by the guidance given in section 7.7 of BS5837 services, where possible, should not encroach within the Root Protection Areas of retained trees. If below-ground services are proposed within a Root Protection Area, modifications to the alignment of the service route may need to be made in order to minimise adverse effects on root stability and overall tree health.
- 4.29 Consideration may also need to be given to the potential for tree roots of newly planted trees and hedgerows to affect or compromise the future services. As far as feasible, it would be preferable that proposed services near both the existing and any new planting should be ducted for ease of access and maintenance and grouped together to minimise any future disturbance.

## 5.0 TREE PROTECTION MEASURES

- 5.1 Retained trees will be adequately protected during works ensuring that the calculated root protection area for all retained trees can be appropriately protected through the erection of the requisite tree protection barriers. Measures to protect trees should follow the guidance in BS5837 and will be applied where necessary for the purpose of protecting trees within the site whilst allowing sufficient access for the implementation of the proposed layout. These have been broadly summarised below.

### General Information and Recommendations

- 5.2 All trees retained on site will be protected by suitable barriers or ground protection measures around the calculated RPA, crown spread of the tree or other defined constraints of this assessment as detailed by section 6 and 7 of BS5837.
- 5.3 Barriers will be erected prior to commencement of any construction work and before demolition including erection of any temporary structures. Once installed, the area protected by fencing or other barriers will be regarded as a construction exclusion zone. Fencing and barriers will not be removed or altered without prior consultation with the Project Arboriculturalist.
- 5.4 Any trees that are not to be retained as part of the proposals should be felled prior to the erection of protective barriers. Particular attention needs to be given by site contractors to minimise damage or disturbance to retained specimens.
- 5.5 Where it has been agreed, construction access may take place within the root protection area if suitable ground protection measures are in place. This may comprise single scaffold boards over a compressible layer laid onto a geo-textile membrane for pedestrian movements.
- 5.6 Vehicular movements over the root protection area will require the calculation of expected loading and the use of proprietary protection systems.
- 5.7 Confirmation that tree protective fencing or other barriers have been set out correctly should be gained prior to the commencement of site activity.

### Tree Protection Barriers

- 5.8 Tree protection fencing should be fit for the purpose of excluding any type of construction activity and suitable for the degree and proximity of works to retained trees. Barriers must be maintained to ensure that they remain rigid and complete for the duration of construction activities on site.
- 5.9 In most situations, fencing should comprise typical construction fencing panels attached to scaffold poles driven vertically into the ground. For particular areas where construction activity is anticipated to be of a more intense nature, supporting struts, acting as a brace should be added and fixed into position through the application of metal pins driven into the ground to offer additional resistance against impacts. Where site circumstances and the risk to retained trees do not necessitate the default level of protection an alternative will be specified appropriate to the level / nature of anticipated construction activity. The recommended methods of fencing specifications for this site have been illustrated in Appendix B.
- 5.10 It may be appropriate on some sites to use temporary site offices, hoardings and lower level barrier protection as components of the tree protection barriers. Details of the specific protection

barriers for the site can be provided should the application be approved, as part of a site specific Arboricultural Method Statement for a Reserved Matters application and in accordance with the guidance contained within BS5837.

#### **Protection outside the exclusion zone**

- 5.11 Once the areas around trees have been protected by the barriers, any works on the remaining site area may be commenced providing activities do not impinge on protected areas.
- 5.12 All weather notices should be attached to the protective fencing to indicate that construction activities are not permitted within the fenced area. The area within the protective barriers will then remain a construction exclusion zone throughout the duration of the construction phase of the proposed development. Protection fencing signs can be provided upon request.
- 5.13 Wide or tall loads etc should not come into contact with retained trees. Banksman should supervise transit of vehicles where they are in close proximity to retained trees.
- 5.14 Oil, bitumen, cement or other material that is potentially injurious to trees should not be stacked or discharged within 10m of a tree stem. No concrete should be mixed within 10m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree.
- 5.15 No fires will be lit where flames are anticipated to extend to within 5m of tree foliage, branches or trunk, taking into consideration wind direction and size of fire.
- 5.16 Notice boards, telephone cables or other services should not be attached to any part of a retained tree.
- 5.17 Any trees which need to be felled adjacent to or are present within a continuous canopy of retained trees, must be removed with due care (it may be necessary to remove such trees in sections).

#### **Protection of Trees Close to the Site**

- 5.18 A number of trees were located on the boundaries of the site and therefore the root protection area and crown spread of these trees will need to be protected in the same way as all the retained trees within the site. All trees located outside the boundaries of the assessment site yet within close proximity to works should be adequately protected during the course of the development by barriers or ground protection around the calculated root protection area.
- 5.19 Any trees which are to be retained and whose Root Protection Areas may be affected by the development should be monitored, during and after construction, to identify any alterations in quality with time and to assess and undertake any remedial works required as a result.

