Barratt David Wilson Homes

White Post Road, Bodicote

Arboricultural Assessment

May 2019

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1.0 INTRODUCTION

1.1 This report has been prepared by FPCR Environment and Design Limited on behalf of Barratt David Wilson Homes to present the findings of an Arboricultural Assessment and survey of trees located at White Post Road, Banbury (hereafter referred to as the site), OS Grid Ref SP 457 383.

1.2 The survey was most recent arboricultural assessment was carried out on 17th April 2019.

Site description

1.3 The site is located on the south side of Banbury between the settlements of Easington and Bodicote and situated west of White Post Road. Salt Way forms the northern boundary to the site. The site comprises of four field parcels, two of which are used for agricultural purposes, one as amenity grassland to the south side of private properties and one containing an access to Banbury Cricket Club. The largest of the field compartments were those of agricultural use which covered the vast majority of the assessment area. Surrounding the site beyond the northern and eastern boundary is the residential area of Banbury, and beyond the southern and western boundary is a continuation of field parcels.

1.4 The tree stock comprised mostly hedgerows and groups of trees that delineated the field parcels. The hedgerows and groups of trees of the field boundaries were mostly young to semi-mature and of small proportions containing a diversity of different species including both broadleaved and coniferous specimens.

Background

1.5 FPCR Environment and Design were appointed by Gladman Developments Ltd in 2013 to provide an arboricultural survey and arboricultural impact assessment in accordance with the guidelines contained within British Standard 5837:2012 *'Trees in Relation to Design, Demolition and Construction - Recommendations'* for the tree population located on land to the west of White Post Road, Banbury in support of an outline planning application for residential development (application Ref. 15/01326/OUT, dated 13 July 2015). As part of this assessment, a detailed arboricultural access appraisal was provided to address the arboricultural implications arising from the construction of a main point of vehicular access leading off White Post Road.

1.6 The Arboricultural Impact Assessment (FPCR, April 2016) concluded that whilst certain tree and hedgerow losses would be required to facilitate the development and were, on a whole, largely unavoidable, with *'the new landscaping proposed set to greatly increase the existing tree stock and add more arboricultural value to the site ensuring future generations of tree cover. Overall the proposals will increase the volume of tree stock by high proportions in terms of both number and land coverage. The new landscape creation along with seeing the highest valued trees being retained and incorporated into the development would demonstrate that the development proposals will have a positive impact in terms of arboriculture.'*

Outline Planning Consent and Reserved Matters

1.7 On 29th March 2017 an appeal was made by Gladman Developments Limited against Cherwell District Council under section 78 of the Town and Country Planning Act 1990 against a failure to give notice within the prescribed period of a decision on an application for outline planning permission (Appeal Ref: APP/C3105/W/17/3172731).

1.8 The appeal was allowed on the 20th December 2017 and outline planning permission was granted for up to 280 dwellings (including 30% affordable housing) with all matters reserved for subsequent approval, with the exception of access.

Scope of Assessment

1.9 This arboricultural assessment forms part of the supplementary information to be submitted as part of the reserved matters application for the development White Post Road, Banbury ("the site") as part of the requirements of Condition 11.

Condition 11:

'No development shall take place until a full arboricultural survey, method statement and arboricultural implications assessment that accords with BS: 5837:2012 (or any superseding British Standard) for all existing trees and hedgerows within and around the perimeters of the site have been submitted to, and approved in writing by, the local planning authority. The development hereby permitted shall take place only in accordance with the approved details.'

1.10 From here on in, this arboricultural assessment is concerned with the arboricultural matters arising from the site's development in accordance with the supplied plans referenced below.

1.11 The purpose of this report is therefore to firstly, present the results of an updated 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 residential development of up to 280 dwellings (with all matters reserved for subsequent approval, with the exception of access). The survey has therefore focused on any trees present within or bordering the site that may potentially be affected by the future proposals or will pose a constraint to any proposed development.

Supplied Plans

1.12 In preparation of this assessment, the individual positions of trees and groups within the developable area have been shown on an updated Tree Survey Plan. The crown spread, root protection area and shade pattern (where appropriate) are also indicated on this plan. The positions of trees are based on a topographical / land survey, as far as possible, supplied by the client.

1.13 Where topographical information has not identified the position of trees and hedgerows, these have been plotted using a global positioning system and aerial photography to provide approximate locations.

1.14 The Tree Retention Plan provided has been based on the following drawings supplied by Barratt David Wilson Homes:

- BOD_Planning Layout (01)_26.04.19

2.0 PLANNING POLICY

National Planning Policy Framework 2019

2.1 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.

2.2 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.

2.3 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'.*

2.4 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'.*

Statutory Considerations

2.5 Local authorities have a Duty under the Town and Country Planning Act to create Tree Preservation Orders (TPO) in order to protect and preserve specific trees and woodlands that bring significant amenity benefit to a particular site or location. Under a TPO it is a criminal offence to cut down, top, lop, uproot or willfully destroy a tree protected by that Order, or to cause or permit such actions, if carried out without the prior written consent of the acting LPA. Anyone found guilty of such an offence is liable and in serious cases, may result in prosecution and incur an unlimited fine.

2.6 Following consultation with the local planning authority, Cherwell District Council, in 2016, it is understood that there is a tree preservation order, namely 007/1994 (Salt Way, Banbury) Tree Preservation Order, which applies to a number of trees present within the assessment and therefore statutory constraints apply to the development in respect of trees. Further details are given in table 2.

2.7 An update of this current TPO information has yet to be confirmed by Cherwell District Council Once this information has been received, the report will be updated accordingly. Before any tree works are undertaken confirmation of the presence of the statutory constraints should be sought from the Local Authority.

3.0 SURVEY METHODOLOGY

3.1 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.

3.2 Trees have been assessed as groups or hedgerows 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.

3.3 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. 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.

3.4 An assessment of individual trees within groups or hedgerows 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.

Ancient and Veteran Trees

3.5 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.

3.6 Veteran Trees and Ancient Woodlands are material considerations within the planning process and their importance is specifically recognised within the National Planning Policy Framework (NPPF) 2019 and defines the terms ancient or veteran tree as:

'A tree which, because of its age, size and condition, is of exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are old enough to be ancient, but are old relative to other trees of the same species. Very few trees of any species reach the ancient life-stage.'[1]

3.7 Various published methodologies are currently available which, due to the complexity and subjectivity of the process of defining and assessing these trees, often have conflicting definitions. This assessment, and the criteria used for defining ancient/veteran trees and the identification of attributable ancient/veteran features, has been based on a range of currently published guidance and resources.

[1] Ministry of Housing, Communities and Local Government. (2019). *National Planning Policy Framework.* London: Ministry of Housing, Communities and Local Government.

3.8 In principal, reference has been made to Owen & Alderman (2008) and *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* for guidance on the recognition of both ancient and veteran trees.

3.9 Level 3 of the Specialist Survey Method (SSM) of de Berker & Fay (2004)[2] has also been utilised for gathering survey information as this provides a standardised framework for recording characteristic ancient/veteran features.

BS5837 Categories

3.10 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).

3.11 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.

3.12 **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.

3.13 **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.

[2] de Berker, N., & Fay, N. (2004). English Nature Research Report Number 529 – Evaluation of the Specialist Survey Method for Veteran Tree Recording. Bristol: Treework Environmental Practice.

- Sub category (iii) trees, groups or woodlands of significant conservation, historical, commemorative or other value for example veteran or wood pasture.

3.14 **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.

3.15 **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.

Tree Schedule

3.16 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.

3.17 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.

3.18 Hedgerows are identified as a Habitat of Principle Importance (HPI) as listed within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. The tree survey conducted, 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.

