Equites Newlands (Goldthorpe) Ltd

Land South of Dearne Valley Parkway, Goldthorpe

Arboricultural Assessment

August 2024

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CONTENTS

TABLES

FIGURES

PLANS

APPENDICES

1.0 INTRODUCTION

1.1 This report has been prepared by FPCR Environment and Design Limited on behalf of Equites Newlands (Goldthorpe) Ltd to present the findings of an Arboricultural Assessment and survey of trees located at Land South of Dearne Valley Parkway, Goldthorpe (hereafter referred to as the site), OS Grid Ref SE 442 035.

1.2 The survey was carried out on 9th August 2022.

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 hybrid application for.

Outline permission sought for the construction of Storage and Distribution (Use Class B8) and General Employment (Use Class B2) space with ancillary offices and gatehouses on four separate, self-contained and severable plots as shown on the submitted Parameters Plan. All matters reserved except for site access.

Full permission sought for engineering infrastructure works to support the employment development comprising: the access roads; earthworks to create the development platform zones/bunding; drainage and culvert works; a flood compensation area; and strategic landscaping areas.

1.7 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.

Site description

1.8 The site comprises several agricultural field parcels situated between the A635 Barnsley Road and Carr Head Lane, Goldthorpe. A635 Barnsley Road forms the northern boundary of the site, with Dudley Drive denoting the eastern boundary, Carr Head Lane demarks the southern boundary and further agricultural field parcels are situated to the west.

1.9 The majority of the site is comprised of arable fields parcels separated by stock fencing, hedgerows and boundary buffer planting. Carr Dike runs through the site and due to the previous land use, most of the tree cover associated with site was restricted to the boundaries and along the edge of the dike.

1.10 The creation of a new roundabout on the A635 Barnsley Road, Goldthorpe, providing access to the site was granted permission by Barnsley Metropolitan Borough Council on 15th February 2022 (Planning reference 2021/1511).

2.0 PLANNING POLICY

National Planning Policy Framework December 2023

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 December 2023.

2.2 Paragraphs 10 and 11 of the NPPF state 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'.*

2.3 In relation to arboriculture, the NPPF states that:

- *136 '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-lined (footnote 53), 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'. (footnote 53: unless, in specific cases, there are clear, justifiable and compelling reasons why this would be inappropriate)*
- *186 (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 (footnote 67) and a suitable compensation strategy exists'.*

  and provides specific guidance that:

- *186 (d) 'development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate'.*

2.4 With reference to paragraph 186 (c), examples of what is deemed to be *'wholly exceptional'* are included within Footnote 67 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'.*

Local Planning Policy

2.5 Local planning decisions regarding all future developments are assessed against a framework to ensure that the district or county in question is developed in a well-informed and coherently systematic manner, this may include decisions to ensure that the right number and types of houses are built and incorporating the correct type of shopping and recreation facilities, whilst protecting the local ecological resources, landscape context and intrinsic heritage value of an area.

2.6 Within the context of Barnsley Local Plan adopted January 2019, the following policy relating to biodiversity and trees.

Policy BIO1 Biodiversity and Geodiversity

Development will be expected to conserve and enhance the biodiversity and geological features of the borough by:

Protecting and improving habitats, species, sites of ecological value and sites of geological value with particular regard to designated wildlife and geological sites of international, national and local significance, ancient woodland and species and habitats of principal importance identified via Section 41 of the Natural Environment & Rural Communities Act 2006 (for list of the species and habitats of principal importance) and in the Barnsley Biodiversity Action Plan.

Maximising biodiversity and geodiversity opportunities in and around new developments.

Conserving and enhancing the form, local character and distinctiveness of the boroughs natural assets such as the river corridors of the Don, the Dearne and Dove as natural floodplains and important strategic wildlife corridors.

Proposals will be expected to have followed the national mitigation hierarchy (avoid, mitigate, compensate) which is used to evaluate the impacts of a development on biodiversity interest.

Protecting ancient and veteran trees where identified.

Encouraging provision of biodiversity enhancements.

Development which may harm a biodiversity or geological feature or habitat, including ancient woodland and aged or veteran trees found outside ancient woodland, will not be permitted unless effective mitigation and/or compensatory measures can be ensured.

Development which adversely effects a European Site will not be permitted unless there is no alternative option and there are imperative reasons of overriding public interest (IROPI)

2.7 The site is also allocated as employment land within the Barnsley Local Plan with the following site-specific policies.

ES10 Land South of Dearne Valley Parkway

The development will be subject to the production of a phased Masterplan Framework and will be expected to:

Protect and enhance biodiversity value including possible impacts on the Golden Plover population and on the nearby Old Moor RSPB reserve and ensure that the development avoids impacts or incorporates effective mitigation measures. Any impact on the golden plover habitat will be expected to be mitigated by either;

a. On-site creation of optimal agricultural conditions for fields to be retained; or

b. Creating suitable compensation habitat for the species off-site but nearby.

Provide a contribution towards improvements to biodiversity within the Dearne Valley Green Heart Nature Improvement Area;

Include the creation of a habitat corridor (at least 8m in width) along Carr Dike and a sustainable drainage scheme to ensure that rainwater falling on the site is still able to drain into the Dike aiming to improve water quality;

Improve the highway network to mitigate the impact of additional traffic generated by the development on surrounding roads and in particular effects on the A635 and other strategic road links to the A1/M and M1 motorways;

Provide appropriate access to housing site reference HS51 from Billingley View through the south east corner of the site;

Retain the existing woodland and hedgerows on the site periphery;

Retain the section of hedgerow remaining in the north-west corner of the site;

Avoid locating any built development in Flood zones 2 and 3;

Safeguard the setting of the Billingley Conservation Area;

Give consideration to Carr Dike and the connecting unnamed ordinary watercourse which run through the site; and

Provide an air quality assessment to assess the impacts of traffic emissions within air quality management areas along the A635 and other strategic road links to the A1/M and M1. Any adverse impacts on air quality should be mitigated in accordance with policy AQ1.

Archaeological remains are known to be present on this site. The site area has been reduced to allow flexibility in the development to ensure the remains can be preserved in situ if necessary.

2.8 Barnsley Metropolitan Borough Council have also produced a Supplementary Planning Document on Trees and Hedgerows which was adopted May 2019 and provides further advise on the trees and hedgerows in the context of development proposals. The advice within this document has been considered as part of this assessment.

Statutory Considerations

2.9 Local authorities have a Duty under the Town and Country Planning Act to create Tree Preservation Orders (TPO) 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 wilfully 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.

2.10 No direct consultation with the Local Planning Authority, Barnsley Metropolitan Borough Council, has taken place, however, it is understood having used the online search facility on their website that there are no Tree Preservation Orders and Conservation Areas that would apply to any trees present on, or in 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.