#### **Protection for Aerial Parts of Retained Trees**

- 5.20 Where it is deemed necessary to operate a wide or tall load, plant bearing booms, jibs and counterweights or other such equipment as part of the construction works it is best advised that appropriate, but limited tree surgery, be carried out beforehand to remove any obstructive branches.
- 5.21 Any such equipment would have potential to cause damage to parts of the crown material, i.e. low branches and limbs, of retained trees within the protective barriers. This is termed as 'access

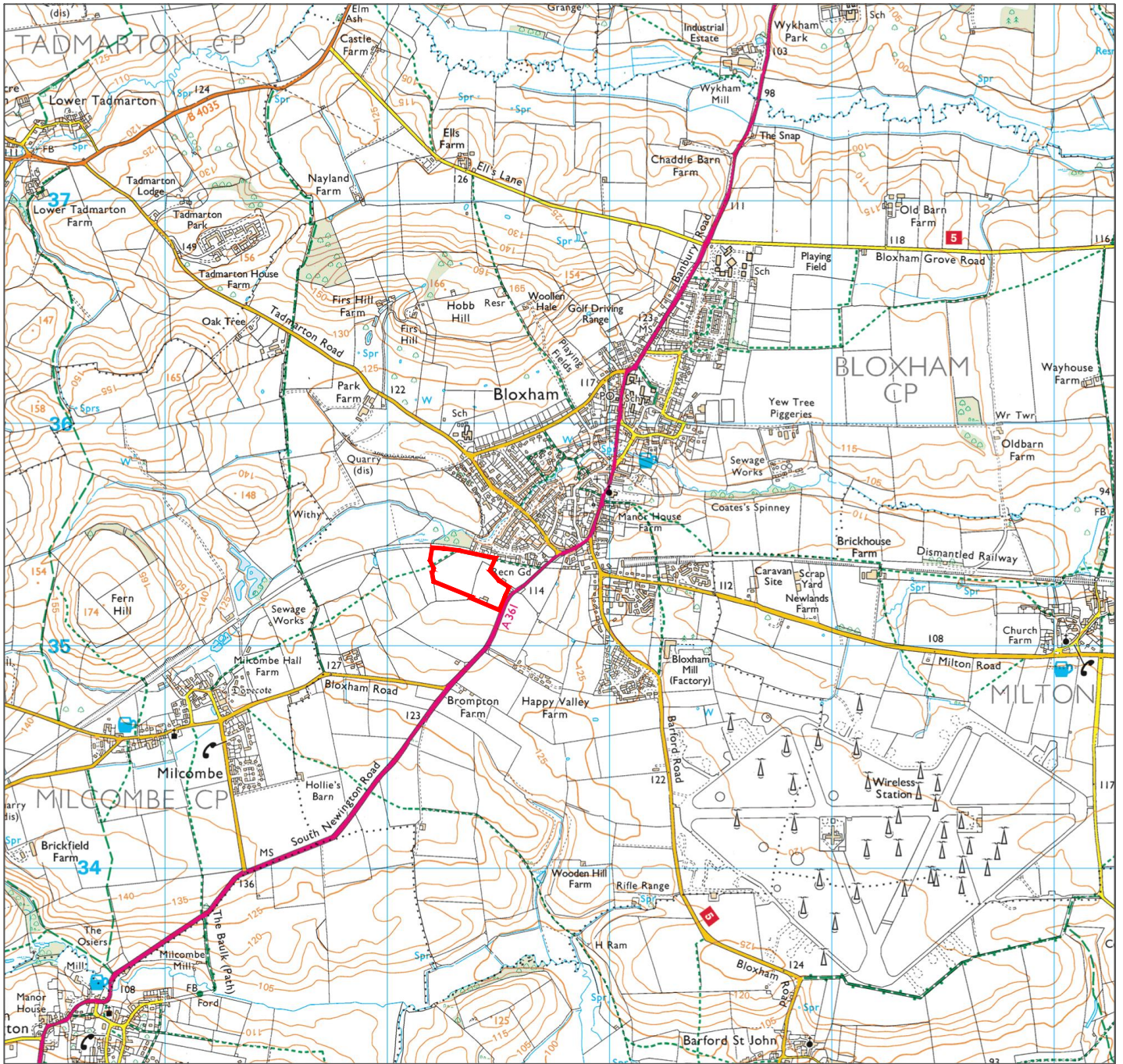
facilitation pruning' within BS5837. Any such pruning should be undertaken in accordance with a specification prepared by an arboriculturalist.

- 5.22 A pre-commencement site meeting with contractors who are responsible for operating machinery will be required, as described above, to firstly highlight the potential for damage occurring to tree crowns and to ensure that extra care is applied when manoeuvring machinery during such operations within close proximity to retained trees to avoid any contact.
- 5.23 In the event of having caused any branch or limb damage to retained trees it is strongly recommended that suitable tree surgery be carried out, in accordance with British Standard 3998:2010 and in agreement with the Local Planning Authority prior to correcting the damage, upon completion of development.

## **6.0 CONCLUSION**

- 6.1 The site comprises of a large area of grassland currently managed as pasture for cattle. The landscape beyond the site is predominantly rural, comprising largely arable land and pasture. Residential areas associated with Bloxham are located outside the site to the north and a recreation ground is adjacent to the site to the north-east. A public right of way runs along the sites northern boundary before crossing diagonally across the centre of the site to the western boundary.
- 6.2 A total of thirty-two individual trees, seven groups of trees and eight hedgerows were surveyed as part of the Arboricultural Assessment. Tree stock across the site comprised predominantly of moderate, Category B, to low quality, Category C, individual tree specimens, groups of trees and hedgerows with the exception of six category A (high quality) trees, namely T15, T18, T21, T22 and T31. These trees were either considered to be fine examples of their species (Ai) or, in the case of T18 and T31, to be of high cultural, historical and ecological value (Aiii) demonstrating a number of characteristic features associated with aging and veteran trees.
- 6.3 To facilitate the proposed development, it is recommended that H3 is removed in its entirety. The loss of a small area of vegetative tree cover should not be seen as a constraint to the proposals nor would it have a significant Arboricultural impact or considered to be at detriment to the wider tree population and landscape character of the site.
- 6.4 The proposed landscape scheme accompanying the development would provide sufficient mitigation for these losses through the securing of new structured tree planting and hedgerow creation throughout the site. The opportunity for development provides a realistic opportunity to increase the net tree coverage across the site providing greater species diversity which should only be seen as beneficial to the local landscape.
- 6.5 The majority of existing trees shall therefore be unaffected by the proposals and will become part of the developments proposed green infrastructure which is to include the planting of additional structural buffer landscaping and new structured tree planting within internal areas of open space and boundary forming tree cover.
- 6.6 The proposals have been sympathetically designed to ensure the retention of the two individual trees regarded as offering veteran attributes, namely T18 and T31, implementing a scheme which adheres to their veteran RPA calculation to ensure they are adequately safeguarded.

