Newlands Developments

Plot 2, Land west off Sheffield Road, Hoyland

Arboricultural Assessment and Method Statement

August 2021

FPCR Environment and Design Ltd
Registered Office: Lockington Hall, Lockington, Derby DE74 2RH
Company No. 07128076. [T] 01509 672772 [F] 01509 674565 [E] mail@fpcr.co.uk [W] www.fpcr.co.uk

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1.0 INTRODUCTION

1.1 This report has been prepared by FPCR Environment and Design Limited on behalf of Newlands Developments to present the findings of an Arboricultural Assessment and survey of trees located at Sheffield Road, Hoyland, Barnsley (hereafter referred to as the site), OS Grid Ref SK357994.

1.2 The survey was carried out on 27th of April 2020.

Scope of Assessment

1.3 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.

1.4 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.

1.5 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.

1.6 This report has been produced to accompany a full planning application for development on the site, referred to as 'Plot 2, Land West of Sheffield Road, Hoyland'.

1.7 The report has therefore included an assessment of any impact to the tree cover, focussing 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.

Site Description

1.8 The proposed development site comprises 13.71ha in the south of the Hoyland West Masterplan Framework area. The proposed development comprises two storage/ distribution buildings on Plot 2. Land West of Sheffield Road previously gained hybrid planning consent, with Plot 2 forming part of the outline element. Proposed buildings are 15m to haunch (within the parameters of the outline consent for this plot), however the built elements extend slightly further south than the parameters of the previously consented scheme.

1.9 Although not within the application boundary, a broadleaved mixed species woodland locally referred to as Bell Ground is located to the west.

Planning Policy

National Planning Policy Framework July 2021

1.1 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 July 2021.

1.2 Paragraph 10 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.

1.3 In relation to arboriculture, the NPPF also states that:

- *131 'Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined50, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users.*
- *180(b) '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:

- *180(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'.*

1.4 Examples of what is deemed to be *'wholly exceptional'* are included within Footnote 63 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

1.5 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.

1.6 Anyone found guilty of such an offence is liable and in serious cases, may result in prosecution and incur an unlimited fine.

1.7 No direct consultation with the Local Planning Authority has taken place, however, it is understood having used the online search facility on the website for the Local Planning Authority, Barnsley Metropolitan Borough Council that there are no Tree Preservation Orders and Conservation Areas that would apply to any trees present on, or in close proximity to the assessment site and therefore no statutory constraints would apply to the development in respect of trees. Before any tree works are undertaken confirmation of the online information should be sought from the Local Authority.

1.8 Information provided on Tree Preservation Orders and Conservation Areas is accurate to the date of this assessment and cannot be assumed to remain unchanged. The last check was carried out on the 18th of May 2020.

Non-Statutory Considerations

1.9 In order to compile existing baseline information on relevant arboricultural considerations information was requested from both statutory and non-statutory nature conservation organisations. The Multi Agency Geographic Information for the Countryside (MAGIC)[1] website highlighted tree cover within the site as or included within the following:

- The Priority Habitat Inventory, Deciduous Woodland
- The National Forestry Inventory

1.10 The Priority Habitat Inventory is a spatial dataset that describes the geographic extent and location of Natural Environment and Rural Communities Act (2006) Section 41 habitats of principal importance.[2]

1.11 The deciduous woodland inventory is a rolling programme designed to provide accurate information about the size, distribution, composition and condition of forests and woodlands.[3]

1.12 Priority habitat designation and inclusion within the National Forestry Inventory does not provide any statutory protection.

2.0 SURVEY 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 arboriculturist 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, hedgerows or woodland where it has been determined appropriate.

[1] http://magic.defra.gov.uk/
[2] Contains public sector information licensed under the Open Government Licence v3.0.
[3] https://www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/

- 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.
- 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.
- 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'[4]. 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'[5].

2.3 An assessment of individual trees within groups, hedgerows or woodland 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

2.4 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.

2.5 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) 2021, which 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.'[6]

2.6 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.

Ancient Tree

2.7 The definition of an ancient tree has been based on Ancient Tree Guide No. 4 (ATF, 2008) which suggest ancient should be used for a tree that:

'has passed beyond maturity and is old, or aged, in comparison with other trees of the same species.

2.8 Perhaps most notably, the tree concerned should be very old, relative to others of the same species.

[4] http://www.countrysideinfo.co.uk/woodland_manage/whatis.html
[5] http://www.countrysideinfo.co.uk/woodland_manage/whatis.html
[6] Ministry of Housing, Communities and Local Government. (2019). *National Planning Policy Framework.* London: Ministry of Housing, Communities and Local Government.