2.11 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 25th March 2024.

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 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.

3.2 Trees have been assessed as groups and 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.
- 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.

3.3 An assessment of individual trees within groups and hedgerows has been made where a clear need to differentiate between them, for example, to highlight significant variation between attributes including physiological or structural condition or where a potential conflict may arise.

BS5837 Categories

3.4 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).

3.5 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.

3.6 **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.

3.7 **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.

3.8 **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.

3.9 **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.

Ancient and Veteran Trees

3.10 Ancient and Veteran trees are important components of the landscape, their importance can be for several reasons including that of their ecological, social, cultural and historic value.

3.11 Ancient and Veteran trees 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.'[1]

3.12 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.

3.13 However, for the purpose of this 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 below) 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.

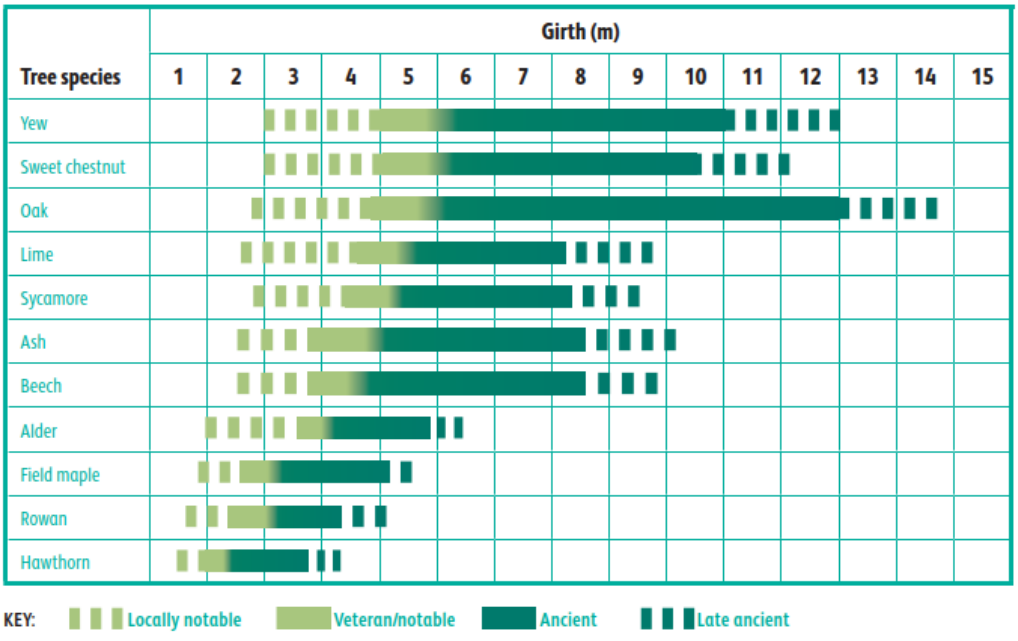


Figure 1: The chart of girth in relation to age and development classification of trees, as shown in Lonsdale (2013)[2].

[1] Ministry of Housing, Communities and Local Government. (2019). *National Planning Policy Framework.* London: Ministry of Housing, Communities and Local Government.
[2] Lonsdale, D. (Ed.). 2013). Ancient and other veteran trees: further guidance on management. London: The Tree Council.

3.14 In principle, 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.

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

Considerations and Limitations of the Tree Survey

3.16 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.

3.17 The statements made in this report and the assessment of tree condition given applies to the date of survey and cannot be assumed to remain unchanged.

3.18 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.

4.0 RESULTS

4.1 A total of 30 individual trees, 23 groups of trees and 15 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.

Tree Schedule

4.2 Appendix A presents details of all individual trees, groups, hedgerows and woodlands recorded during the assessment including heights, diameters at 1.5m from ground level, 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.

4.3 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.

[3] 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.

Survey Plan

4.4 The individual positions of trees, groups and hedgerows 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. 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 (RPA) and shade pattern (where appropriate) are also indicated on this plan.

4.5 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 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.

Results Summary

4.6 The site area north of Carr Dike was made up of large arable field parcels divided by maintained hedgerows that supported occasional mature trees. Ash *Fraxinus excelsior* and English oak *Quercus robur* were the principal tree species recorded and the hedgerows contained a mix of species but mostly comprised of hawthorn *Crataegus monogyna.*

4.7 The site area south of Carr Dike was largely devoid of internal tree cover with tree cover being restricted to the site boundaries and comprising both maintained and outgrown hedgerows and off-site tree groups situated within Aldi Goldthorpe RDC and Heather Garth Primary Academy.

4.8 The table below summarises the trees assessed and several of the trees have been discussed in more detail following the table, owing to their physical condition or arboricultural significance.

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)	T10, T11, T12, T13, T17, T19, T20, T24, T27	9	G15	1
Category B (Moderate Quality / Value	T3, T5, T6, T7, T8, T14, T15, T16, T18, T22, T23, T28, T30	13	G2, G3, G4, G5, G6, G9, G10, G11, G12, G13, G14, G16, G18, G19, G20, G23, H5, H6, H12, H15	20
Category C (Low Quality / Value)	T1, T2, T4, T9, T21, T25, T26, T29	8	G1, G7, G8, G17, G21, G22, H1, H2, H3, H4, H7, H8, H9, H10, H11, H13, H14	17

4.9 Tree cover on the site is considered typical of the open countryside, with a mix of unmaintained and maintained hedgerows forming field boundaries which supported occasional mature trees and more established tree groups which included areas of new tree planting along Carr Dike. The tree cover recorded was mostly of mature proportions and considered of moderate and high quality, from an arboricultural perspective.

4.10 Fifteen of the thirty individual trees recorded on the site were English oak. These trees were mostly of good condition and by virtue of the long-lived nature of oak trees, would all have a life expectancy greater than 40 years, being recorded as category A (high arboricultural quality and value) or category B (moderate quality and value). With trees T10, T11, T13, T17, T19, T20, T24 and T27 being considered particularly good examples of species.

4.11 Ash trees recorded on the site were of varied condition, with some showing signs of previous failure either from the main stem or branches / crown parts. For their maturity and condition, trees T5, T8, and T30 were recorded as being retention category B (moderate quality and value) with T25 being recorded as retention category C (low quality and value) as its structural condition had been compromised.

4.12 A total of twenty-three tree groups were recorded being of varying size and condition, these groups were mostly limited to the external field boundaries and along Carr Dike. Tree groups were dominated by English oak, common ash, and sycamore *Acer pseudoplatanus*, along with an abundance of hawthorn, blackthorn *Prunus spinosa*, English elm *Ulmus procera* and holly *Ilex aquifolium*.