- 6.7 For the future care and management of this aging/ transitional veteran situated within or close to the developable area, in order to retain it in a “safe” condition and, as far as practically possible, better guarantee its future survival, it is recommended that no pruning work is carried out at this point in time until a further more detailed assessment is undertaken. This assessment shall help determine the eligibility of T18 and T31 as a Veteran / Transitional Veteran trees which will influence their future management.



**KEY**



Assessment Boundary

rev	date	description	by
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- masterplanning ■
  - environmental assessment ■
  - landscape design ■
  - urban design ■
  - ecology ■
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project  
**South Newington Road  
 Bloxham**

drawing title  
**ASSESSMENT BOUNDARY PLAN  
 FIGURE 1**

scale  
 1:25000 @ A4

drawn  
 CTT

date  
 February 2017

drawing number  
**7503-A-01**








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**KEY**

-  Category A - Trees / Groups of High Quality (BS 5837:2012)
-  Category B - Trees / Groups of Moderate Quality (BS 5837:2012)
-  Category C - Trees / Groups of Low Quality (BS 5837:2012)
-  Hedgerow (Colour indicates BS5837:2012 Category)
-  Root Protection Area (The RPA has been altered where appropriate to reflect underground constraints)
-  Individual / Group Number and BS5837:2012 Category
-  Indicative Shade Pattern (in accordance with BS5837:2012 where appropriate)

Scale 1:1250 @ A3



**NOTES**

All dimensions to be verified on site. Do not scale this drawing, use figured dimensions only. All discrepancies to be clarified with project Arboriculturalist. Drawing to be read in conjunction with Arboricultural Assessment and Appendix A - Tree Schedule.

Drawing has been produced in colour and is based on digital information in .dwg format, aerial images and/or GPS location where appropriate. A monochrome copy should not be relied upon. The exact position of individual trees or species included as part of a tree group, woodland or hedgerow should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths.


Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by the project Arboriculturalist should works commence 12 months after the date of this survey.

SOME TREES MAY BE SUBJECT TO STATUTORY CONSTRAINTS. IT IS THEREFORE ADVISED THAT NO WORKS SHOULD BE UNDERTAKEN TO ANY TREES ILLUSTRATED HEREIN WITHOUT FIRST OBTAINING THE RELEVANT AUTHORISATION TO DO SO UNLESS AGREED AS PER THE APPROVED PLANS THROUGH PLANNING CONSENT.

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A	16/04/2018	Final Issue	JKH
rev	date	description	by



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drawing title  
**TREE SURVEY PLAN  
FIGURE 2**

scale  
1:1250 @ A3

drawn  
JKH

date  
April 2018

drawing number  
**7503-A-02**

rev  
**A**



for landscaped pond, and community benefits

de serve

Potential location for SuDS within lower part of the Site

Potential location for foul pump station and 15m buffer

Existing water main necess corridor along the north



Field to be retained for public open space

South Newington Road Recreation Ground

Pavilion

Existing hedgerow within the Site to be supplemented with new tree planting

KEY

-  Tree/Group to be Retained
-  Tree/Group to be removed to facilitate the proposals
-  Category U - Unsuitable for retention on arboricultural grounds
-  Hedgerow Proposed to be Retained and Incorporated into the New Development
-  Hedgerow Proposed to be Removed to Facilitate the Development upon Approval of the Application
-  Root Protection Area (Shown for retained trees only)
-  Individual / Group Number and BS Category
-  Indicative Shade Pattern (where appropriate)

Scale 1:1250 @ A3



NOTES

All dimensions to be verified on site. Do not scale this drawing, use figured dimensions only. All discrepancies to be clarified with project Arboriculturalist. Drawing to be read in conjunction with Arboricultural Assessment and Appendix A - Tree Schedule.

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Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by the project Arboriculturalist should works commence 12 months after the date of this survey.

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-	30.01.2017	Final Issue	CTT
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drawing title  
TREE RETENTION PLAN  
FIGURE 3