2.9 Further to this, in accordance with guidance for use in the Ancient Tree Hunt (Owen & Alderman, 2008), as cited within Lonsdale (2013)[7] an ancient tree is one that has all or most of the following characteristics:

a) biological, aesthetic or cultural interest, because of its great age;

b) a growth stage that is described as ancient or post-mature; or

c) a chronological age that is old relative to others of the same species.

Guided by Lonsdale (2013)[6] characteristics a) and b) are mainly based on developmental and morphological criteria whilst characteristic c) relates specifically to chronological age. Developmental characteristics (represented by characteristic b) above) tend to develop with the increasing age of a tree and include:

- A large girth by comparison with other trees of the same species[8]
- Aging and associated decay (leading to hollowing) of the central wood
- Changes in crown architecture (Raimbault, 2006)[9]
- A progressive or episodic reduction in post-mature crown size - 'retrenchment' (Lonsdale 2004; Rust & Roloff, 2002)

In practice calculating the average age / lifespan of a tree is difficult and not always entirely reliable due to a lack of available demographic information. As such, in order to inform the assessment of chronological age, the assessment has made use of stem girth as a guide using the chart provided within Lonsdale (2013) (shown below in figure 1), as well as available historical evidence (mapping etc).

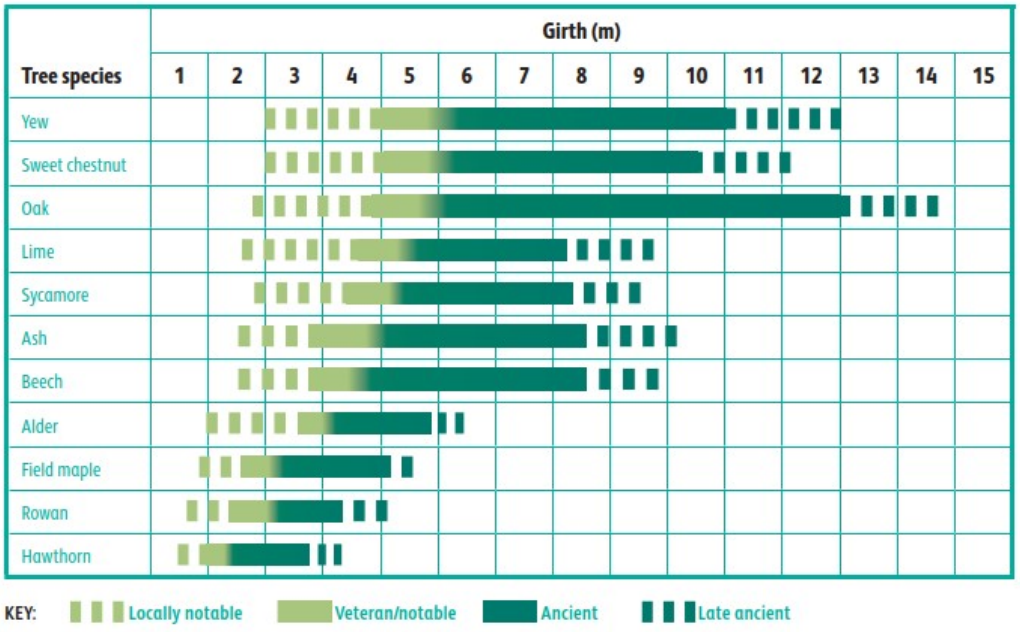


Figure 1: The chart of girth in relation to age and development classification of trees, as shown in Lonsdale (2013)[10].

[7,6] Lonsdale, D. (Ed.). 2013). Ancient and other veteran trees: further guidance on management. London: The Tree Council.
[8] Woodland Trust, Ancient Tree Forum (2008). Ancient Tree Guide no.4: What are ancient, veteran and other trees of special interest?. Grantham: Unknown. 7.
[9] Raimbault, P.F. (2006). A basis for morpho-physiological tree assessment. Pro. Seminar, Arboricultural Association/Treework Environmental Practice, Ashton Court, Bristol, UK, 23rd & 24th March 2006.

Veteran Trees

2.10 The definition of a veteran tree has been based on within Lonsdale (2013) as a tree:

'which has survived various rigours of life and thereby shows signs of ancientness, irrespective of its age'.

2.11 However, for the purpose of the BS5837:2012 assessment, to qualify as a veteran tree, the tree concerned requires a stem girth which is considered large for its species (within the range set out in Fig. 1 above) and shows signs of crown retrenchment and evidence of decay processes in stem, branches or roots such as dead and decaying wood or fungal fruiting bodies of heart-rot (wood decay) species. These trees should also possess significant amounts of dead wood in the crown or fallen about the ground beneath the trees crown.

2.12 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.

2.13 Level 3 of the Specialist Survey Method (SSM) of de Berker & Fay (2004)[11] has also been utilised for gathering survey information as this provides a standardised framework for recording characteristic ancient/veteran features.

BS5837 Categories

2.14 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).

2.15 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.

2.16 **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.