3.19 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.

3.20 For the purposes of this assessment woodland is described as a habitat where *'trees are the dominant plant form. The individual tree canopies generally overlap and interlink, often forming a more or less continuous canopy'*[3].

3.21 Woodlands however, are not just formed of trees and generally include a great variety of other plants. These will *include 'mosses, ferns and lichens, as well as small flowering herbs, grasses and shrubs'*[4].

3.22 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.

Site Plans

3.23 The individual positions of trees and groups have been shown on the Tree Survey Plan. The positions of trees are based on a topographical / land survey, as far as possible, supplied by the client.

3.24 Where topographical information has not identified the position of trees these have 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.

3.25 As part of this assessment, a Tree Retention Plan 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.

Tree Constraints and Root Protection Areas

3.26 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.

3.27 Where applicable the shape of the Root Protection Area has been modified to consider 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.

3.28 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.

3.29 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] http://www.countrysideinfo.co.uk/woodland_manage/whatis.html
[4] http://www.countrysideinfo.co.uk/woodland_manage/whatis.html

Considerations and Limitations of the Tree Survey

3.30 The survey was completed from ground level only and from within the boundary of the site. Aerial tree inspections or an assessment of 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.

3.31 The statements made in this report regarding defects in assessed trees does not take into account the effects of extreme / adverse weather conditions, changes in land use prior to the site's development as detailed within Section 4.0, unforeseen accidents or anti-social behaviors, such as vandalism, which occur since the date of the survey. As such, the assessment of tree condition given within applies to the date of survey and cannot be assumed to remain unchanged.

3.32 It will be necessary to review all comments and observations made within this report, in accordance with sound arboricultural practice, within two years of the date of survey (unless explicitly stated elsewhere within this report). Further review may also be necessary where site conditions change or works to trees are carried out which have not been specified in detail within this report.

3.33 It may be necessary during detailed design to undertake further assessment and accurate positioning of woody species within 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.

3.34 The exact position of individual trees or species included as part of a tree group 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.

4.0 RESULTS

4.1 A total of twenty four individual trees, twenty two groups of trees and ten 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 the Tree Survey Plan and Appendix A – Tree Schedule for full details of the trees included in this assessment. The table below summarises the trees assessed.

4.2 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)	T6, T7, T9, T11, T14, T15, T21, T22, T23	9	G18	1
Category B (Moderate Quality / Value	T3, T4, T13, T16, T18, T19, T20, T26	8	G8, G9, G11, G12, G15, G16, G17, G19, G20, H9	10
Category C (Low Quality / Value)	T2, T5, T8, T12, T24, T25, T27	7	G1, G2, G3, G4, G5, G6, G7, G10, G13, G14, G21, G23, H1, H2, H3, H4, H5, H6, H7, H8, H10	21

Ancient and Veteran Trees

4.3 None of the assessed trees were considered as ancient or veteran trees in accordance with accepted methodologies and guidance.

Arable Field Compartments

4.4 The majority of the tree stock surveyed was situated within the hedgerows that surrounded the field parcels. From an arboricultural perspective the trees were insignificant due to their young and semi-mature proportions. T3 was a mature English holly *Ilex aquifolium* that was situated within H7 hedgerow between one of the arable fields and the amenity grassland. The tree was in a good overall condition and was considered as having a moderate arboricultural value and was regarded as retention category B.

Wooded Copse

4.5 Situated towards the northern boundary of the site was G13 which comprised of a variety of different species (refer to Appendix A Tree Schedule) and formed a copse feature. The spacing between individual trees forming the group was dense and therefore inaccessible in parts, which limited a more thorough assessment. Observed however throughout the tree group was minor and major deadwood evident in many of the examples, and some of the specimens had sparse canopies most likely from competition for light and space. The group was considered to offer a low arboricultural value collectively and therefore was regarded as retention category C.

Amenity Grassland

4.6 The trees positioned along the borders and within the amenity grassland were regarded as being of the highest arboricultural quality with six trees being considered a retention category A. This included T6 English oak *Quercus robur*, T7 English oak, T9 Holm oak *Quercus ilex*, T11 common lime *Tilia x europaea 'Pallida'*, T14 copper beech *Fagus sylvatica 'Purpurea'* and T15 common beech *Fagus sylvatica*.

Access Drive to Banbury Cricket Club

4.7 To the south of the amenity grassland is an access track that leads to Banbury Cricket Club. Roughly parallel to this track is an avenue of young to semi-mature trees that made up G18, G21, and G22. Also, within this section were some semi-mature to over-mature individual specimens that included T21 – T25.

4.8 Trees T21, T22 and T23 were early mature to mature hornbeam *Carpinus betulus,* beech and sycamore situated adjacent to the southern border. The trees were in good physiological condition with only minor defects that included minor deadwood, exposed wounds (near the base of the tree), and a minor amount of epicormic growth. From an arboricultural perspective, the trees each offered a high arboricultural value (category A) resulting from their mature proportions and good overall health.

4.9 T24 was a mature variegated sycamore *Acer pseudoplatanus 'variegatum'* situated adjacent to the southern border. The tree was considered to be in a poor overall condition with some noted crown dieback that included several major dead branches of 3 - 4m long and minor deadwood throughout the canopy.

The current condition of the tree would indicate its potential to survive at least another 10 years albeit there would need to be remedial treatment to address any defective crown parts in the interests of public safety due to the proximity of the tree to proposed public areas.

4.10 G18 formed two planted lines of semi-mature copper beech to either side of the existing access to the Cricket Club, that were in good overall condition. The group had canopy forms typical for the species type with no major defects observed. From an arboricultural perspective the group formed a decorative avenue and therefore was considered as retention category A (high quality).

Hedgerows

4.11 Situated around the perimeters of the site and most of its individual field parcels were hedgerows. The majority of these hedgerows were formed predominantly by English elm *Ulmus procera,* which included H1, H2, H3, H4, H5 and H8. Other less dominant species recorded within the hedgerows included common hawthorn *Crataegus monogyna,* elder *Sambucus nigra,* blackthorn *Prunus spinosa* and other broadleaf specimens commonly found within field hedgerows. All of the mentioned hedgerows were slightly outgrown however, they appeared to be maintained due to their relatively uniform heights and indistinct canopy forms. From an arboricultural perspective, all ten hedgerows were considered to be of low landscape value due to their small proportions, which included heights of two to three metres.

Statutory Constraints

4.12 The following table details which trees are included in the Cherwell District Council Tree Preservation Order (TPO), 007/1994 (Salt Way, Banbury), which was correct at the time of the original report in 2016. The trees identified within the TPO are protected by law from felling or uprooting, pruning including 'topping/lopping' and willful damage or destruction. The granting of full planning permission would override the protection afforded by the Tree Preservation Order to those trees shown as removed to facilitate the proposals within the approved plans.

Table 2: Tree Preservation Order / Conservation Area details

Tree No, taken from FPCR	TPO reference no.
T4	T24
T5	T8
T6	T7
T9	T16
T10 and T11	G17
T12	T18

4.13 Prior to any tree surgery and / or felling of protected trees it will be necessary to apply to the relevant local planning authority to gain consent for the works. For more information regarding Conservation Areas and Tree Preservation Orders it is advised that contact is made with the Local Planning Authority's arboricultural officer, or other such relevant person.

5.0 ARBORICULTURAL IMPACT ASSESSMENT

5.1 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.

5.2 The AIA has been based upon the BOD_Planning Layout (01)_26.04.19 and seeks to outline the relationship between the proposals and the existing trees and hedgerows. The drawing shows the proposals for up to 280 dwellings (including 30% affordable housing), introduction of structural planting and landscaping, formal and informal public open space and play areas, surface water flood mitigation and flood attenuation provision.