scale  
1:1250 @ A3

drawn  
JKH

date  
April 2018

drawing number  
**7503-A-03**

rev  
**A**

## Appendix A - Tree Schedule

Measurements	Age Class	Overall Condition	Root Protection Area (RPA)
Height - Measured using a digital laser clinometer (m)	YNG: Young trees up to ten years of age	G - Good: Trees with only a few minor defects and in good overall health needing little, if any attention	<ul style="list-style-type: none"> <li>• The RPA Radius column provides the extent of an equivalent circle from the centre of the stem (m).</li> <li>• The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the rooting area required for a tree to be successfully retained. Tree roots extend beyond the calculated RPA in many cases and where possible a greater distance should be protected.</li> <li>• Where veteran trees have been identified the RPA has been calculated in accordance with Natural England guidance i.e. 15x the stem diameter, uncapped.</li> </ul>
Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837	SM: Semi-mature trees less than 1/3 life expectancy	F - Fair: Trees with minor rectifiable defects or in the early stages of stress from which it may recover	
Crown Radius - Measured using a digital laser clinometer radially from the main stem (m)	EM: Early mature trees 1/3 – 2/3 life expectancy	P - Poor: Trees with major structural and/or physiological defects such that it is unlikely the tree will recover in the long term	
Abbreviations est - Estimated stem diameter avg - Average stem diameter for multiple stems upto - Maximum stem diameter of a group	M: Mature trees over 2/3 life expectancy	D - Dead: This could also apply to trees in an advanced state of decline and unlikely to recover	
	OM: Over mature declining or moribund trees of low vigour	The BS category particular consideration has been given to the following <ul style="list-style-type: none"> <li>• The health, vigour and condition of each tree</li> <li>• The presence of any structural defects in each tree/group and its future life expectancy</li> <li>• The size and form of each tree/group and its suitability within the context of a proposed development</li> <li>• The location of each tree relative to existing site features e.g. its screening value or landscape features</li> <li>• Age class and life expectancy</li> </ul>	
	V: Veteran tree possessing certain attributes relating to veteran trees		

Structural Condition
The following is an example of considerations when inspecting structural condition: <ul style="list-style-type: none"> <li>• 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</li> <li>• Soil cracks and any heaving of the soil around the base</li> <li>• Any abrupt bends in branches and limbs resulting from past pruning</li> <li>• Tight or weak 'V' shaped forks and co-dominant stems</li> <li>• 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)</li> <li>• Cavities as a result of limb losses or past pruning</li> <li>• Broken branches or storm damage</li> <li>• Damage to roots</li> <li>• Basal, stem or branch / limb cavities</li> <li>• Crown die-back or abnormal foliage size and colour</li> </ul>

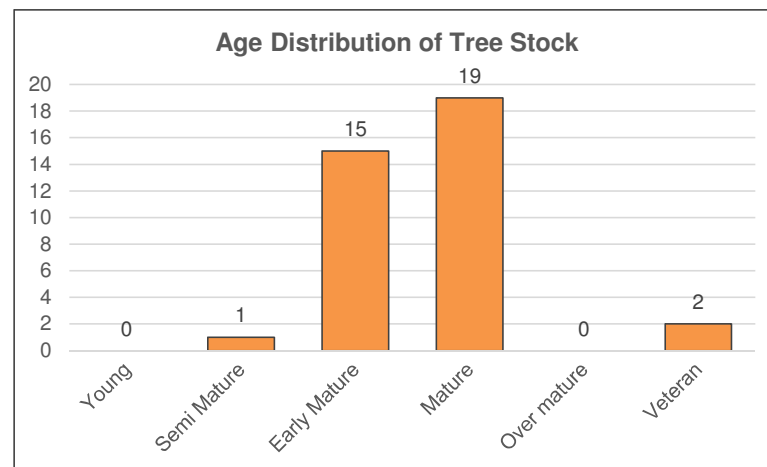
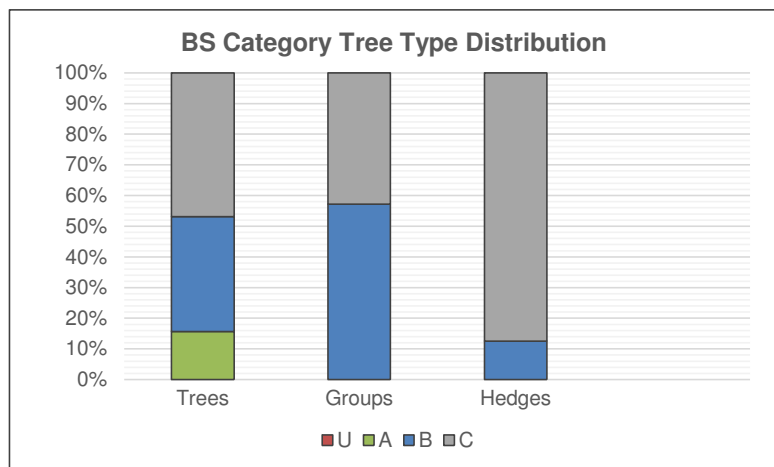
Quality Assessment of BS Category
Category U - Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years.
Category B - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
Category C - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.
Sub-categories: (i) - Mainly arboricultural value (ii) - Mainly landscape value (iii) - Mainly cultural or conservation value

### Appendix Summary

	Individual Trees	Totals	Tree Groups and Hedgerows	Totals
Category U		0		0
Category A	T15, T18, T21, T22, T31	5		0
Category B	T2, T3, T4, T12, T13, T16, T17, T19, T20, T23, T28, T32	12	G2, G3, G5, G7, H6	5
Category C	T1, T5, T6, T7, T8, T9, T10, T11, T14, T24, T25, T26, T27, T29, T30	15	G1, G4, G6, H1, H2, H3, H4, H5, H7, H8	10
	Total	32	Total	15

**BS Category Tree Type Distribution** displays the proportion of trees assessed in each type to enable a better understanding of the category distribution.

**Age Distribution of Tree Stock** shows the number of trees in each age category across the tree stock allowing assessment of their longevity to be made.



Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
<b>INDIVIDUAL TREES</b>										
T1	Hawthorn <i>Crataegus monogyna</i>	5	83 147	1	M	F	Bark wounds noted Characteristic for species Multi stemmed from base No major defects were noted	13	2.0	C (i)
T2	English Elm <i>Ulmus procera</i>	12	255	2.5	EM / M	G	Characteristic for species No major defects were noted Pruning wounds noted	29	3.1	B (i)
T3	Ash <i>Fraxinus excelsior</i>	16.8	410	3.5	EM	G	Branch stubs evident Epicormic growth evident within the crown No major defects were noted Pruning wounds noted	76	4.9	B (i)
T4	Common Lime <i>Tilia x europaea</i>	16.8	436	3	EM	G	Branch stubs evident Epicormic growth evident within the crown No major defects were noted Pruning wounds noted Unsympathetic past pruning	86	5.2	B (i)
T5	Ash <i>Fraxinus excelsior</i>	14	Over ivy 364 124 126 392 380	N - 4 S - 5 E - 4 W - 1	EM / M	F	Dense ivy cover on main stem Dense undergrowth at the base Minor dead wood evident in the crown (<75mm) Pruning wounds noted Suppressed crown form Crab apple at base Dense ivy impeded inspection	209	8.2	C (i)
T6	Field Maple <i>Acer campestre</i>	8	Over ivy 656	N - 0.5 S - 2 E - 2 W - 2	M	F	Base obscured Branch stubs evident Dense ivy cover on main stem Dense undergrowth at the base Minor dead wood evident in the crown (<75mm) No major defects were noted	195	7.9	C (i)
T7	Sycamore <i>Acer pseudoplatanus</i> 'Brilliantissimum'	3.5	120	1	SM	F	Crown had been heavily reduced Multi leadered form	7	1.4	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T8	Apple Malus domestica	7	350	3	M	F	Basal suckers present Branch socket cavities observed Crossing and rubbing branches Minor dead wood evident in the crown (<75mm) Pruning wounds noted Multiple pruning wounds along lower main stem Dense crown from fruiting spurs	55	4.2	C (i)
T9	Damson Prunus insititia	4	78	1.5	SM / EM	G	Characteristic for species	3	0.9	C (i)
T10	Hawthorn Crataegus monogyna	3.7	250	1.5	M	F	Characteristic for species Crossing and rubbing branches Low crown form No major defects were noted Pruning wounds noted	28	3.0	C (i)
T11	Blackthorn Prunus spinosa	3	75 60	1	EM	F	Characteristic for species Limited future potential Pruning wounds noted	4	1.2	C (i)
T12	False Acacia Robinia pseudoacacia	13.5	350	3.5	EM / M	G	Characteristic for species No major defects were noted Pruning wounds noted Situated offsite	55	4.2	B (i)
T13	Hawthorn Crataegus monogyna	3.8	242	1	M	F	Bark wounds noted No major defects were noted Situated offsite	26	2.9	B (i)
T14	Ash Fraxinus excelsior	7	est 300	3	EM	F / G	Base obscured Dense ivy cover on main stem Dense undergrowth at the base No major defects were noted Situated offsite	41	3.6	C (i)
T15	English Oak Quercus robur	13	591	4	EM	G	Bark wounds noted No major defects were noted Pruning wounds noted Situated offsite	158	7.1	A (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T16	Field Maple Acer campestre	11	380	3.5	EM / M	F / G	Bark wounds noted Minor dead wood evident in the crown (<75mm) No major defects were noted Pruning wounds noted Situated offsite	65	4.6	B (i)
T17	Field Maple Acer campestre	11	213	2	EM	G	Bark wounds noted Minor dead wood evident in the crown (<75mm) No major defects were noted Pruning wounds noted Situated offsite	21	2.6	B (i)
T18	Crack Willow Salix fragilis	7	1917	N - 3 S - 4 E - 7 W - 2	V	P / F	Bark wounds noted Basal cavity observed Branch stubs evident Broken branches evident Epicormic growth evident within the crown Heartwood exposed Low crown form Minor dead wood evident in the crown (<75mm) Large willow which has a collapsed and layering form Upright epicormic growth forms crown Poached ground at base Fungi at base on north side	2598	28.8	A (iii)
T19	Silver Birch Betula pendula	11.5	est 320	3	EM	G	Base obscured Characteristic for species Situated offsite Unable to gain access	46	3.8	B (i)
T20	Ash Fraxinus excelsior	16	452	4.5	M	G	Characteristic for species Minor dead wood evident in the crown (<75mm) No major defects were noted Situated offsite Barbed wire attached to main stem on south side	92	5.4	B (i)
T21	English Oak Quercus robur	13	est 430	4	EM	G	Base obscured Dense ivy cover on main stem Dense undergrowth at the base No major defects were noted Situated offsite	84	5.2	A (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T22	English Oak Quercus robur	13	est 400	3	EM	G	Base obscured Dense ivy cover on main stem Dense undergrowth at the base Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) No major defects were noted Situated offsite	72	4.8	A (i)
T23	English Oak Quercus robur	13	est 500 320 400	6	EM	G	Base obscured Dense ivy cover on main stem Dense undergrowth at the base Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Multi stemmed from base No major defects were noted Situated offsite	232	8.6	B (i)
T24	Field Maple Acer campestre	10	410 390	3.5	M	F	Characteristic for species Dense undergrowth at the base Low crown form Minor dead wood evident in the crown (<75mm) Multi leadered form Poached ground at the base	145	6.8	C (i)
T25	Crack Willow Salix fragilis	11	486	N - 5 S - 2 E - 6 W - 5	EM	F	Characteristic for species Dense undergrowth at the base Limited future potential Poached ground at the base Historic lean north	107	5.8	C (i)
T26	Crack Willow Salix fragilis	10.5	274	3	EM	F	Bark wounds noted Dense undergrowth at the base Epicormic growth evident within the crown Suppressed crown form	34	3.3	C (i)
T27	Crack Willow Salix fragilis	13	374	N - 4.5 S - 4.5 E - 7.5 W - 4.5	EM / M	F	Characteristic for species Dense undergrowth at the base Limited future potential Poached ground at the base Growing in ditch	63	4.5	C (i)
T28	Ash Fraxinus excelsior	15.5	avg 450	5.5	M	F	Characteristic for species Dense undergrowth at the base Epicormic growth evident within the crown Minor dead wood evident in the crown (<75mm) Multi leadered form No major defects were noted	92	5.4	B (ii)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T29	Ash Fraxinus excelsior	15	447	3.5	M	F	Characteristic for species Dense undergrowth at the base Epicormic growth evident within the crown Minor dead wood evident in the crown (<75mm) Multi leaded form No major defects were noted Tree had lost leaves prematurely compared to nearby ash trees	90	5.4	C (i)
T30	Ash Fraxinus excelsior	20	718	5	M / OM	F	Bark wounds noted Branch socket cavities observed Branch stubs evident Dense ivy cover on main stem Dense undergrowth at the base Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Suppressed crown form Barbed wire attached to lower main stem Central stem - top of the tree - dead Large cavity observed in main stem at 15m above ground level on the north side Multiple woodpecker holes on main stem	233	8.6	C (i)
T31	Ash Fraxinus excelsior	22	est 1650	N - 11 S - 8 E - 8 W - 8	V	F	Bark wounds noted Branch socket cavities observed Branch stubs evident Dense undergrowth at the base Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Woodpecker holes observed Barbed wire attached to lower main stem Central stem - top of the tree - dead Large cavities observed along several scaffold limbs on lower crown Large hazard beam on south side - 7m above ground level Cavity on upper side of lowest large limb - north side - possible progressive hollowing Dense crown Multiple woodpecker holes on main stem	1924	24.8	A (iii)