[10] Lonsdale, D. (Ed.). 2013). Ancient and other veteran trees: further guidance on management. London: The Tree Council.
[11] 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.

- Certain category U trees can have existing or potential conservation value which may make it desirable to preserve.

2.17 **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.

2.18 **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.

2.19 **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.

Site Plans

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

2.21 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

2.22 Below ground constraints to future development are represented by tree roots and the soil environment in which they grow which needs to be protected if the tree is to be retained. Tree rooting systems are essential for the uptake of water and nutrients, serving the storage of carbohydrates for the future growth and function of the tree, and form structural anchorage and support for the stem and crown. The perceived rooting area of the tree; referred to as the root protection area (RPA) needs to be protected if the tree is to be retained.

2.23 The RPA is a notional area considered to be the minimum zone that must be protected to avoid any adverse impacts on retained trees. The RPA has been calculated in accordance with Annex C, D and Section 4.6 of BS5837:2012 and requires suitable protection in order for the tree to be successfully incorporated into any future scheme. As such, the RPA of existing trees is an important material consideration when considering site constraints and planning development activities.

2.24 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. 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.

2.25 Whilst it is generally accepted that a trees roots may extend far greater distances than the notional RPA, with the distribution of the root system relating directly to the availability of suitable conditions for growth (namely oxygen, water and nutrients), with roots predominantly located in the upper 1,000 mm of the soil horizon; the RPA offers an accepted protective buffer from development.

2.26 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.

Considerations and Limitations of the Tree Survey

2.27 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.

2.28 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, 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.

2.29 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.

2.30 Hedgerows are identified as a Habitat of Principal 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.

2.31 It may be necessary during detailed design to undertake further assessment and accurate positioning of woody species within tree groups and hedgerows to assist structural calculations for foundation design of structures in accordance with current building regulations. 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.

3.0 RESULTS

3.1 A total of one individual tree and one woodland 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.

Tree Schedule

3.2 Appendix A presents details of any individual trees and woodlands 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.

3.3 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.

Tree Survey Plans

3.4 The individual positions of trees and groups have been shown in the Tree Survey Plan (drwg.no. 9295-T-20). The positions of trees are based on a topographical / land survey, as far as possible, supplied by the client. 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.

3.5 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				
Category A (High Quality / Value)	T56	1	W1	1
Category B (Moderate Quality / Value				
Category C (Low Quality / Value)				

3.6 T56, an ash *Fraxinus excelsior* was located within the northern boundary of W1 Bell Ground woodland offsite. The specimen showed evidence of historic management through pollarding at four metres above ground level and displayed several features characteristic of veteran trees (refer to sub-section paragraphs 2.4- 2.13 and 3.4.-3.6).

3.7 The significant veteran features included a large stem failure evident within the eastern crown which had naturally developed extensive decay and rot at the pollard point providing dead wood habitat. Also present throughout the crown were several large diameter branch socket cavities, high proportions of delaminating and missing bark leading to further evidence of decay processes, several branch stubs resulting from past failures and development of major deadwood. A further significant features was the presence of extensive internal hollowing of the main stem and using a simple percussion test on site, indicated the hollowing to extend from ground level to a minimum of height of 3m above ground level. Significant stem hollowing is a specific associated habitat feature of veteran trees. As such, T56 was considered category A sub-category (iii) due to its high ecological, cultural and historical value as a veteran tree.

3.8 Located outside of the redline boundary to the east W1 is a broadleaved woodland, locally referred to as Bell Ground standing at a height of 15m with varying native species present such as ash *Fraxinus excelsior,* English oak *Quercus robur,* beech *Fagus sylvatica,* goat willow *Salix caprea*, hawthorn *Crataegus monogyna,* silver birch *Betula pendula*. Showing typical woodland characteristics, a category A was given due to its high ecological and landscape value.

Ancient and Veteran Trees

3.9 One of the assessed trees, T56 was considered as being a veteran tree in accordance with accepted methodologies and guidance.

3.10 To afford these trees greater protection, the RPA calculation has been calculated in accordance with the guidelines detailed within Ancient and other Veteran Trees: Further Guidance on Management (Lonsdale, D (ed.) (2013). The Tree Council & Ancient Tree Forum. The RPA is defined as a distance equal to 15 times the trees stem diameter, or five metres beyond the canopy, whichever is the greater (Read, 2000).

3.11 Where this assessment has identified veteran trees, further survey work of those trees and their communities will be required to establish the presence of associated communities. 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.

Woodlands

3.12 W1 is classed as Priority Habitat Inventory - Deciduous Woodland (England) – '*a Lowland mixed deciduous woodland includes woodland growing on the full range of soil conditions… Quercus robur is generally the commoner oak (although Quercus petraea may be abundant locally) and may occur with virtually all combinations of other locally native tree species'* [2]

[2] (https://magic.defra.gov.uk/MagicMap.aspx)

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 Site Plan and seeks to outline the relationship between the proposals and the existing trees. The drawing shows the proposals for a development of employment uses (B8), associated works including, drainage, and landscaping.