4.13 Several tree groups were recorded along Carr Dike, the most notable of which was G15 a group of mature sycamore which provided visual amenity and was considered retention category A. Tree groups G10, G14, G16 and G18 were also recorded along the dike with G10, G16 and G18 comprising semi mature mixed species planted tree groups which were graded retention category B, as they lacked the quality necessary to merit higher classification but collectively they had moderate landscape value.

4.14 Boundary tree groups which included G2, G3, G4, G5, G6 G12, G13, G19, G20 and G23 were similarly graded retention category B, for their collective landscape value, providing screening to the site from Barnsley Road to the north, Carr Head Lane to the south and the Aldi Goldthorpe RDC and Heather Garth Primary Academy to the east.

4.15 Hedgerows were found on the boundaries of the field compartments and were a mix of native species with hawthorn and English elm being the dominant composition along with occasional elder *Sambucus nigra*, blackthorn *Prunus spinosa* holly and hazel *Corylus avellana*.

4.16 Arboriculturally, most hedgerows were graded retention category C (low quality and value) however the tree survey conducted, in accordance with BS5837, does not assess hedgerows against the Hedgerow Regulations 1997 or specifically from an ecological perspective.

Ancient and Veteran Trees

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

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 Landscape Masterplan and seeks to outline the relationship between the proposals and the existing trees and hedgerows.

5.3 The drawing shows the proposals for outline permission for the construction of Storage and Distribution (Use Class B8) and General Employment (Use Class B2) space with ancillary offices and gatehouses on four separate, self-contained and severable plots. All matters reserved except for site access. Full permission sought for engineering infrastructure works to support the employment development comprising: the access roads; earthworks to create the development platform zones/bunding; drainage and culvert works; a flood compensation area; and strategic landscaping areas.

5.4 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.

Impact Summary

5.5 The tables below summarises the impact on tree stock and these impacts have been discussed in more detail following the table.

Table 2: Summary of Impact on Tree Stock

	Trees/groups to be Retained	Total	Trees/groups to be Removed	Total
Category U - Unsuitable		0		0
Category A (High Quality / Value)	T10, T11, T12, T13, T24 G15	5 1	T17, T19, T20, T27	4 0
Category B (Moderate Quality / Value	T3, T6, T7, T8, T23, T28, T30 G2, G3, G4, G5, G6, G9, G10, G12, G13, G14, G16, G18, G19, G20, G23, H5, H12, H15	7 18	T5, T14, T15, T16, T18, T22 G11, H6,	6 2
Category C (Low Quality / Value)	T1, T2, T4, T9, T25, T26 G1, G7, G8, G21, H1, H2, H3, H4, H9, H10, H11,	6 11	T21, T29 G17, G22, H7, H8, H13, H14	2 6

5.6 To achieve development of this scale will unavoidably require significant ground works and level changes, to create large level platforms that could house the commercial units. These ground works will require the removal of internal tree cover within the north of the site with it being both unfeasible and unworkable to design such a development around the retention of these individual trees and hedgerows.

5.7 The development has instead been designed around the retention of larger areas of existing tree cover, including tree cover along Carr Dike to provide maturity to the internal landscaping and screening between units, and around the site boundaries to maintain the current level of screening this provides to the site.

5.8 The table below details the tree removal, providing reasons for the removal of each tree and tree group identified to be removed.

Table 3: Impacts to Tree Stock

	Trees to be Removed in full or part	Reason
Category A (High Quality / Value)	T17	Tree is situated within the Zone 1 building footprint.
	T19	Tree is situated within the Zone 1 building footprint.
	T20	Tree is situated within the Zone 1 building footprint.
	T27	Tree is situated within the flood compensation which is to be excavated to create a drainage basin.
	G15 (approximately 15m)	Group G15 is partially impacted (approximately 15m) by a proposed crossing point over the existing dyke. The position of the proposed crossing point was chosen to create a suitable road junction, within the constraints of the site boundary and maintaining suitable visibility splays at the junction. A key consideration was to keep the road crossing perpendicular to the watercourse to minimise the length of culvert required, whilst also looking to minimise impact on the existing flood plain in this area.

	Trees to be Removed in full or part	Reason
Category B (Moderate Quality / Value	T5	Tree is directly impacted by the earthworks required to create the Zone 2 plateau. See Tree Retention Plan – Earthworks 10744-T-03
	T14	Tree is directly impacted by the earthworks for the main spine road. See Tree Retention Plan – Earthworks 10744-T-03
	T15	Tree is situated within the Zone 1 footprint.
	T16	Tree is situated within the Zone 1 footprint.
	T18	Tree is situated within the Zone 1 building.
	T22	Tree is situated within the Zone 1 building.
	G5	Group is partially impacted (approximately 20m) by a highway connection running across the southeast corner of the site.
	G10 (approximately 20m)	Group G10 is partially impacted (approximately 20m) by a proposed crossing point over the existing dyke. The position of the proposed crossing point was chosen to create a suitable road junction, within the constraints of the site boundary and maintaining suitable visibility splays at the junction. A key consideration was to keep the road crossing perpendicular to the watercourse to minimise the length of culvert required, whilst also looking to minimise impact on the existing flood plain in this area.
	G11	Group is shown to be removed in its entirety being situated within the Zone 2 footprint.
	G13	Group is partially impacted (approximately half of the group west of the approved access) to allow for the creation of the flood compensation area requiring level changes to create a drainage basin.
	G19	Strip of trees (up to 4m wide) being removed from the edge of the group to create the proposed screening bund. See Tree Retention Plan – Earthworks 10744-T-03
	H6	Hedgerow is shown to be removed in its entirety being situated within the Zone 2 footprint (180m length)

	Trees to be Removed in full or part	Reason
Category C (Low Quality / Value)	T21	Tree is situated within the Zone 1 building footprint.
	T29	Tree is situated within the flood compensation which is to be excavated to create a drainage basin.
	G17	Group is shown to be removed in its entirety being situated within the Zone 1 footprint and spine road (approximately 160m).
	G22	Christmas tree plantation directly impacted by proposed screening bund and flood attenuation area.
	H3	Hedgerow is partially impacted (approximately 55m) by a proposed crossing point over the existing dyke.
	H4	Hedgerow is partially impacted (approximately 100m) by a highway connection running across the southeast corner of the site.
	H7	Hedgerow is shown to be removed in its entirety being situated within the Zone 1 footprint and flood attenuation area (approximately 165m).
	H8	Hedgerow is shown to be removed in its entirety being directly impacted by proposed screening bund (approximately 270m).
	H13	Hedgerow is shown to be removed in its entirety being directly impacted by proposed screening bund and flood attenuation area (approximately 275m).
	H14	Hedgerow is shown to be removed in its entirety being directly impacted by proposed screening bund and flood attenuation area (approximately 100m).