5.3 An overlay of the layout has been incorporated in the Tree Retention Plan to assist in identifying the relationship and any potential conflicts between the proposals and the existing trees and hedgerows.

Primary Access – White Post Road

5.4 The point of main vehicular access into the site will be forged off White Post Road and will require the removal of T16 and H9, a moderate quality common lime and mixed native and naturalised species hedgerow respectively.

In addition to these removals, it is also recommended that one tree forming G21 (low quality) is removed. With the exception of G21, these tree removals are consistent with those discussed as part of the Arboricultural Assessment (FPCR 2016) provided to support the Outline planning application and as such, no further tree losses are to be considered necessary for the reserved matters application.

5.5 The trees in G21 were assessed as having moderate to low arboricultural quality and therefore their loss will not prove detrimental to the sites wider arboricultural resource and amenity value, especially upon considering the number of trees to be retained and the number of trees to be planted as part of the supporting landscape provision.

5.6 The main access road will firstly pass through the amenity grassland area within the north-east section of the site to the north of the existing Cricket Club entrance before entering the residential parcels. A secondary access road will be taken off the main access to the south side where it will link with the existing access to the Cricket Club entrance and serve a new car park. There will also be a proposed footway and cycleway entering the development from White Post Road, just to the south of the main vehicle access connecting through the residential area to form a circuit around the second, larger open space provision in the west. The footway and cycleway will also connect with other networks beyond the site boundaries. The existing Public Right of Way passing through the site from north to south will be maintained as to will the existing access to Banbury Cricket Club, along the southern boundary.

5.7 The arboricultural impacts arising from the approved main access shall not be commented upon further.

Internal Primary Road Layout

5.8 The main vehicle access will lead directly off White Post Road and be constructed across the proposed open space in the eastern section of the site to serve the residential areas in the central and western parts. The new road will travel in an east to west orientation and link with an internal road proposed in the central parcel. Part way along the access road on the south side, there will be an entrance to a small new car park taken off a secondary access road. The proposed secondary access road to service the new car park will link with the existing access to the Cricket Club.

5.9 Facilitation of the new single priority access to the Banbury Cricket Club would require the removal of T8; a four trees forming G18; a small section of H7, with the remainder of this hedgerow to be removed to facilitate the developable areas. Tree cover in this part of the site was extensive and therefore it is inevitable that some tree losses would need to occur in order to facilitate an access road in this location. The position of the access road has been placed as to avoid impacting on as many of the highest quality trees possible thus ensuring any losses are kept at a minimum.

5.10 A further two specimens forming G18 are also required to be removed to facilitate a MUGA and subsequent parking, linking to the internal primary road layout. Although these trees were assessed as category A due to their collective landscape presence; their individual value is considerably lower. Moreover, due to their early mature forms and relatively small proportions, they can be more readily replaced than other planted specimens in this area.

5.11 T8 was an over-mature horse chestnut, which is afforded statutory protection through a Tree Preservation Order however, the tree was assessed as being in a slightly poorer physiological condition than normal for what would be expected for a tree of such an age. There was major deadwood present within the canopy and indications of infection from the disease; Bleeding Canker of Horse Chestnut, a disease that has the potential to eventually cause the death of a tree in most cases where it occurs. The tree was considered as offering a lower overall arboricultural quality (category C) due to the current compromised physiological health and, more importantly, for having a much-reduced life expectancy due to the presence and nature of the disease identified.

5.12 The removal of T8 should not raise objection on arboricultural grounds especially considering the trees limited future prospects and that mitigation for its loss shall be afforded by new tree planting within the open space provision being proposed.

5.13 If full planning approval is given to the development, the status of the Tree Preservation Order would be overridden however, the manner of its replacement would need to be agreed with the LPA.

RPA Incursions

5.14 Running alongside the primary road leading off the White Post junction shall be a new cycleway. A section of this cycleway shall encroach within the RPA of T7, a category A – high quality tree set to be retained as part of the proposed development. Given that a large majority of the RPA shall be unaffected by the cycleway, generally occurring within less than c. 10% of the calculated rooting area and as such likely to be confined to areas containing minor proportioned fibrous roots, mitigation for the impact shall need to be provided through ensuring all works in these areas are carried out under Arboricultural Supervision through appointment of an Arboricultural Clerk of Works (ACoW). This has been outlined within an appropriately formalised Arboricultural Method Statement (AMS) prepared by FPCR (2019).

5.15 To accommodate the position of the secondary access road leading to the Cricket Club and the area of car parking close to the primary access, several of the trees within G18 would need to be removed due, in several instances, to the level of encroachment in the RPA's of these trees, whilst several further trees are to be retained. Those trees to be removed are however of small proportions and therefore it would be possible to consider translocating those affected and move to a new position along the access road close to the original positions.

5.16 Where RPA's shall be affected by the re-positioning of the access road, particularly the RPA's of trees forming G18, T23 and T24; given their high arboricultural quality, any alterations to the proposed shared access road shall need to be carried out under Arboricultural Supervision through appointment of an Arboricultural Clerk of Works (ACoW). This has been outlined within an appropriately formalised Arboricultural Method Statement (AMS) prepared by FPCR (2019). As most of the access road is pre-existing, this should negate the need for the implementation of no-dig construction techniques, as there is not likely to be any major roots present along the skeleton of the existing access road. With the alterations being appropriately supervised, the detection of any roots can be correctly dealt with, to ensure the safeguarding of any trees affected by the new positioning of the road.

5.17 Having appraised the proposals for any arboricultural implications that may arise as a result of the development layout, it would appear that the layout will, through its design, retain and incorporate the majority of the existing individual trees with losses largely comparable to those discussed and agreed upon during consideration of the outline application.

Tree Management

5.18 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.

5.19 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.

5.20 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.

6.0 NEW TREE AND HEDGEROW PLANTING

6.1 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.

Trees

6.2 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. 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).

6.3 In line with the NPPF all schemes should aim achieve a net gain in biodiversity value. Nationally recognised biodiversity metrics allow for the inclusion of, not limited to, newly planted scattered trees, woodlands and hedgerows as a means of compensating for loss of habitat as part of the development. Tree and shrub planting can therefore be used to contribute to this biodiversity gain.

6.4 To maximise biodiversity value (and contribution to net gain) native species or varieties should be specified. Such provisions can be incorporated into both the hard and soft landscaping of the scheme. It is recommended that tree and hedgerow specifications are made following consultation with guidance published by the Local Planning Authority.

6.5 When designing upon suitable tree species, 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.

6.6 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.

Hedgerows

6.7 Hedgerows are identified as a Habitat of Principle Importance (HPI) as listed within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Consequently, it is important that the proposed scheme delivers a net gain in terms of linear hedgerows through new planting to compensate for any losses. Species should be native, and characteristic of the locality.

6.8 Recommended species for native hedgerow planting are as follows:

- *Crataegus monogyna*
- *Prunus spinosa*
- *Cornus sanguinea*
- *Corylus avellana*
- *Acer campestre*
- *Quercus robur*
- *Euonymus europaeus*

Rooting Environment and Soil Volumes

6.9 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.

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.

6.10 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. Crucially the aim will be 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).