4.3 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.

4.4 The proposed development has been 'constraint led' in order to keep the arboricultural impacts to a minimum and has taken into account the value of the existing tree material. This is in part due to the public visual amenity these trees already provide within this sensitive area.

4.5 No tree material will need to be removed to facilitate the proposals. The design of the scheme has retained all existing individual trees and Bell Ground Woodland. The proposals will follow the same footprint to the approved earthworks, leaving adequate clearance from the existing trees on site.

4.6 Alongside the new planting proposed this new landscaping will have a positive impact upon the tree stock upon site and should be a positive enhancement for the local area

Tree Management

4.7 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 arboriculturist or arborist to identify any potential public safety risks and to agree remedial works as required.

4.8 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.

4.9 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.

5.0 NEW TREE AND HEDGEROW PLANTING

5.1 As part of the development proposals an adequate quantity of structured tree planting has been demonstrated. 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

5.2 The landscaping scheme supporting the development proposals has been designed with consideration of 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 have been selected on the basis of their suitability for the final site use.

5.3 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 planting can therefore be used to contribute to this biodiversity gain.

General Design Principles in Relation to Retained Trees

5.4 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.

5.5 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.

6.0 ARBORICULTURAL METHOD STATEMENT AND TREE PROTECTION MEASURES

6.1 All trees retained on site will be protected by suitable barriers and in places ground protection around and within the calculated RPA, crown spreads or other defined constraints of this assessment as detailed by section 6 and 7 of BS5837. The Tree Protection Plan in Appendix C shows the position of the proposed fencing in pink.

6.2 Barriers will be erected prior to commencement of any construction work. 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 appointed arboriculturist.

6.3 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.

6.4 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.

6.5 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

6.6 Tree protection fencing will 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 will be maintained to ensure that they remain rigid and complete for the duration of construction activities on site.

6.7 Fencing will comprise typical construction fencing panels such as Heras panels attached to scaffold poles driven vertically into the ground with supporting struts, acting as a brace added and fixed into position through the application of metal pins driven into the ground to offer additional resistance against impacts.

6.8 Where site circumstances and the risk to retained trees do not necessitate the default level of protection an alternative could be considered, appropriate to the level / nature of anticipated construction activity. The recommended methods of fencing specifications for this site have been illustrated in Appendix B.

6.9 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

6.10 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.

6.11 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.

6.12 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.

6.13 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.

6.14 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.

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

6.16 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

6.17 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.

6.18 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

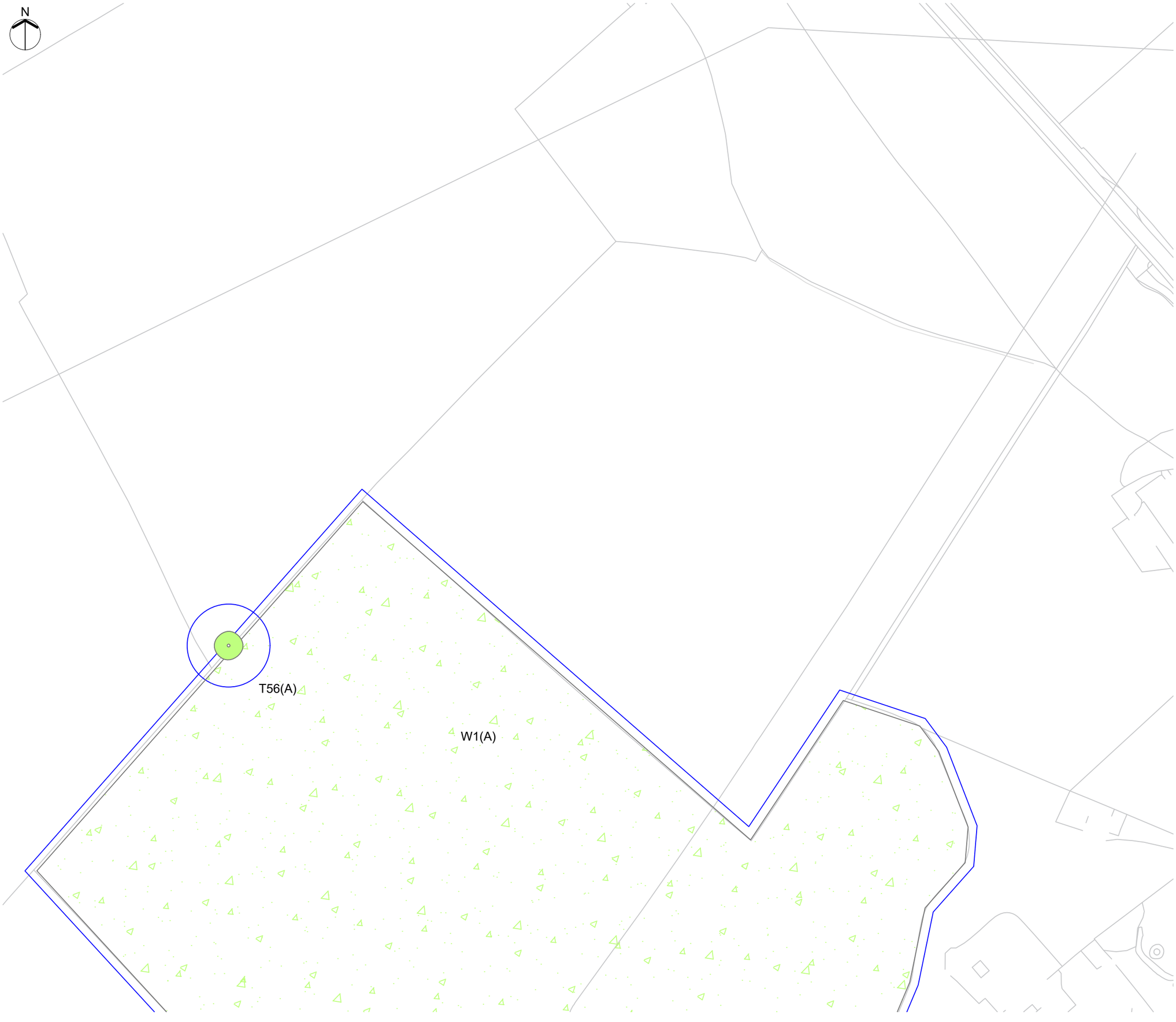
6.19 Where it is deemed necessary to operate wide or tall plant within close proximity to trees it is best advised that appropriate, but limited tree surgery, be carried out beforehand to remove any obstructive branches as any such equipment would have potential to cause damage to parts of the crown 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 arboriculturist.