5.9 Of the nine individual trees recorded as being of high quality (Category A), four would be impacted by the development. All four are situated within a field boundary hedgerow within the north of the site that cannot be feasibly designed around. The proposals have however been designed around the retention of T13, a high-quality English oak at the southern end of this hedgerow which would be retained within a buffer strip. While the removal of these four high quality trees will result in an arboricultural impact none were considered as ancient or veteran.

5.10 G15 a mature group of sycamore situated along Carr Dike is the only high quality tree group recorded on the site. G15 has been shown as retained within the landscape buffer along Carr Dike. Although a section (approximately 15m) would be impacted to allow for the creation of a vehicular crossing point over the dike.

5.11 A total of six individual trees, one tree group and one hedgerow recorded as moderate quality (Category B) are shown to be removed, along with the part removal of G10 to allow for the creation of a vehicular crossing point over the dike, the part removal of G13 necessary for ground works in the north of the site and the part removal of G19 necessary to allow for the realignment of a HV cable in the north of the site.

5.12 Much of this tree cover is situated centrally within the site and is either directly impacted by the proposed development or impacted by level changes necessary to implement the development which does not allow for their retention.

5.13 Boundary tree cover, much of which was recorded as being moderate quality, has been retained to maintain the current level of screening it provides to the site. This tree cover would also be enhanced and improved through substantial new buffer tree planting illustrated along the site's northern and eastern boundaries.

5.14 A small section of tree cover along the southern boundary is being impacted by a highway connection to the HS51 development, to the south of the site which was requested as part of the site-specific policies (*ES10 Land South of Dearne Valley Parkway).*

5.15 New buffer tree planting illustrated along several of the site boundaries and extensive new structural landscaping illustrated across the site which will include new tree planting will significantly increase tree cover across the site and provide mitigation for the proposed tree removal.

5.16 A total of two individual trees, two tree groups which includes G22, a small Christmas tree plantation and four hedgerows recorded as low quality (Category C) are shown to be removed, along with the part removal of two further low-quality hedgerows H3, to allow for the creation of a vehicular crossing point over the dike and H4, for the future highway connection to HS51 development.

5.17 This tree cover is either directly impacted by the proposed development or impacted by level changes necessary to implement the development. Being considered of low quality their removal should raise no objection and could be mitigated for through new tree and hedgerow planting.

5.18 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 and subsequently it is important that the proposed scheme delivers a net gain in terms of linear hedgerows through new hedgerow planting to compensate for these losses.

5.19 The proposed route of underground utilities (HV and Water Main) has been shown on the Tree Retention Plan. The routes have been designed to largely avoid trees and RPA, but where the HV cable is shown to be installed within the existing grassed verge south of the A635 Barnsley Road it encroaches within the RPA of T6, T7, T8, T30, G12 and G23.

5.20 The existing verge should accommodate this HV cable and allow for the retention of this tree cover, but the installation of this cable should follow the guidance given in section 7.7 of BS5837 and NJUG Volume 4 and should be detailed within a site-specific Arboricultural Method Statement should the application be approved, ensuring precautions are taken to minimise damage to the root systems of these retained trees.

Discussion

5.21 With regards to trees, the site-specific policy *(ES10 Land South of Dearne Valley Parkway)* requests that existing woodland and hedgerows on the site periphery are retained along with the section of hedgerow remaining in the north-west corner of the site and provides general guidance that consideration should be given to Carr Dike and the connecting unnamed ordinary watercourse which run through the site.

5.22 It is considered that the proposals meet the objectives of this policy along with the objects of national and local planning policies, through the retention of a high proportion of the existing tree cover along Carr Dike and around the site boundaries, as far as can be achieved, whilst delivering the scheme.

Tree Management

5.23 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 to satisfy the landowner's duty of care. Tree inspections should be carried out with regular frequency and following major storms by an experienced arboriculturist or arborist to identify any potential public safety risks and to agree remedial works as required.

5.24 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.

5.25 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 new tree planting should be provided across the development to suitably mitigate for the required tree and hedgerow loss. This new tree and hedgerow planting will be detailed within a landscaping scheme submitted as part of a subsequent reserve matters application.

6.2 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.

6.3 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.

6.4 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.

7.0 TREE PROTECTION MEASURES

7.1 Retained trees should be adequately protected during works through the erection of the requisite tree protection barriers. Measures to protect trees should follow the guidance in BS5837 and 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 Arboriculturist.

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 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.

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 proximity to retained trees.

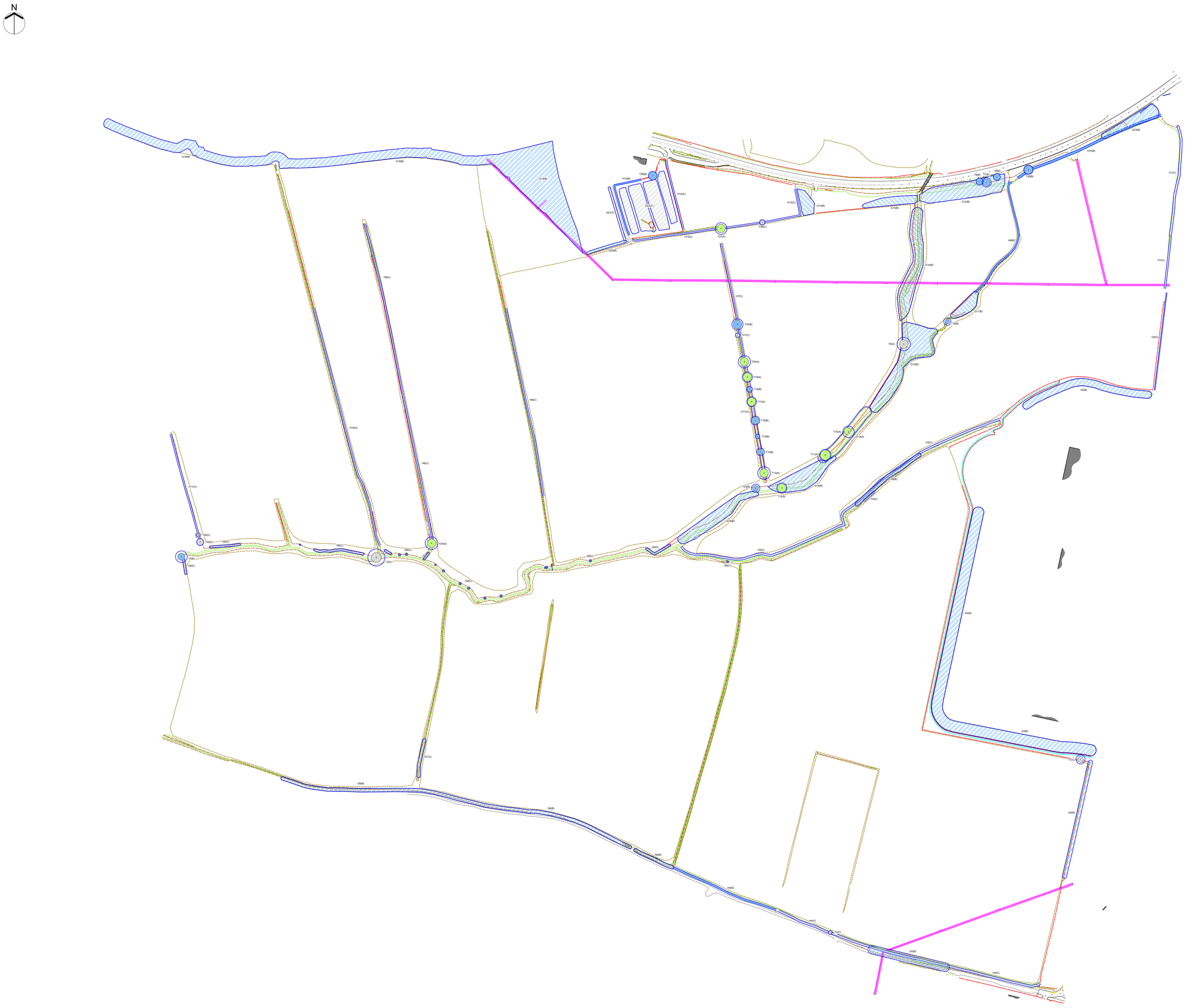
7.14 Oil, bitumen, cement or other material that is potentially injurious to trees should not be stacked or discharged within 10m of a tree stem. No concrete should be mixed within 10m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree.