6.11 In a natural environment free from constraints to growth, it has been proven through research that root systems can extend up to three times the radius of the tree crown and although in an urban environment there is often insufficient space to accommodate the extent of the full potential for root growth, all efforts should be made to at least provide as much soil volume as possible. One researched method of calculating the minimum required soil volume is as follows:

Table 3: Example of calculating Soil Volume for New Tree Planting (Source: CIRIA C712 and Calculating Target Soil Volumes – Green Blue Urban)

Projected canopy area of mature tree (m) x depth 0.6m		
Calculation 1	Projected mature canopy diameter (metres)	= 3 (Diameter)
Calculation 2	Projected mature canopy area (square metres), (n x Radius^2)	= 7.1 (Area)
Calculation 3	Target soil volume (cubic metres), (Area x 0.6m)	= 4.24 (Volume)
	Target soil volume	= 4.24m^3

General Planting Recommendations

6.12 Wherever possible, following discussions with the developer and utility companies, common service trenches should be specified to minimise land take associated with underground service provision and facilitation access for future maintenance.

6.13 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.

General Design Principles in Relation to Retained Trees

6.14 In a subsequent Reserved Matters application following the final layout of the scheme, 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.

6.15 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.

6.16 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.

6.17 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.

7.0 TREE PROTECTION MEASURES

7.1 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

7.2 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.

7.3 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.

7.4 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.

7.5 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. Vehicular movements over the root protection area will require the calculation of expected loading and the use of proprietary protection systems.

7.6 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

7.7 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.

7.8 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.

7.9 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.

7.10 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

7.11 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.

7.12 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.

7.13 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.

7.14 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.

7.15 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.

7.16 Notice boards, telephone cables or other services should not be attached to any part of a retained tree.

7.17 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

7.18 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.

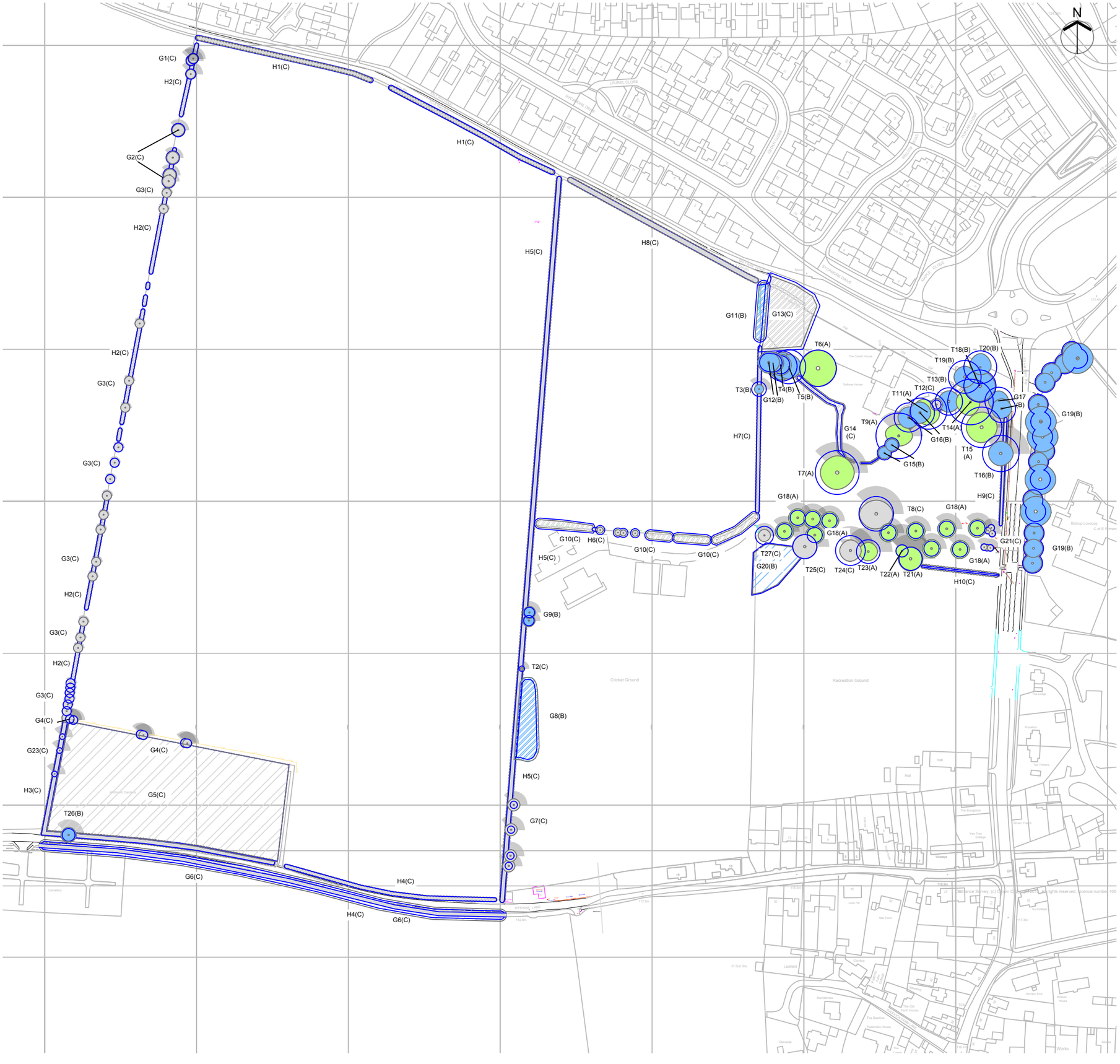
7.19 Any trees which are to be retained and whose Root Protection Areas may be affected by the development should be monitored, during and after construction, to identify any alterations in quality with time and to assess and undertake any remedial works required as a result.

Protection for Aerial Parts of Retained Trees

7.20 Where it is deemed necessary to operate wide or tall plant within close proximity to trees it is best advised that appropriate, but limited tree surgery, be carried out beforehand to remove any obstructive branches as 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.

7.21 A pre-commencement site meeting with contractors who are responsible for operating machinery is advised 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.

7.22 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.



KEY

- Category U - Unsuitable for Retention (BS 5837:2012)
- Category A - Trees of High Quality (BS 5837:2012)
- Category B - Trees of Moderate Quality (BS 5837:2012)
- Category C - Trees of Low Quality (BS 5837:2012)
- Group hatching (Colour indicates BS Category)
- Hedgerow hatching (Colour indicates BS Category)
- Root Protection Area (the RPA has been altered where appropriate to reflect underground constraints)
- T1 (A) TG1 (A) — Individual / Group Number and BS Category
- Indicative Shade Pattern (where appropriate)

Scale 1:2500 @ A3

0 50 100 150m

NOTES

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

Drawing produced in colour, a monochrome copy should not be relied upon, and is based on digital information supplied by the client in dwg format. The exact position of trees are to be checked and verified on site prior to any tree work or construction work being undertaken.

Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by a qualified arboriculturalist or tree surgeon should works commence 12 months after the time of this survey. Please note that no works should be undertaken to any trees illustrated herein without first obtaining the proper authorisation to do so.

rev	date	description	by
-	02.05.19	First Issue	EKP

masterplanning
environmental assessment
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Barratt Homes

project
White Post Road, Bodicote
Banbury

drawing title
TREE SURVEY PLAN

scale	drawn	date
1:2500 @ A3	EKP	May 2019

drawing number
8937-T-01

rev
-

CAD file: K:\8900\8937\ARB\Plans\Tree Survey Plan.dwg

KEY

- Tree/Group to be Retained
- Tree/Group to be removed to facilitate the proposals
- Tree to be removed to facilitate the Access as approved at Appeal (APP/C3105/W/17/3172731
- 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
- Hedgerow To be Removed to facilitate the Access as approved at Appeal (APP/C3105/W/17/3172731)
- Root Protection Area (Shown for retained trees only)
- T1 (A) G1 (A) — Individual / Group Number and BS Category
- Indicative Shade Pattern (where appropriate)