6.20 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.

6.21 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.

Removal of Protective Fencing

6.22 Following the completion of all construction works and in agreement with the project arboriculturist the tree protection fencing will be removed carefully as to avoid causing root disturbance. This operation can be carried out prior to soft landscaping works such as new planting, mulching, grass sowing etc.



KEY

- Category U - Trees / Groups Unsuitable for Retention (BS 5837:2012)
- 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)
- T1 (A) G1 (A) — Individual / Group Number and BS5837:2012 Category

Scale 1:2000 @ A3

0 50 100m

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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FPCR Environment and Design Ltd
Lockington Hall
Lockington
Derby DE74 2RH

t: 01509 672772
e: mail@fpcr.co.uk
w: www.fpcr.co.uk

client
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project
Plot 2
Hoyland

drawing title
TREE SURVEY PLAN

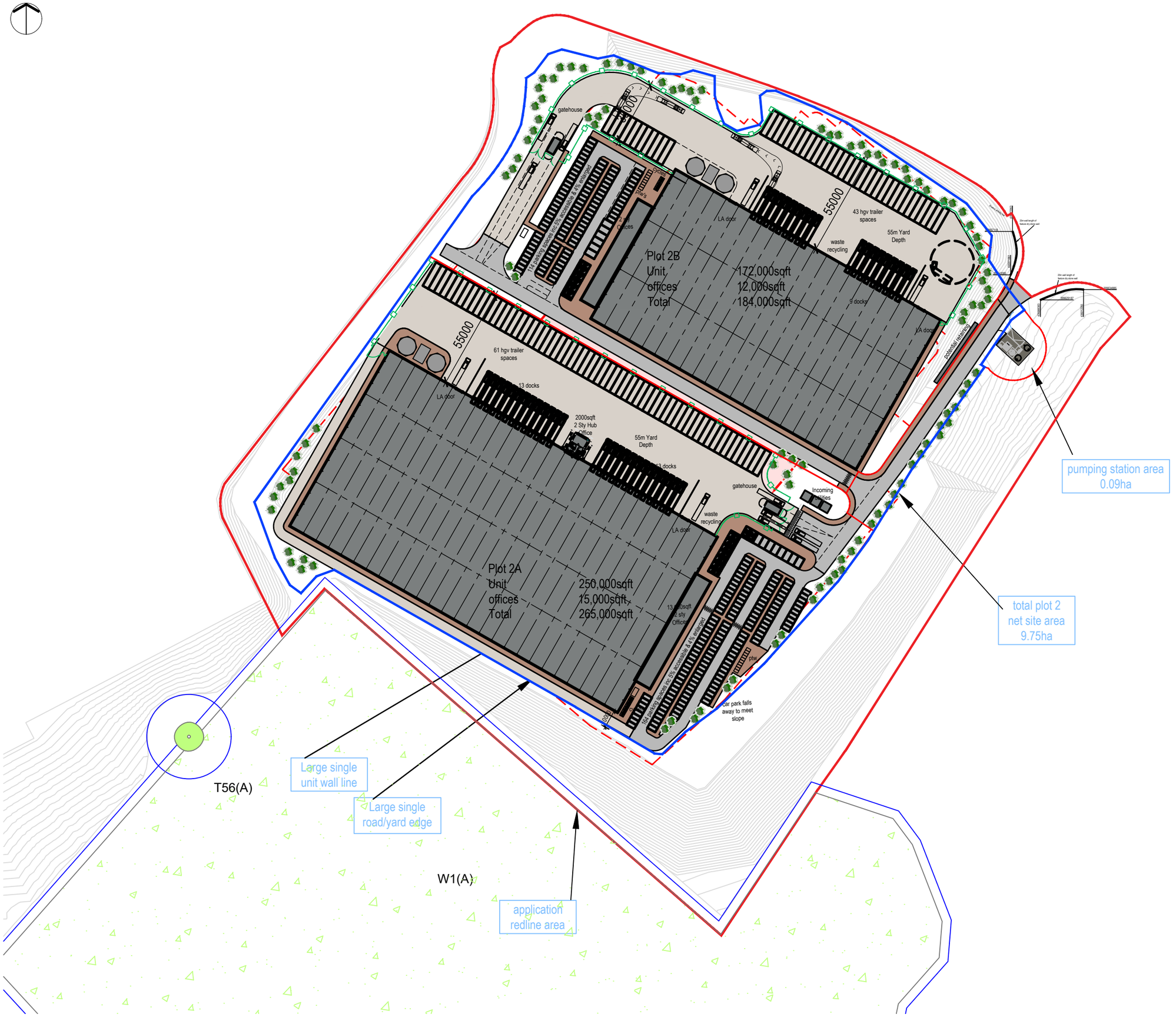
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1:2000 @ A3	AZS / HR	July 2021

drawing number
9295-T-20

rev
-

CAD file: K:\9200\9295\ARB\Plot 2\Plans\Tree Survey Plan.dwg

N



KEY

- Tree/Group to be Retained
- Tree/Group proposed to be removed subject to relevant permissions
- Category U - Unsuitable for retention on arboricultural grounds
- Hedgerow Proposed to be Retained and Incorporated into the New Development
- Hedgerow proposed to be removed subject to relevant permissions
- Root Protection Area (Shown for retained trees only)
- T1 (A) G1 (A) — Individual / Group Number and BS5837:2012 Category
- T1 (A) G1 (A) — Individual / Group Number to be Removed and BS 5837:2012 Category

Scale 1:2000 @ A3

0 50 100m

NOTES

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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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FPCR Environment and Design Ltd
Lockington Hall
Lockington
Derby DE74 2RH

t: 01509 672772
e: mail@fpcr.co.uk
w: www.fpcr.co.uk

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project
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drawing title
TREE RETENTION PLAN

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drawing number
9295-T-21

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N



KEY

- Tree/Group to be Retained
- Hedgerow Proposed to be Retained and Incorporated into the New Development