7.15 Fires on sites should be avoided if possible. Where they are unavoidable, they should not be lit in a position where heat could affect foliage or branches. The potential size of a fire and the wind direction should be taken into account when determining its location, and it should be attended at all times until safe enough to leave.

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

Protection for Aerial Parts of Retained Trees

7.17 Where it is necessary to operate wide or tall plant in 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.



Scale 1:2500 @ A1

0 50 100 150 200 250m

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.

rev	date	description	drawn
---	12.08.22	First Issue	EC
A	20.04.23	Revision	EC

masterplanning
environmental assessment
landscape design
urban design
ecology
architecture
arboriculture

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client
Newlands Development

project
Dearne Valley Parkway
Goldthorpe

drawing title
TREE SURVEY PLAN

scale	drawn/checked	date
1:2500@ A1	EC	April 2023

drawing number
10744-T-01

rev
A

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N

KEY

- Tree Group to be Retained
- Tree/Group proposed to be removed subject to relevant permissions
- Hedgerow Proposed to be Retained
- 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 BS Category
- T1 (A) G1 (A) — Individual / Group Number to be Removed and BS 5837:2012 Category

Scale 1:2500 @ A1

0 50 100 150 200 250m

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.

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rev	date	description	drawn
---	24.10.22	First Issue	EC
A	13.01.23	Revision	EC
B	28.02.23	Final Issue	EC
C	20.04.23	Utilities Added	EC
D	06.11.23	Update	EC
E	06.11.23	Update	EC
F	25.03.24	Update	EC
G	31.07.24	Update	EC
H	02.08.24	Update	EC

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client
Newlands Development

project
Dearne Valley Parkway
Goldthorpe

drawing title
TREE RETENTION PLAN

scale	drawn/checked	date
1:2500@ A1	EC	August 2024

drawing number
10744-T-02

rev
H

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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

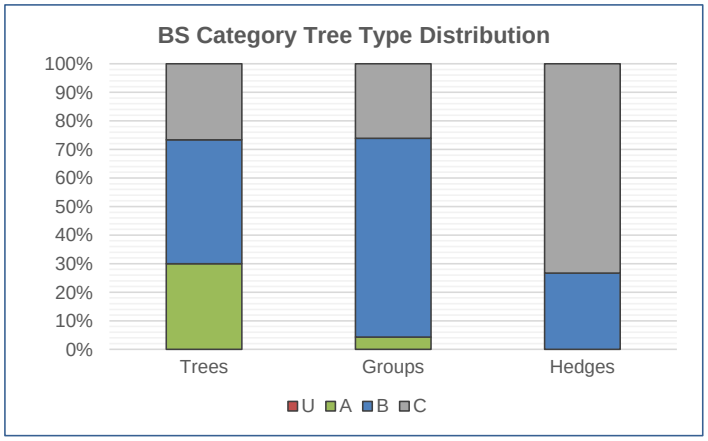
Root Protection Area (RPA)
• The RPA Radius column provides the extent of an equivalent circle from the centre of the stem (m). • The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the rooting area required for a tree to be successfully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

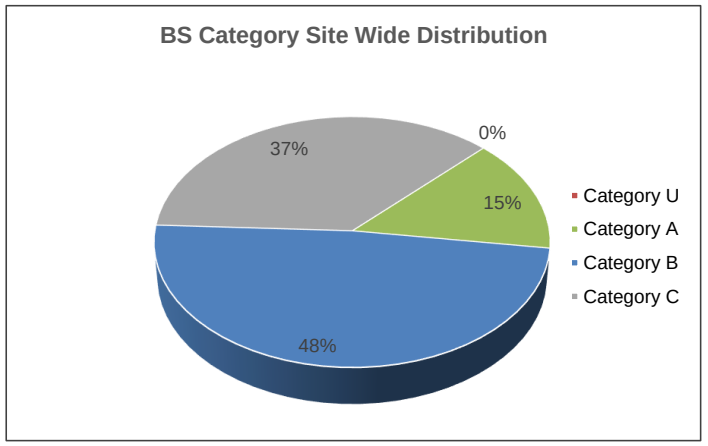
Appendix Summary

	Individual Trees	Totals	Tree Groups and Hedgerows	Totals
Category U		0		0
Category A	T10, T11, T12, T13, T17, T19, T20, T24, T27	9	G15	1
Category B	T3, T5, T6, T7, T8, T14, T15, T16, T18, T22, T23, T28, T30	13	G2, G3, G4, G5, G6, G9, G10, G11, G12, G13, G14, G16, G18, G19, G20, G23, H5, H6, H12, H15	20
Category C	T1, T2, T4, T9, T21, T25, T26, T29	8	G1, G7, G8, G17, G21, G22, H1, H2, H3, H4, H7, H8, H9, H10, H11, H13, H14	17
	Total	30	Total	38