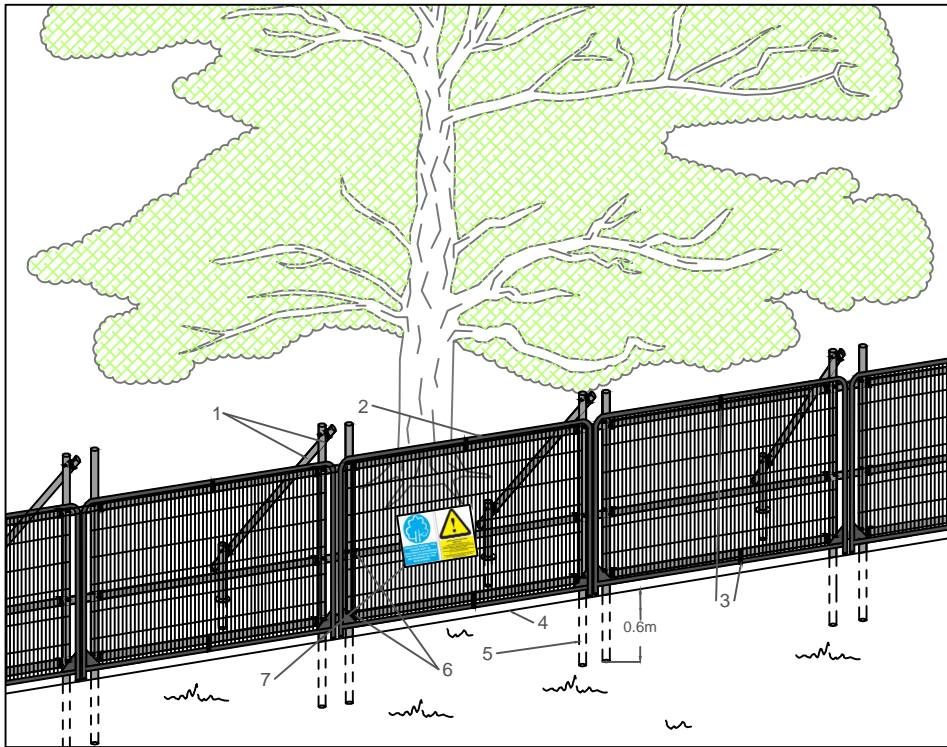
Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T32	Field Maple Acer campestre	16.5	612	N - 5 S - 5 E - 5 W - 2.5	M	F	Bark wounds noted Characteristic for species Low crown form Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) No major defects were noted Suppressed crown form	169	7.3	B (i)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
<b>GROUPS OF TREES</b>										
G1	Elder Sambucus nigra Hawthorn Crataegus monogyna	3	upto 80 100 150	1	EM / M	F / G	Sporadic trees / shrub massed beneath crowns of larger trees Remnants of former hedge	18	2.4	C (ii)
G2	Elder Sambucus nigra English Oak Quercus robur Hawthorn Crataegus monogyna Apple Malus domestica	7	upto 380	3	EM / M	G	Base obscured Dense ivy cover on main stem Outgrown hedgerow Situated offsite Unable to gain access Un-maintained hedgerow Site boundary host to partially maintained hedgerow Larger trees off site within neighbouring garden	65	4.6	B (ii)
G3	Lombardy Poplar Populus nigra 'Italica'	29	avg 525	2.5	M	G	Characteristic for species Minor dead wood evident in the crown (<75mm) No major defects were noted Situated offsite	125	6.3	B (ii)
G4	Elder Sambucus nigra Crab Apple Malus sylvestris	6	upto 300	2	EM / M	P / F	Bark wounds noted Dead trees noted Interlocking crowns Limited future potential Minor dead wood evident in the crown (<75mm) Multi stemmed from base Positioned along a shared boundary	41	3.6	C (ii)
G5	Leyland Cypress Cupressocyparis leylandii	4.5	avg 320	2	EM / M	F	Crown had been heavily reduced Situated offsite	46	3.8	B (ii)
G6	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna Yew Taxus baccata	4.5	avg 130	1.5	EM / M	F	Characteristic for species Dense ivy cover on main stem Interlocking crowns Low crown form Minor dead wood evident in the crown (<75mm) Dense group along boundary which has been regularly flailed along southern edge	8	1.6	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G7	Ash Fraxinus excelsior Crack Willow Salix fragilis Elder Sambucus nigra Field Maple Acer campestre Hawthorn Crataegus monogyna Crab Apple Malus sylvestris	11	upto 330	N - 2.5 S - 2.5 E - 5 W - 2.5	EM / M	F	Bark wounds noted Branch stubs evident Broken branches evident Browsing damage noted on main stem Epicormic growth evident within the crown Interlocking crowns Low crown form Minor dead wood evident in the crown (<75mm) Multi leadered form Multi stemmed from base Poached ground at the base Dense group running length of boundary Appears to be an old hedge line supporting several larger trees Provides significant site screening	49	4.0	B (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
<b>HEDGEROWS</b>										
H1	Field Maple Acer campestre Hawthorn Crataegus monogyna Privet Ligustrum ovalifolium Leyland Cypress Cupressocyparis leylandii	2	avg 80	0.5	M	G	Maintained hedgerow	3	1.0	C (ii)
H2	Leyland Cypress Cupressocyparis leylandii	0.5	avg 80	0.5	M	G	Maintained hedgerow	3	1.0	C (ii)
H3	Elder Sambucus nigra Hawthorn Crataegus monogyna Wych Elm Ulmus glabra	2	avg 135	1	M	F	Characteristic for species Dense ivy cover on main stem Maintained hedgerow	8	1.6	C (ii)
H4	Elder Sambucus nigra Hawthorn Crataegus monogyna Wych Elm Ulmus glabra	2.5	avg 135	1	M	F	Characteristic for species Dense ivy cover on main stem Gaps present in hedgerow Maintained hedgerow	8	1.6	C (ii)
H5	Elder Sambucus nigra Hawthorn Crataegus monogyna	3.5	upto 60 80 50	1	EM / M	F	Outgrown hedgerow Un-maintained hedgerow	6	1.3	C (ii)
H6	Hawthorn Crataegus monogyna Leyland Cypress Cupressocyparis leylandii	2	upto 190	0.5	EM / M	G	Maintained hedgerow	16	2.3	B (ii)
H7	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna	1	avg 50 60 90 40	1	M	F	Maintained hedgerow	7	1.5	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H8	Ash Fraxinus excelsior Blackthorn Prunus spinosa Wych Elm Ulmus glabra	2.5	avg 50	1	EM / M	G	Maintained hedgerow Outgrown hedgerow	1	0.6	C (ii)