Scale 1:2500 @ A3

0 50 100 150m

NOTES

All dimensions to be verified on site. Do not scale this drawing. 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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rev	date	description	by
-	02.05.19	First Issue	EKP
A	13.05.19	Updated layout	EKP
B	14.05.19	Added access drawing	EKP

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Barratt Homes

project
White Post Road, Bodicote
Banbury

drawing title
TREE RETENTION PLAN

scale	drawn	date
1:2500 @ A3	CTT	May 2019

drawing number
8937-T-02

rev
B

CAD file: K:\8900\8937\ARB\Plans\Tree Retention Plan.dwg

Appendix A - Tree Schedule

<table>
<tr><th>Measurements</th><th>Age Class</th><th>Overall Condition</th><th>Root Protection Area (RPA)</th></tr>
<tr><td>Height - Measured using a digital laser clinometer (m)</td><td>YNG: Young trees up to ten years of age</td><td>G - Good: Trees with only a few minor defects and in good overall health needing little, if any attention</td><td rowspan="4">• The RPA Radius column provides the extent of an equivalent circle from the centre of the stem (m).
• 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.
• Where veteran trees have been identified the RPA has been calculated in accordance with Natural England guidance i.e. 15x the stem diameter, uncapped.</td></tr>
<tr><td>Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837</td><td>SM: Semi-mature trees less than 1/3 life expectancy</td><td>F - Fair: Trees with minor rectifiable defects or in the early stages of stress from which it may recover</td></tr>
<tr><td>Crown Radius - Measured using a digital laser clinometer radially from the main stem (m)</td><td>EM: Early mature trees 1/3 – 2/3 life expectancy</td><td>P - Poor: Trees with major structural and/or physiological defects such that it is unlikely the tree will recover in the long term</td></tr>
<tr><td rowspan="2">Abbreviations
est - Estimated stem diameter
avg - Average stem diameter for multiple stems
upto - Maximum stem diameter of a group</td><td>M: Mature trees over 2/3 life expectancy</td><td>D - Dead: This could also apply to trees in an advanced state of decline and unlikely to recover</td></tr>
<tr><td>OM: Over mature declining or moribund trees of low vigour</td><td rowspan="2">The BS category particular consideration has been given to the following
• The health, vigour and condition of each tree
• The presence of any structural defects in each tree/group and its future life expectancy
• The size and form of each tree/group and its suitability within the context of a proposed development
• The location of each tree relative to existing site features e.g. its screening value or landscape features
• Age class and life expectancy</td></tr>
<tr><td></td><td>V: Veteran tree possessing certain attributes relating to veteran trees</td></tr>
</table>

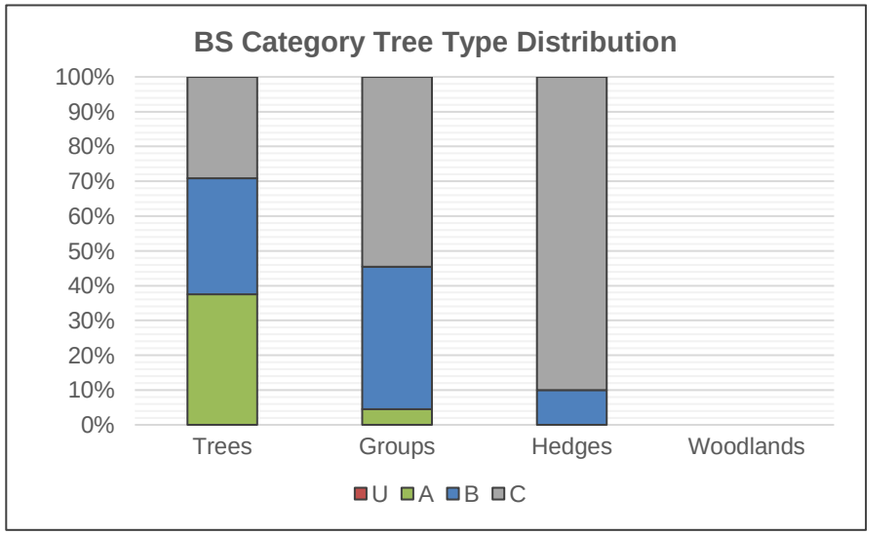
Structural Condition
The following is an example of considerations when inspecting structural condition: • The presence of fungal fruiting bodies around the base of the tree or on the stem, as they could possibly indicate the presence of possible internal decay • Soil cracks and any heaving of the soil around the base • Any abrupt bends in branches and limbs resulting from past pruning • Tight or weak ‘V’ shaped forks 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 past pruning • Broken branches or storm damage • Damage to roots • Basal, stem or branch / limb cavities • Crown die-back or abnormal foliage size and colour

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

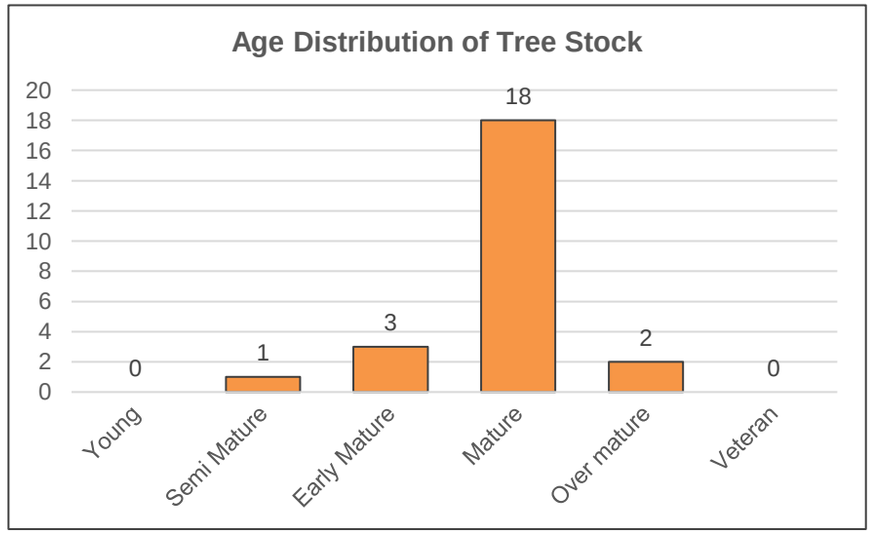
Appendix Summary

	Individual Trees	Totals	Tree Groups and Hedgerows	Totals
Category U		0		0
Category A	T6, T7, T9, T11, T14, T15, T21, T22, T23	9	G18,	1
Category B	T3, T4, T13, T16, T18, T19, T20, T26	8	G8, G9, G11, G12, G15, G16, G17, G19, G20, H9	10
Category C	T2, T5, T8, T12, T24, T25, T27	7	G1, G2, G3, G4, G5, G6, G7, G10, G13, G14, G21, G23, H1, H2, H3, H4, H5, H6, H7, H8, H10	21
	Total	24	Total	32