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										
T1	Ash Fraxinus excelsior	10	9x 175	4	M	F	Lapsed coppice multi stemmed from base crossing and rubbing stems decay evident within bowl	125	6.3	C (i)
T2	Apple Malus domestica	5	100 100 100 100 100	2.5	M	F	Self seeded within roadside verge crown maintained along field edge	23	2.7	C (i)
T3	Field Maple Acer campestre	7	6x 280	5	M	F	Situated in corner of field parcel multi stemmed from base low crown to near ground level unable to fully access	213	8.2	B (i)
T4	White Willow Salix alba	10	est 800 500 300	7	OM	P	Situated on bank of dyke three stems from base largest stem has failed to west decay evident within stool low crown to near ground level unable to fully access	443	11.9	C (i)
T5	Ash Fraxinus excelsior	8	avg 8x 150	3	M	F	Situated on edge of drainage channel multi stemmed from base crown maintained along field edge broken branches noted	81	5.1	B (ii)
T6	Sycamore Acer pseudoplatanus	8	150 130 240 220 130	5	M	F	Situated within verge adjacent to carriageway low crown to near ground level multi stemmed from base	73	4.8	B (i)
T7	Sycamore Acer pseudoplatanus	8	340 330 270	5	M	F	Situated within verge adjacent to carriageway low crown to near ground level multi stemmed from base	135	6.5	B (i)
T8	Ash Fraxinus excelsior	8	420	5	M	F	Situated within verge adjacent to carriageway low crown to near ground level ivy cover obscures main stem	80	5.0	B (i)
T9	White Willow Salix alba	8	est 600 400 300	6	M	P	Situated on edge of dyke unable to access base multi stemmed from base northernmost stem appears to have partially failed low crown to near ground level	276	9.4	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T10	English Oak Quercus robur	12	670	N - 7 S - 2 E - 5 W - 5	M	G	Situated within tree group uneven crown due to close spacing to adjacent tree past pruning to raise crown above field ivy cover obscures main stem	203	8.0	A (i)
T11	English Oak Quercus robur	16	660	7	M	G	Situated within tree group past pruning to raise crown above field ivy cover obscures main stem	197	7.9	A (i)
T12	Beech Fagus sylvatica	12	590	6	M	G	Situated within tree group alongside dyke crossing and rubbing branches vandalism noted on main stem unable to fully access die back of crown evident possible draught	157	7.1	A (i)
T13	English Oak Quercus robur	13	600 420	6	M	G	Situated within field boundary hedgerow twin stemmed from 1m broken branches noted in lower crown small diameter dead branches	243	8.8	A (i)
T14	English Oak Quercus robur	10	450	4	M	F	Situated within field boundary hedgerow bark wound on main stem with exposed heartwood	92	5.4	B (i)
T15	English Oak Quercus robur	8	250	3	EM	G	Situated within field boundary hedgerow broken branches noted in lower crown	28	3.0	B (i)
T16	English Oak Quercus robur	9	300 300 300	5	M	G	Situated within field boundary hedgerow broken branches noted in lower crown multi stemmed from base unable to fully access base	122	6.2	B (i)
T17	English Oak Quercus robur	9	560	6	M	G	Situated within field boundary hedgerow broken branches noted in lower crown lower crown maintained along field edge	142	6.7	A (i)
T18	English Oak Quercus robur	8	350	3	EM	G	Situated within field boundary hedgerow broken branches noted in lower crown	55	4.2	B (i)
T19	English Oak Quercus robur	9	590	6	M	G	Situated within field boundary hedgerow broken branches noted in lower crown lower crown maintained along field edge	157	7.1	A (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T20	English Oak Quercus robur	9	720	6	M	G	Situated within field boundary hedgerow broken branches noted in lower crown lower crown maintained along field edge	235	8.6	A (i)
T21	Crack Willow Salix fragilis	6	260	3	EM	P	Situated within field boundary die back of crown evident past pruning to remove stem from above field	31	3.1	C (i)
T22	English Oak Quercus robur	9	650	6	M	F	Situated within field boundary hedgerow previous failure of main stem at 6m with cavity and exposed heartwood lower crown maintained along field edge	191	7.8	B (i)
T23	Sycamore Acer pseudoplatanus	12	6x 200	4	M	F	Situated on edge of dyke multi stemmed from base crossing and rubbing stems unable to fully access base	109	5.9	B (i)
T24	English Oak Quercus robur	9	730	6	M	G	Situated within field boundary hedgerow lower crown maintained along field edge small diameter dead branches noted in crown	241	8.8	A (i)
T25	Ash Fraxinus excelsior	10	400	5	M	F	Situated on edge of drainage channel previously failed at 7m with tearout wound on main stem with exposed heartwood	72	4.8	C (i)
T26	Ash Fraxinus excelsior	7	est 200	4	SM	F	Situated within field boundary hedgerow likely self seeded unable to access base	18	2.4	C (i)
T27	English Oak Quercus robur	13	680	6	M	G	Situated within boundary hedgerow ivy cover obscures main stem fence occluded within main stem small diameter dead branches	209	8.2	A (i)
T28	Sycamore Acer pseudoplatanus	12	est 500	6	EM	G	Situated beyond site boundary within adjoining garden unable to access	113	6.0	B (i)
T29	Sycamore Acer pseudoplatanus	6	est 200 210	4	SM	F	Situated within boundary hedgerow likely self seeded twim stemmed from base with included bark union noted between stems	38	3.5	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T30	Ash Fraxinus excelsior	17	est 400 370	6	M	F	Situated within boundary hedgerow unable to access base ivy cover obscures main stem	134	6.5	B (i)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
GROUPS OF TREES										
G1	Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna	5	avg 120	1.5	EM	F	Outgrown section of hedgerow flailed along field edge	7	1.4	C (ii)
G2	Goat Willow Salix caprea Hawthorn Crataegus monogyna Alder Alnus glutinosa Hazel Corylus avellana Hornbeam Carpinus betulus	7	avg 120	1	SM	G	Recently planted group along site boundary good establishment with close spacing between trees moderate screening value	7	1.4	B (ii)
G3	Beech Fagus sylvatica Goat Willow Salix caprea Hawthorn Crataegus monogyna Alder Alnus glutinosa Hazel Corylus avellana Hornbeam Carpinus betulus	6	avg 120	1	SM	G	Recently planted group along site boundary good establishment with close spacing between trees moderate screening value	7	1.4	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G4	Ash Fraxinus excelsior English Oak Quercus robur Field Maple Acer campestre Goat Willow Salix caprea Hawthorn Crataegus monogyna Horse Chestnut Aesculus hippocastanum Silver Birch Betula pendula Wild Cherry Prunus avium Hazel Corylus avellana Rowan Sorbus aucuparia	8	upto 250	3	EM	G	Buffer planting along boundary with adjacent school unable to access stems moderate screening value lower crowns maintained along field edge	28	3.0	B (ii)
G5	Sycamore Acer pseudoplatanus	12	avg 250 250 250 250	4	EM	F	Linear grouo along boundary with adjacent track multi stemmed forms irregular spacing between trees crowns maintained along field edge	113	6.0	B (ii)
G6	Blackthorn Prunus spinosa English Oak Quercus robur Field Maple Acer campestre Hawthorn Crataegus monogyna Hazel Corylus avellana	5	avg 150 150	2	EM	F	Unmaintained boundary group along edge of track several gaps moderate landscape value	20	2.5	B (ii)
G7	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna	3	100 100 100 100	2	EM	F	Self seeded trees within field boundary margin limited arboricultural value	18	2.4	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G8	Elder Sambucus nigra Hawthorn Crataegus monogyna	4	avg 50 50 50 50	2	EM	F	Self seeded trees along field edge and along dyke limited arboricultural or landscape value	5	1.2	C (ii)
G9	Sycamore Acer pseudoplatanus	8	avg 200	3	EM	F	Situated within field boundary hedgerow along dyke irregular spacing between trees unable to access stems moderate landscape value die back evident in easternmost trees possible spraying damage	18	2.4	B (ii)
G10	Ash Fraxinus excelsior Field Maple Acer campestre Hawthorn Crataegus monogyna Silver Birch Betula pendula Sycamore Acer pseudoplatanus Alder Alnus glutinosa Hazel Corylus avellana	10	avg 200	2	SM	G	Area of tree planting between two drainage channels ash die back evident no obvious management moderate arboricultural and landscape value	18	2.4	B (ii)
G11	Blackthorn Prunus spinosa English Oak Quercus robur Field Maple Acer campestre Goat Willow Salix caprea Hawthorn Crataegus monogyna Silver Birch Betula pendula Hazel Corylus avellana	6	avg 150	2	SM	G	Planted group on edge of drainage channel no obvious management moderate landscape value	10	1.8	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G12	Ash Fraxinus excelsior English Oak Quercus robur Field Maple Acer campestre Hawthorn Crataegus monogyna Silver Birch Betula pendula Sycamore Acer pseudoplatanus Rowan Sorbus aucuparia	9	avg 150	2	SM	G	Planted group along edge of carriageway moderate screening value no obvious management ash die back evident	10	1.8	B (ii)
G13	Ash Fraxinus excelsior English Oak Quercus robur Field Maple Acer campestre Hawthorn Crataegus monogyna Alder Alnus glutinosa Hazel Corylus avellana	9	avg 150	2	SM	G	Planted group along edge of carriageway moderate screening value recent removal of northern edge of group from alongside carriageway	10	1.8	B (ii)
G14	Field Maple Acer campestre Goat Willow Salix caprea Sycamore Acer pseudoplatanus	8	avg 200 200	3	EM	F	Tree group situated along dyke irregular spacing between trees likely self seeded crowns maintained along field edge moderate landscape value ash die back evident	36	3.4	B (ii)
G15	Sycamore Acer pseudoplatanus	16	upto 600	6	M	G	Linear group along dyke basal growth obscures main stem dense ivy cover small diameter dead branches noted no obvious defects	163	7.2	A (ii)