### Standard specification for protective barrier

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanized tube and welded mesh infill panels
3. Panels secured to scaffold frame with wire ties
4. Ground level
5. Uprights driven into the ground until secure (min depth of 0.6m)
6. Standard scaffold clamps
7. Construction Exclusion Zone signs



### Above ground stabilising systems

1. Stabiliser strut with base plate secured with ground pins
2. Feet blocks secured with ground pins
3. Construction Exclusion Zone signs

### NOTES

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## APPENDIX B PROTECTIVE FENCING SPECIFICATIONS

CAD file: S:\Arb resources\Basic Templates\Tree Protection\Appendix B - Protective Fencing A4.dwg

## Appendix C - Veteran Tree Schedule

Key	Dimensions and Habitat Features		Associated Wildlife	Aesthetics
Tree considered Veteran	DBH (mm) - Stem diameter measured at 1.5m above ground level in mm	Major trunk cavities - Cavity to exceed 30% of stem diameter or to be progressively developing	Crevices sheltered from rainfall - Dry, potential invertebrate habitat	An old look or Aesthetic value - Striking form or particularly gnarled
Tree considered Future Veteran	Large girth for species - as described by the Veteran Tree Initiative	Large quantities of dead wood in canopy - More than 50% of crown dead or dying back	Evidence of independent wildlife species - Droppings, nests, pellets	Cultural/historic value - Parkland tree, field or road marker
	PR - Pheonix Regeneration M - Maiden	Physical damage to trunk - Often as a result of storm damage	Fungi - Polypores or Basidio-mycetes on or around tree	Prominent Position - Visually prominent in its landscape
		Decay Holes - Branch socket cavities on limbs or main stem	Epiphytes or Hemiparasites - lichen, liverworts, ivy, mistletoe	
		Epicormic Growth - Strong vigourous epicormic growth present about the tree		
		Bark Loss - Bark missing from main stem in large quantities		
		Sap Runs - Either from cracks in bark or cavities		