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
INDIVIDUAL TREES										
T1	Tree no longer present									
T2	Horse Chestnut Aesculus hippocastanum	5	est 150	1	SM	F	Situated within H5 hedgerow Unable to access base Minor deadwood	10	1.8	C (i)
T3	English Holly Ilex aquifolium	8	est 400	3	M	G	Dense canopy typical characteristic of species Previously maintained as a shrub with a tidy appearance Epicormic growth evident within the crown Light ivy cover on the main stem Twin stemmed from circa 2m	72	4.8	B (i)
T4	Common Ash Fraxinus excelsior	16.5	370 670 245 190	9	M	F	Multiple stem union situated at 1.2m above ground Dense ivy covering 8m of the tree stem, which prevented a thorough assessment Minor deadwood evident within the crown Branch stubs Broken branches Interlocking crown Eastern branch rubbing against T5	308	9.9	B (i)
T5	Common Beech Fagus sylvatica	16.5	440 750 350	8	M	F	Flail damage evident on lower half of the southern canopy Stubs had resulted from flail damage Few areas of major deadwood Supressed canopy forms from the present of competing trees Interlocking branches within canopy and against T4 Barbed wire included into main stem Light ivy cover Multi-stemmed from base South western most stem attached through included bark union	397	11.2	C (i)
T6	English Oak Quercus robur	25	est 1000	12	M	G	Multiple stem union forming at approximately 5m above ground. High canopy forming at approximately 13m Situated within a residential garden and therefore I was unable to gain access	452	12.0	A (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T7	English Oak Quercus robur	20	1200	11	M	G	Lower branch removals to raise height of crown to 3m above ground Minor deadwood evident sporadically spread across crown Two torn branches on the south side of the tree's canopy Increment split on major branch; facing east Stubs from past pruning operations Black spots on increment split major deadwood in lower crown Bark wounds evident on the stem and the canopy Exposed roots resulting from poaching of the soil with damage observed Elder basal sucker Woodpecker holes present Large hung up piece of major deadwood on the eastern side at circa 12m above ground level	651	14.4	A (i)
T8	Horse Chestnut Aesculus hippocastanum	18	950	N - 9 S - 10 E - 11 W - 11	OM	P	Major dieback has occurred throughout the canopy Major deadwood evident including a 7m long branch 5m large split on major limb forming a potential hazard beam Exposed wounds and bark necrosis on the stem; most prevalent in the lowest 2m Low canopy in places with just 1 - 2m ground clearance Soil poaching near the roots has occurred that has resulted in exposure Black spots was present on dead branches; indicator of bleeding canker *Pseudomonas syringae pv. aesculi* Specimen in decline Epicormic growth present in the lower crown Pruning wounds Signs of retrenchement Bark wounds Crossing and rubbing branches Lower branches loss of bark Heartwood exposed	408	11.4	C (i)
T9	Holm Oak Quercus ilex	16	est 1250	N - 7 S - 7 E - 9 W - 9	M	G	Minor deadwood evident Dense canopy with a minor amount of interlocking branches Pruning wounds Multileadered form Ivy on main stem Situated offsite by 1m No major defects	707	15.0	A (i)
T10	Tree no longer present									

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T11	Common Lime Tilia x europaea 'Pallida'	25	est 1000	N.E - 6 9	M	G	Dense ivy covering the tree up to 13m above ground Good canopy form Minor deadwood Offsite by 2 -3m Minor deadwood evident Unable to gain access	452	12.0	A (i)
T12	Common Ash Fraxinus excelsior	16	est 250	4	EM	F	Positioned offsite by 1.5m Ivy covering the tree at 9m above ground Supressed canopy caused by T11 and T13 Unable to gain access	28	3.0	C (i)
T13	Common Ash Fraxinus excelsior	22	est 750	7	M	G	Positioned offsite by approximately 2m Stem bifurcates at 5m Minor deadwood evident Ground clearance of 3m No major defects Unable to gain access	254	9.0	B (i)
T14	Copper Beech Fagus sylvatica 'Purpurea'	28	1520	E - 6 9	M	G	Exposed roots on the east side caused by vehicular access Poached soil all round the tree Numerous bulges up to 1m Few areas of major deadwood Typical species form with no major defects Pruning wounds Major and minor deadwood evident in the crown Broken branches Crossing and rubbing branches	707	Capped at 15m	A (i)
T15	Common Beech Fagus sylvatica	25	1110	10	M	G	High proportion of major deadwood in the lower canopy; up to 5m long Small quantity of minor deadwood located sporadically throughout the crown Poached soil all round the tree Exposed and damaged roots on the west side of the tree caused by vehicular access Stubs in the lower half of the canopy from past pruning operations The ground clearance of the canopy was 3m	557	13.3	A (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T16	Common Lime Tilia x europaea 'Pallida'	19	est 1000	8	M	F	Major epicormic growth throughout the tree; typical for cultivar type Exposed and damaged roots on the west side due to vehicular access A very dense canopy with many interlocking branches Minor deadwood mostly on the west side Major deadwood in the upper extent of the canopy Woodpecker holes	452	12.0	B (i)
T17	Tree no longer present									
T18	English Oak Quercus robur	27	880	10	M	F	Ivy covering the tree up to 15m Minor and major deadwood evident within the canopy Large gaps within the crown on the north side Torn branches high in the crown Stubs in lower crown on south side High crown form - first branch circa 10m above ground level Interlocking crowns Etiolated form	350	10.6	B (i)
T19	Common Lime Tilia x europaea 'Pallida'	27	est 900	7	M	F	Minor and major deadwood evident within the canopy Major epicormic growth; typical for cultivar type Offsite by approximately 3m Light ivy cover on the main stem Branch stubs and broken branches in the upper extents of the crown	366	10.8	B (i)
T20	English Oak Quercus robur	26	est 900	N - 9 S - 5 E - 7 W - 7	M	G	Ivy has been severed Minor and major deadwood in the crown Bark wounds and exposed heartwood Basal hollow on the southern face of the stem circa 10-15cm in depth	366	10.8	B (i)
T21	Hornbeam Carpinus betulus	16	630	8	M	G	Minor amount of deadwood evident within the crown Exposed wounds near the base of the tree at 1.5m long Minor amount of epicormic growth on the south side Basal epicormics Upper canopy leaning circa 15 degreed to the east	180	7.6	A (i)
T22	Common Beech Fagus sylvatica	17.5	330	4	EM	G	Typical species form with some pruning wounds No major defects	49	4.0	A (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T23	Sycamore Acer pseudoplatanus	16	650	6	M	G	Minor epicormic growth on the south side at the base Major deadwood in a few areas of the tree's canopy Bifurcated at 8m above ground Pruning wounds Broken branches Branch socket caivities	191	7.8	A (i)
T24	Variegated Sycamore Acer pseudoplatanus 'variegatum'	16	820	7	M	P	Ivy has been severed but it beginning to regrow Minor amount of epicormic growth on the south side situated at base Major deadwood evident including branches 3 - 4m long Minor deadwood also evident	304	9.8	C (i)
T25	Hornbeam Carpinus betulus	16	660	8	OM	P	Lightly sparse canopy Specimen in extensive decline Heartwood exposed Bark wounds circa 1.5m on the northern aspect of the stem and another on the southern face of the stem - the southern wound is the larger of the two approx 2m in height and 50cm wide Branch socket cavities Woodpecker holes	197	7.9	C (i)
T26	Common Ash Fraxinus excelsior	10	350	5	EM	F	Situated in hedgerow Dense ivy cover on the main stem Loss of significant limb on the northern face of the stem circa 5m above ground level Broken branches Pruning wounds Flail damage	55	4.2	B (i)
T27	Holly Ilex aquifolium	8	500	4	M	F	Large holly tree with low crown and basal suckers Northern side of the crown maintained as a hedgerow Central stem hollow to circa 1.5m Pruning wounds Crossing and rubbing branches Minor deadwood within the crown	113	6.0	C (i)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
GROUPS OF TREES										
G1	Field Maple Acer campestre Common Ash Fraxinus excelsior	8	up to 280	3	EM	F	Situated within H2 hedgerow Some of the specimens within the group were closely positioned that resulted in some supressed canopy forms Three trees One field maple with open and low crown form, the second field maple is growing in extremely close proximity to the third tree which is an ash The ash is multi-stemmed and is suspected to be an old hedge lay	35	3.4	C (ii)
G2	3 x Wild Cherry Prunus avium	7	230 290	4	EM	F	Situated within H2 hedgerow Numerous dense canopies within the group Twin stemmed forms within the group forming at approximately 1 - 1.5m Typical species form Branch stubs and broken branches observed Flail damage Dense undergrowth of hedge preventing access to base	62	4.4	C (ii)
G3	Common Ash Fraxinus excelsior Common Beech Fagus sylvatica Wild Cherry Prunus avium Field Maple Acer campestre English Oak Quercus robur Elder Sambucus nigra	4	up to 250	3	EM	G	Situated within H2 hedgerow Some twin stems forming at 1m Typical species form with no major defects	28	3.0	C (ii)
G4	English Elm Ulmus procera Common Hawthorn Crataegus monogyna	up to 7.5	up to 230	3	SM/EM	F	Pruning wounds Multi-stemmed from base The hawthorn appeared as though they were once maintained as shrubs Minor deadwood	24	2.8	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G5	Common Ash Fraxinus excelsior English Elm Ulmus procera Norway Spruce Picea abies Wild Cherry Prunus avium Apple Malus x domestica Sycamore Acer pseudoplatanus Common Pear Pyrus communis	5	avg 140	1 - 2	Y / SM	F	Situated within the allotment that was located towards the south-west corner Trees were sparsely situated Typical species form with no major defects Unable to gain access	9	1.7	C (ii)
G6	Turkey Oak Quercus cerris Small-Leaved Lime Tilia cordata Beech Fagus sylvatica Elder Sambucus nigra Hawthorn Crataegus monogyna Whitebeam Sorbus aria	7	avg 230	4	EM	F	Situated sporadically within H4 hedgerow Ivy cover on the main stems Typical species canopy forms with no major defects	24	2.8	C (ii)
G7	4 x Common Ash Fraxinus excelsior	9	200	4	EM	G	Typical species form with no major defects Situated in hedgerow so unable to access base Light ivy cover Multi-leadered forms	18	2.4	C (ii)
G8	Common Ash Fraxinus excelsior Common Alder Alnus glutinosa	9	avg 300	5	EM	G	Minor deadwood on many specimens within the group One specimen that was situated towards the northernmost area of the group had major dieback The group was densely populated that had resulted in numerous crossing and rubbing limbs Situated offsite	41	3.6	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G9	Norway Maple Acer platanoides	7.5	est 280	4	EM	G	Situated within hedgerow Both specimens contain dense canopies Due to the close proximity of the trees to each other they have resulted in a small amount of interlocking branches	35	3.4	B (ii)
G10	Common Ash Fraxinus excelsior Field Maple Acer campestre Holly Ilex aquifolium	7.5	up to 250	2	EM	F	A minor amount of flail damage on the north side but the tree has maintained a tidy appearance Minor deadwood evident Densely positioned trees have resulted in numerous interlocking branches Screening from cricket buildings Broken branches Bark wounds Close trees have etiolated forms Gaps present in the group More isolated trees have open forms	28	3.0	C (ii)
G11	Midland Hawthorn Crataegus laevigata English Elm Ulmus procera English Holly Ilex aquifolium Hazel Corylus avellana Common Ash Fraxinus excelsior	8.5	avg 350	3	EM	G	Densely populated group resulting in interlocking branches Flail damage on the western side Well maintained Dense ivy Good screening value	55	4.2	B (ii)
G12	Common Beech Fagus sylvatica	16.5	avg 500	7	EM	G	Less than a 2 metre clearance on parts of the southern canopy Interlocking branches present Light ivy cover of the tree up to 4m above ground Leaning stem that is corrected at 1.5m Lightly sparse upper canopy Broken branches Lower stem growing along the griund horizontally before growing vertically Dense holly undergrowth at base - prevented inspection of the base Flail damage Crossing and rubbing branches	113	6.0	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G13	Lawson Cypress Chamaecyparis lawsoniana English Oak Quercus robur Elder Sambucus nigra Plum Prunus domestica English Elm Ulmus procera Whitebeam Sorbus aria	12	avg 400	3	EM/M	F/G	Dense copse that is inaccessible in parts that prevented a thorough assessment Minor and major deadwood evident on many of the trees Some of the specimens had sparse canopies Dense ivy cover Dense undergrowth at base Unable to gain access	72	4.8	C (ii)
G14	Common Hawthorn Crataegus monogyna Elder Sambucus nigra English Holly Ilex aquifolium Small-Leaved Lime Tilia cordata Weeping Willow Salix x sepulcralis 'Chrycosoma' Box Buxus sempervirens Rhododendron sp.	6.5	60	1 - 2	EM	F	The group has been trimmed on the southern side (facing the site) The group is densely populated Small quantity of minor deadwood evident Dense boundary group Etiolated forms	2	0.7	C (ii)
G15	Sycamore Acer pseudoplatanus Common Ash Fraxinus excelsior	Max 11	280 160 220	4	EM	F	Ivy covering the tree up to 7m Sycamore is multi-stemmed from base Interlocking branches within canopy and amongst neighbouring vegetation Multi-stemmed from base	69	4.7	B (ii)
G16	False Acacia Robinia pseudoacacia	16	710 360	7	M	F	The easternmost specimen is twinned stemmed at base Bifurcated stem at 2m on the easternmost tree's most dominant stem The westernmost tree has been felled and left as a monolith of 5m in height Ivy covering the tree Minor and major deadwood	287	9.6	B (ii)