- Root Protection Area (Shown for retained trees only)
- T1 (A) G1 (A) — Individual / Group Number and BS5837:2012 Category
- 6.0m — Line of Protective Barriers (and distance from tree or retained structure)

Scale 1:2000 @ A3

0 50 100m

NOTES

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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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FPCR Environment and Design Ltd
Lockington Hall
Lockington
Derby DE74 2RH

t: 01509 672772
e: mail@fpcr.co.uk
w: www.fpcr.co.uk

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TREE PROTECTION PLAN

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Appendix A - Tree Schedule

Measurements	Age Classes	Quality Assessment of BS Category	ULE (relates to BS Category)
Height - Measured using a digital laser clinometer (m)	**YNG**: Establishing, typically with good vigour and fast growth rates and strong apical dominance; c. less than 1/3 life expectancy	**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.	<10 years
Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837	**SM:** Semi-mature trees less than 1/3 life expectancy	**Category A -** Trees of high quality with an estimated remaining life expectancy of at least 40 years.	40+ years
Crown Radius - Measured using a digital laser clinometer radially from the main stem (m)	**EM:** Established, typically vigorous and increasing in apical height and lateral spread; 1/3 - 2/3 life expectancy. Offers landscape significance	**Category B -** Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.	20-40 years
Abbreviations est - Estimated stem diameter avg - Average stem diameter for multiple stems upto - Maximum stem diameter of a group	**M:** Fully established over 2/3 life expectancy, generally good vigour and achieving full height potential with crown still spreading	**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.	10-20 years
	OM: Fully mature, at the extremes of expected life expectancy, vigour decreasing, declining or moribund	Sub-categories: (i) - Mainly arboricultural value (ii) - Mainly landscape value (iii) - Mainly cultural or conservation value	
	V: biological, cultural or aesthetic value comprising niche saproxylic habitat. Individuals of large proportions (stem girth) in comparison to trees of the same species/surviving beyond the typical age range for their species.	**The BS category particular consideration has been given to the following:** • 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	