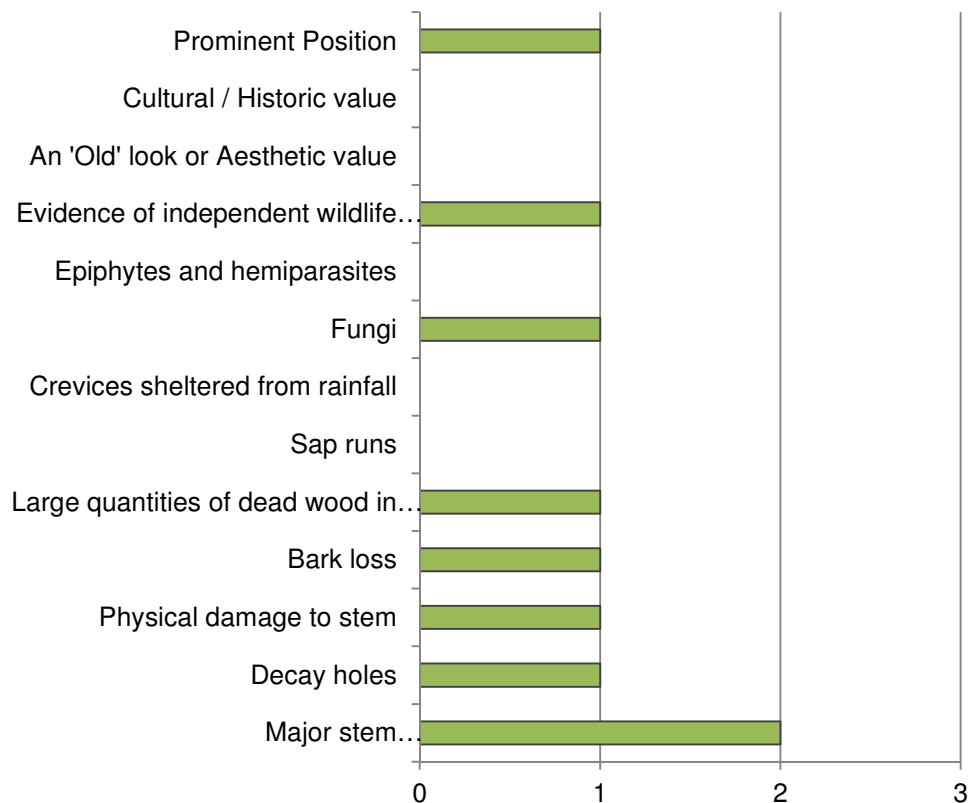
This document should be read in conjunction with the Arboricultural Assessment. The National Planning Policy Framework, a key government policy document, stresses the importance of Ancient and Veteran trees. From an ecological perspective veteran trees provide a rare and very specialist niche habitat and therefore preservation of this habitat is considered highly important. It would therefore be recommended that a detailed assesment be undertaken of the veteran habitat and this schedule should only be used as a guide to the presence of veteran trees on the site.

**Distribution of Habitat Features** - Displays the total of each habitat feature present in the surveyed tree cover. The proportion of trees with these features can be used to determine the condition and risks to the veteran tree stock.

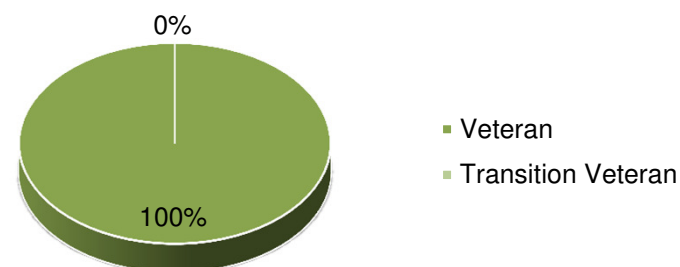
**Veteran Population** - Provides the mix of Veteran/Future Veteran and non-veteran specimens across the surveyed tree stock.

**Species Distribution** - Shows the proportion of Veteran and Future Veterans for each species found during the assessment.

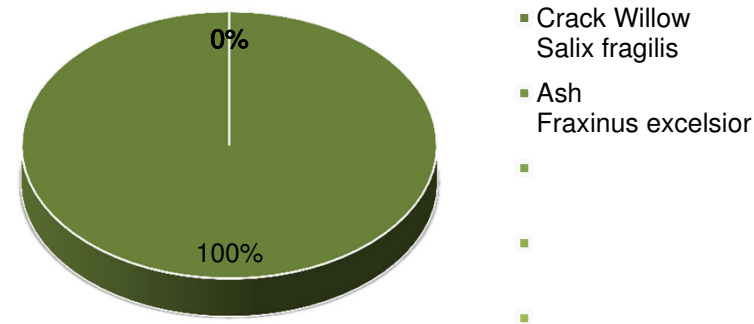
**Distribution of Habitat Features**



**Veteran Population**



**Species Distribution**





Identification		Dimensions				Habitat Features							Associated Wildlife				Aesthetics		
Tree No	Species	Large girth for species	Girth (cm)	Measurement height (m)	Form	Major stem cavities / hollowing	Decay holes	Physical damage to stem	Bark loss	Epicormic Growth	Large quantities of dead wood in canopy	Sap runs	Crevices sheltered from rainfall	Fungi	Epiphytes and hemiparasites	Evidence of independent wildlife species	An 'Old' look or Aesthetic value	Cultural / Historic value	Prominent Position
T18	Crack Willow Salix fragilis	Yes	602.2	1.5m	PR	✓		✓	✓	✓				✓					
T31	Ash Fraxinus excelsior	Yes	518.4	1.5m	M	✓	✓			✓	✓					✓			✓