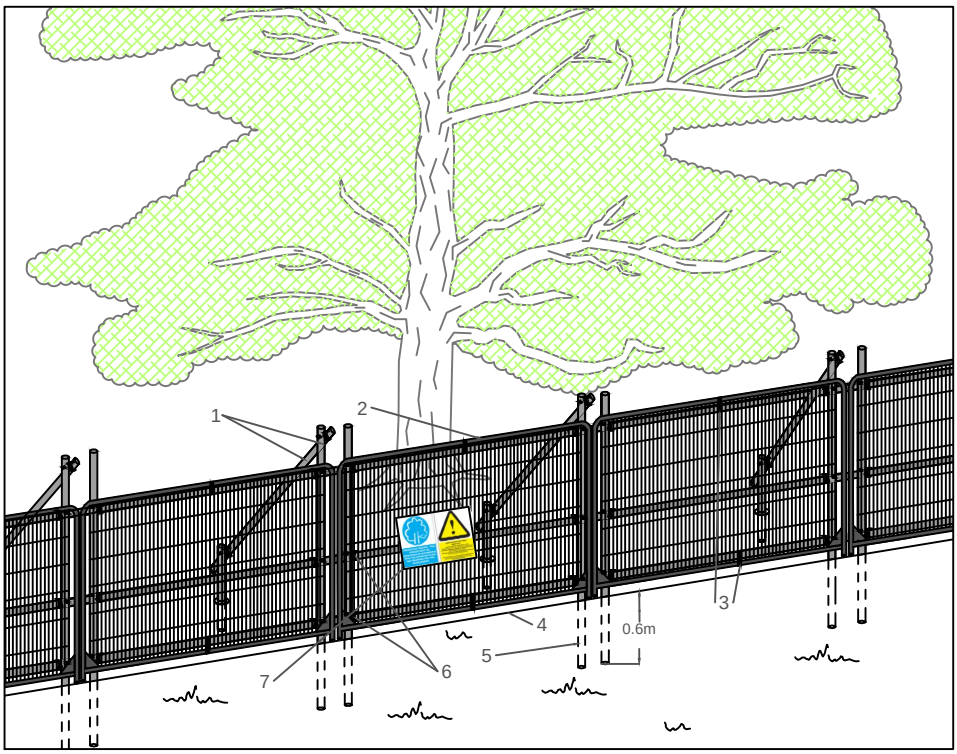
Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G17	2 x Common Lime Tilia x europaea 'Pallida'	23	avg 760	6.5	M	F	The trees were roughly 5m apart Major epicormic growth throughout typical for the cultivar type Minor and major deadwood Exposed and damaged root on the south side due to vehicular access Compression fork formed at stem union Wounds present at base highly dense canopies Numerous interlocking branches Light ivy cover	261	9.1	B (ii)
G18	Copper Beech Fagus sylvatica 'Purpurea'	10	up to 420	6	EM	G	Generally the group had no major defects Well managed avenue of trees	80	5.0	A (ii)
G19	Cappadocicum Maple Acer cappadocicum Common Larch Larix decidua English Oak Quercus robur Common Hawthorn Crataegus monogyna Yew Taxus baccata Sycamore Acer pseudoplatanus Common Beech Fagus sylvatica	21	avg 550	6 - 10	M	G	Major dieback within the crowns including major deadwood Typical species forms The majority of the specimens had no major defects Pruning wounds Unable to gain access Some specimens topped at circa 13m	137	6.6	B (ii)
G20	English Oak Quercus robur Scot's Pine Pinus sylvestris Wild Cherry Prunus avium Field Maple Acer campestre Common Ash Fraxinus excelsior	15	est avg 300	3 - 5	M	G	Failed limbs evident on the Scot's pines located towards the north of the group Ivy present on some of the specimens Minor deadwood throughout Pruning wounds Situated offsite	41	3.6	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G21	Hornbeam Carpinus betulus	6	avg 180	2	SM	G	Typical species form with no major defects Bark wounds Pruning wounds One tree split bark from circa 0.5m to 1.5m	15	2.2	C (ii)
G22	Tree group no longer present									
G23	English Oak Quercus robur Field Maple Acer campestre	7	150	2	EM	F	Situated within H3 3 trees - two field maple and an oak Multi-stemmed from base Light ivy cover Broken branches Flail damage One of the field maples had a high crown form and the second have large quantities of eopicormic regrowth at the base	10	1.8	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
HEDGEROWS										
H1	Elder Sambucus nigra English Elm Ulmus proceraBlackthorn Prunus spinosa Ash Fraxinus excelsior Hawthorn Crataegus monogyna	3	90 40	1	EM	F	Predominantly hawthorn Dense ivy cover Occasional self-seeded hazel specimens Tidy in appearance with a consistent shape and height with very few gaps	4	1.2	C (ii)
H2	Elder Sambucus nigra English Elm Ulmus procera English Oak Quercus robur Hazel Corylus avellana Blackthorn Prunus spinosa Hawthorn Crataegus monogyna	Max 2.5	110	1	EM	F	The hedgerow continues from H1 Predominantly English elms Some dead specimens within the group Flail damage Maintined hedgerow	5	1.3	C (ii)
H3	Elder Sambucus nigra Field Maple Acer campestre English Elm Ulmus procera Common Hawthorn Crataegus monogyna Ash Fraxinus excelsior Hawthorn Crataegus monogyna	3	120	1.5	EM	F	Situated on the south and west border of the allotment Consistent hedgerow with a tidy appearance Dense ivy cover	7	1.4	C (ii)