Structural Condition	Physiological Condition
Good - No significant structural defects	**Good -** No significant health problems
Fair - Structural defects that can be remediated	**Fair -** Symptoms of ill-health that can be remediated
Poor - Significant defects beyond remediation, present a risk of failure in the foreseeable future	**Poor -** Significant ill-health. Unlikely the tree will recover in the long term
Dead - Dead tree with structural integrity of tree severely compromised	**Advanced Decline / Dead -** Advanced state of decline and unlikely to recover or Dead

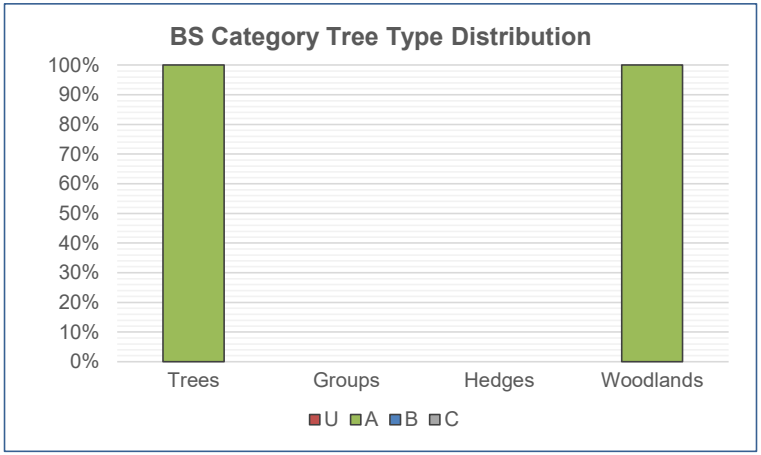
Root Protection Area (RPA)
• The RPA Radius column provides the extent of an equivalent circle from the centre of the stem (m). • The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the rooting area required for a tree to be successfully 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.

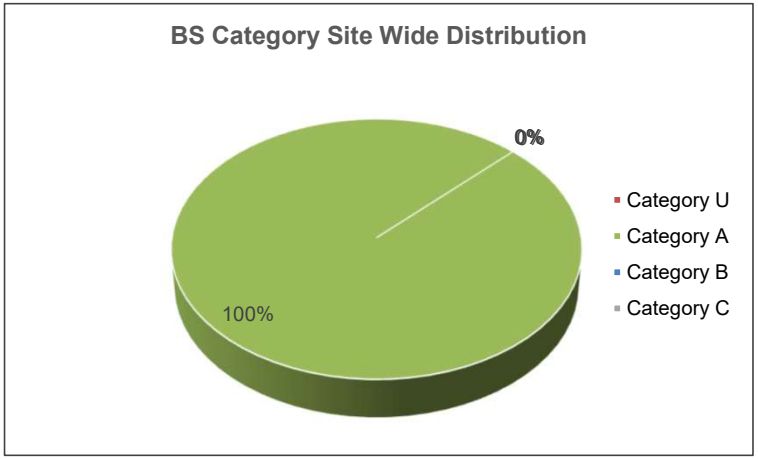
Appendix Summary

	Individual Trees	Totals	Tree Groups and Hedgerows	Totals
Category U		0		0
Category A	T56	1	W1	1
Category B		0		0
Category C		0		0
	Total	1	Total	1