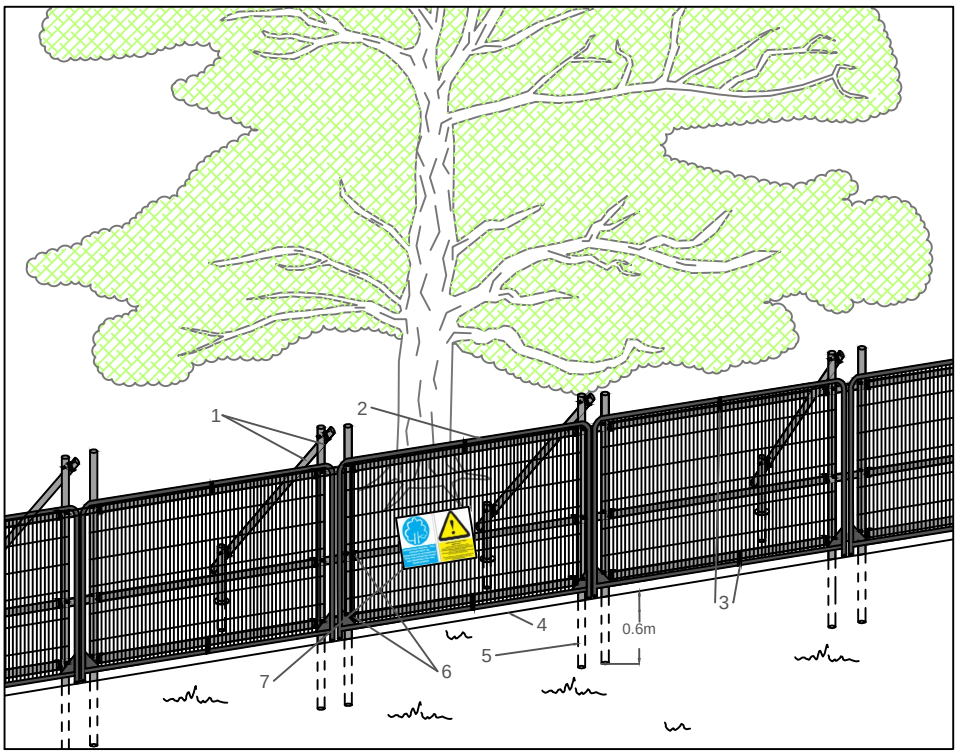
Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G16	Ash Fraxinus excelsior Elder Sambucus nigra Field Maple Acer campestre Hawthorn Crataegus monogyna Silver Birch Betula pendula Sycamore Acer pseudoplatanus Alder Alnus glutinosa	7	avg 150	2	SM	G	Planted group on edge of drainage channel no obvious management moderate landscape value	10	1.8	B (ii)
G17	Ash Fraxinus excelsior Blackthorn Prunus spinosa Crack Willow Salix fragilis Elder Sambucus nigra English Oak Quercus robur Field Maple Acer campestre Hawthorn Crataegus monogyna	6	avg 160	2	EM	F	Outgrown hedgerow group along field boundary crowns maintained along field edge	12	1.9	C (ii)
G18	English Oak Quercus robur Field Maple Acer campestre Hawthorn Crataegus monogyna Silver Birch Betula pendula Sycamore Acer pseudoplatanus Alder Alnus glutinosa Hazel Corylus avellana	7	avg 150	2	SM	G	Planted group alongside dyke good establishment no obvious management moderate landscape value	10	1.8	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G19	Ash Fraxinus excelsior Blackthorn Prunus spinosa Hawthorn Crataegus monogyna Norway Maple Acer platanoides Silver Birch Betula pendula Sycamore Acer pseudoplatanus	9	avg 180	2	SM	G	Buffer planting along edge of carriageway ash die back evident moderate landscape and screening value maintained along field edge	15	2.2	B (ii)
G20	Ash Fraxinus excelsior Hawthorn Crataegus monogyna Crab Apple Malus sylvestris Weeping Willow Salix x sepulcralis 'Chrycosoma'	6	est 150	2	SM	F	Situated beyond site boundary within adjoining garden unable to access moderate screening value	10	1.8	B (ii)
G21	Ash Fraxinus excelsior Elder Sambucus nigra Field Maple Acer campestre Hawthorn Crataegus monogyna	6	est 120	1.5	EM	F	Outgrown hedgerow along site boundary with adjoining property occasional gaps	7	1.4	C (ii)
G22	Norway Spruce Picea abies	2	avg 50	0.5	SM	G	Christmas tree plantation	1	0.6	C (ii)
G23	Ash Fraxinus excelsior Aspen Populus tremula	13	avg 250	4	EM	F	Situated within boundary hedgerow linear tree group along edge of carriageway moderate screening value unable to access stems	28	3.0	B (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 Hawthorn Crataegus monogyna	2	avg 100	1	EM	F	Maintained hedgerow along field boundary occasional gaps	5	1.2	C (ii)
H2	Beech Fagus sylvatica Blackthorn Prunus spinosa English Oak Quercus robur Field Maple Acer campestre Hawthorn Crataegus monogyna Hazel Corylus avellana	2	avg 50	0.5	SM	G	Recently planted hedgerow along site boundary	1	0.6	C (ii)
H3	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna Sycamore Acer pseudoplatanus Hazel Corylus avellana	2	avg 120	1	EM	F	Maintained hedgerow along edge of dyke occasional outgrown trees occasional gaps	7	1.4	C (ii)
H4	Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna	2.5	avg 120	1	EM	P	Hedgerow along boundary with adjacent track sporadic with large gaps dead elder noted limited screening value	7	1.4	C (ii)