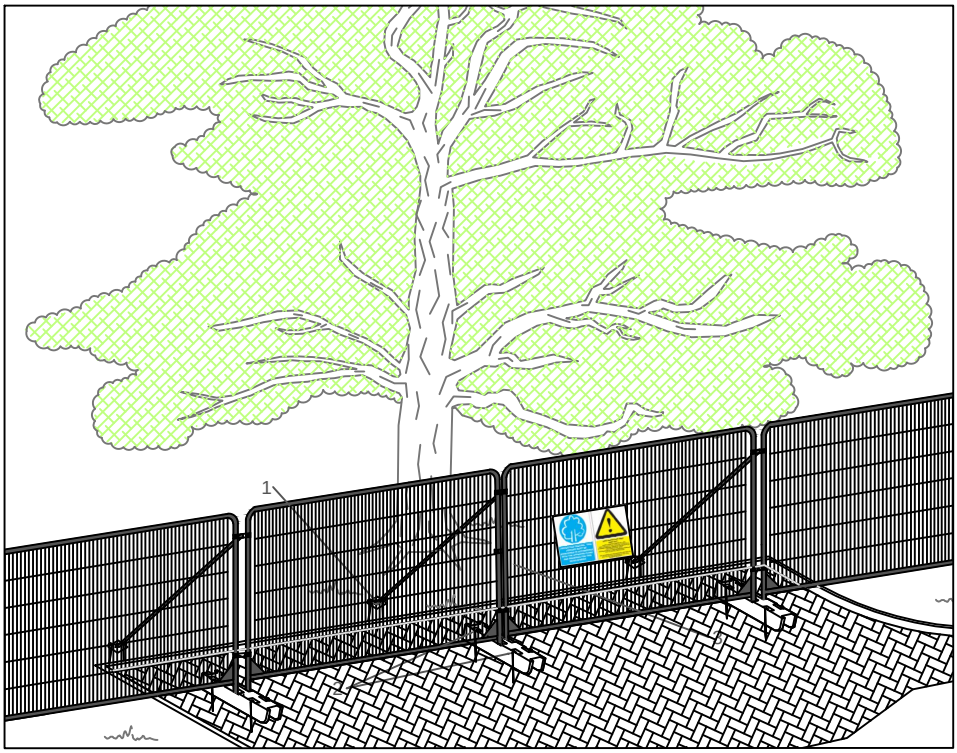
Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H4	English Elm Ulmus procera Elder Sambucus nigra Field Maple Acer campestre Hawthorn Crataegus monogyna	2.5	110	1	SM / EM	G	predominantly elder No major defects	5	1.3	C (ii)
H5	Lawson Cypress Chamaecyparis lawsoniana Small-Leaved Lime Tilia cordata Elder Sambucus nigra English Elm Ulmus procera Blackthorn Prunus spinosa Ash Fraxinus excelsior Field Maple Acer campestre	4	120	1.5	EM	F	Only a minority of the group were lime or cypress. Situated on a western border of a residential garden The hedgerow contained gaps towards the north of the group No major defects Maintained hedgerow - sections maintained at different heights between 2-5m	7	1.4	C (ii)
H6	Common Hawthorn Crataegus monogyna Field Maple Acer campestre	3	80	1	SM	F	Small hedgerow possibly once linked with TG10 No major defects	3	1.0	C (ii)
H7	Common Hawthorn Crataegus monogyna Elder Sambucus nigra English Elm Ulmus procera Holly Ilex aquifolium	2.5	40	1	SM	G	predominantly hawthorn Tidy appearance Occasional dead tree	1	0.5	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H8	Elder Sambucus nigra Common Hawthorn Crataegus monogyna English Elm Ulmus procera Field Maple Acer campestre	2.5	60	1.5	EM	G	Numerous gaps within the hedgerow No major defects Maintained hedgerow Ivy cover on some stems	2	0.7	C (ii)
H9	Common Hawthorn Crataegus monogyna Blackthorn Prunus spinosa Elder Sambucus nigra Sycamore Acer pseudoplatanus	2	30	1	SM	G	Tidy appearance with no major defects Dense ivy cover	0	0.4	B (ii)
H10	Elder Sambucus nigra Blackthorn Prunus spinosa Hawthorn Crataegus monogyna	2.5	20 20 20 20	1	EM	F	No major defects Dense ivy cover Maintained hedgerow	1	0.5	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

masterplanning
environmental assessment
landscape design
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ecology
architecture
arboriculture

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NOTES

drawing title

APPENDIX B
PROTECTIVE FENCING SPECIFICATIONS

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