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

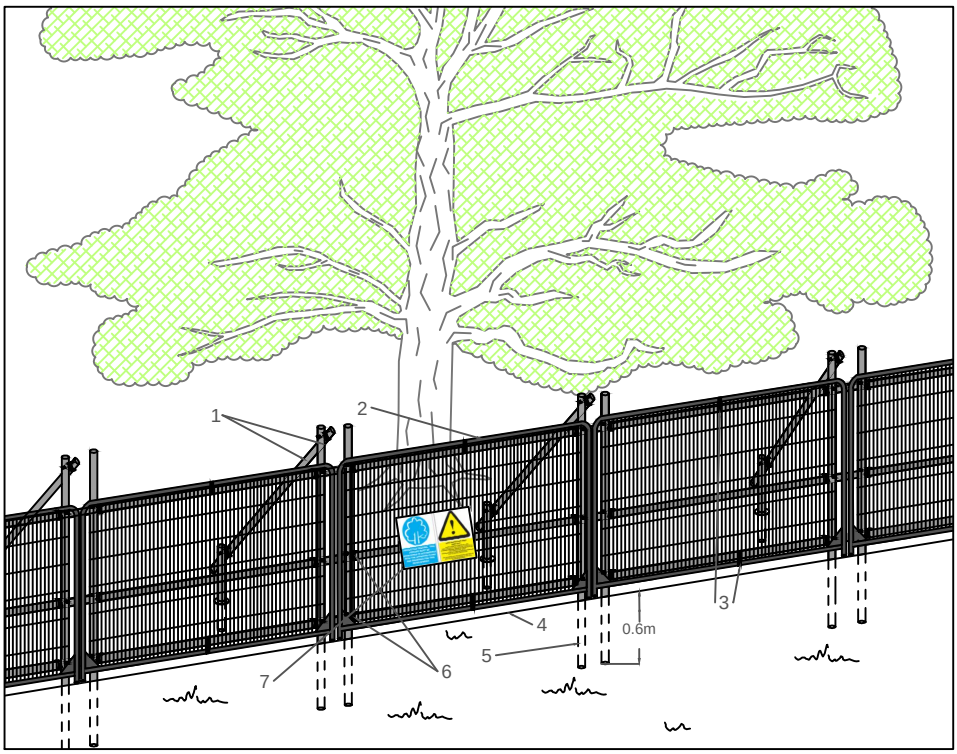
BS Category Site Wide Distribution shows the proportion of trees assessed in each category across the whole site which allows an interpretation of the site's overall quality.





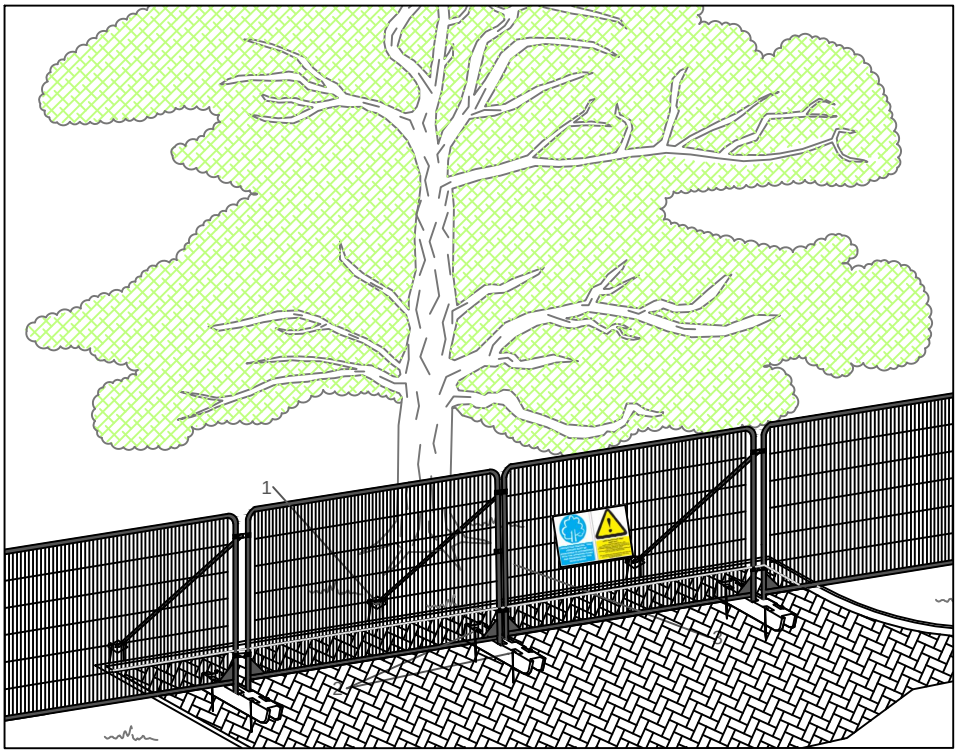
Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
INDIVIDUAL TREES										
T56	Ash Fraxinus excelsior	15	1560	8	V	F	Branch stubs evident Broken branches evident Heartwood exposed Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Pollarded form(s) Pruning wounds noted Loss of eastern crown. Extensive decay at bowl	1720	23.4	A (iii)

Wood No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
WOODLANDS										
W1	Ash Fraxinus excelsior Beech Fagus sylvatica English Oak Quercus robur Goat Willow Salix caprea Hawthorn Crataegus monogyna Silver Birch Betula pendula	15	upto 400	4	EM	F	Characteristic for species Crossing and rubbing branches Interlocking crowns Minor dead wood evident in the crown (<75mm)	72	4.8	A (iii)



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

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FPCR Environment and Design Ltd
Lockington Hall
Lockington
Derby DE74 2RH

t: 01509 672772
f: 01509 674565
e: mail@fpcr.co.uk
w: www.fpcr.co.uk

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APPENDIX B
PROTECTIVE FENCING SPECIFICATIONS

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