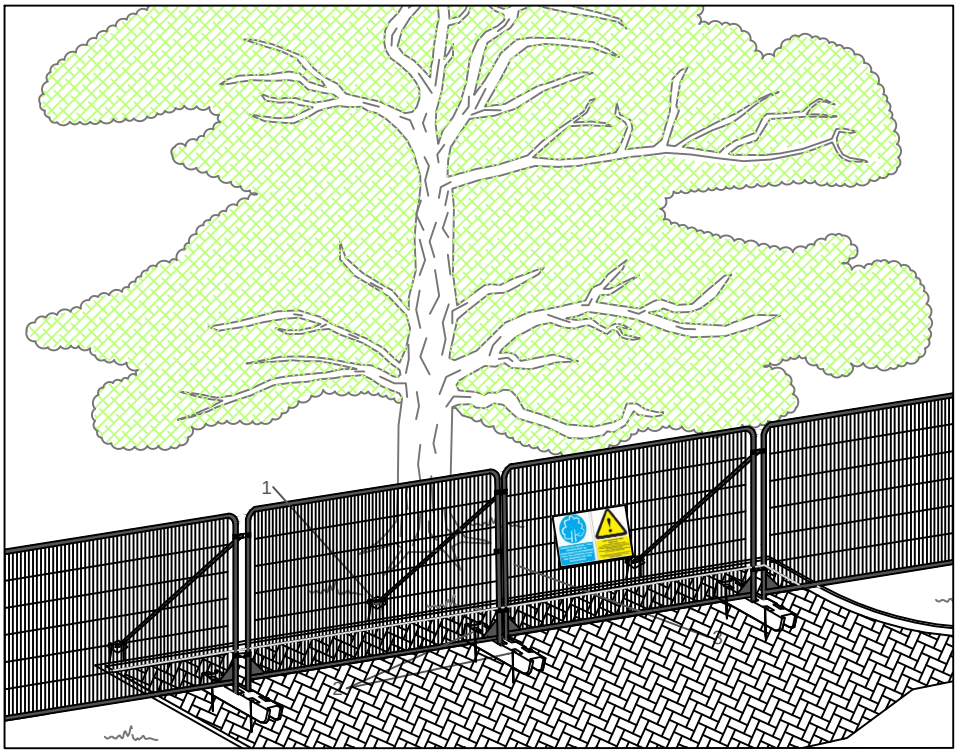
Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H5	Blackthorn Prunus spinosa Elder Sambucus nigra Field Maple Acer campestre Wych Elm Ulmus glabra English Elm Ulmus procera Buckthorn Rhamnus cathartica	3	avg 50 50 50 50	1	EM	F	Maintained hedgerow along boundary with adjacent track occasional gaps moderate screening value	5	1.2	B (ii)
H6	Ash Fraxinus excelsior English Oak Quercus robur Field Maple Acer campestre Hawthorn Crataegus monogyna	2.5	avg 80	1	EM	G	Maintained hedgerow along field boundary	3	1.0	B (ii)
H7	Elder Sambucus nigra English Oak Quercus robur Hawthorn Crataegus monogyna	2	80	1	EM	P	Maintained hedgerow separating field parcels several large gaps limited screening value	3	1.0	C (ii)
H8	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna	1.5	80	1	EM	P	Maintained hedgerow separating field parcels sporadic with several large gaps limited screening value	3	1.0	C (ii)
H9	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna	2	80	1	EM	P	Maintained hedgerow separating field parcels sporadic with several large gaps limited screening value	3	1.0	C (ii)
H10	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna	1.5	80	1	EM	P	Maintained hedgerow separating field parcels sporadic with several large gaps limited screening value	3	1.0	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H11	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna	1.5	80	1	EM	P	Maintained hedgerow separating field parcels sporadic with several large gaps limited screening value	3	1.0	C (ii)
H12	Hawthorn Crataegus monogyna	3	avg 80	1	EM	G	Maintained hedgerow along access track	3	1.0	B (ii)
H13	Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna Wych Elm Ulmus glabra	2	avg 80	1	EM	G	Maintained hedgerow along field boundary limited screening value	3	1.0	C (ii)
H14	Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna	2	avg 80	1	EM	G	Maintained hedgerow along field boundary limited screening value	3	1.0	C (ii)
H15	Ash Fraxinus excelsior Field Maple Acer campestre Goat Willow Salix caprea Hawthorn Crataegus monogyna Hazel Corylus avellana	5	avg 120	2	EM	F	Outgrown hedgerow along site boundary moderate screening value	7	1.4	B (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
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ecology
architecture
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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