



Redrow Homes Limited

Land to the South West of Lutterworth Road, Burbage

Arboricultural Assessment

July 2024

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1.0 INTRODUCTION

- 1.1 This report has been prepared by FPCR Environment and Design Limited on behalf of Redrow Homes Limited to present the findings of an Arboricultural Assessment and survey of trees located at Land to the South West of Lutterworth Road, Burbage (hereafter referred to as the site), OS Grid Ref SP 439 913
- 1.2 The survey was carried out on 2nd December 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 planning application and has included an assessment of any impact to the tree cover. 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

- 1.7 The site is located to the south of the Leicestershire town of Burbage and is comprised of Burbage Fields Farm and its surrounding arable and pastoral fields. To the south of the site runs the M69 motorway which links Leicester and Coventry. The north and east of the assessment area are abutted by existing residential developments and to the west of the site is further farmland.
- 1.8 Tree cover was primarily comprised of native specimens such as common ash *Fraxinus excelsior*, hawthorn *Crataegus monogyna* and English oak *Quercus robur*. Due to the historic use of the land, tree cover was mostly confined to the existing field boundaries and in offsite private gardens.

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*'.

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'.
- 2.3 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*'.

Statutory Considerations

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

- 2.5 It is understood having used the online search facility on the website for the Local Planning Authority, Hinckley & Bosworth 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.
- 2.6 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 1st February 2023.

Non-Statutory Considerations

- 2.7 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
- 2.8 The MAGIC search returned no non-statutory arboricultural constraints.

3.0 SURVEY METHODOLOGY

BS5837 Categories

- 3.1 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).
- 3.2 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.
- 3.3 **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.

¹ <http://magic.defra.gov.uk/>

- 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.

3.4 **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.

3.5 **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.

3.6 **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

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

- 3.8 As part of this assessment, a Tree Retention Plan has been prepared to show the proposed layout in relation to the existing tree cover allowing an assessment of any potential conflicts. The plan also identifies which trees would be required to be removed or retained as part of the proposed development.

Tree Constraints and Root Protection Areas

- 3.9 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.
- 3.10 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.
- 3.11 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.
- 3.12 Whilst it is generally accepted that a tree's 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.
- 3.13 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

- 3.14 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.

- 3.15 The statements made in this report regarding the 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 behaviours, such as vandalism, which occur since the date of the survey. As such, the assessment of tree condition given within applies to the date of survey and cannot be assumed to remain unchanged.
- 3.16 It will be necessary to review all comments and observations made within this report, in accordance with sound arboricultural practice, within two years of the date of survey (unless explicitly stated elsewhere within this report). Further review may also be necessary where site conditions change or works to trees are carried out which have not been specified in detail within this report.
- 3.17 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.
- 3.18 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.
- 3.19 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.
- 3.20 Trees have been assessed as groups, hedgerows, or woodland 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.
 - 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'². 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'³.

² http://www.countrysideinfo.co.uk/woodland_manage/whatis.htm

³ http://www.countrysideinfo.co.uk/woodland_manage/whatis.htm

- 3.21 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

- 3.22 Veteran trees and Ancient Woodland are important components of the landscape, their importance can be for a number of reasons including that of their ecological, social, cultural, and historic value.
- 3.23 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.’⁴*
- 3.24 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.

4.0 RESULTS

- 4.1 A total of 38 individual trees, 26 groups of trees and 20 hedgerows were surveyed as part of the Arboricultural Assessment. Trees were surveyed as individual trees and groups of trees where examples are clearly present as per the description. Refer to the Tree Survey Plan and Appendix A – Tree Schedule for full details of the trees included in this assessment. The table below summarises the trees assessed.

Tree Schedule

- 4.2 Appendix A presents details of any individual trees, groups and hedgerows found 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.

⁴ Ministry of Housing, Communities and Local Government. (2019). *National Planning Policy Framework*. London: Ministry of Housing, Communities and Local Government.

Results Summary

- 4.4 Tree stock on site was varied and ranged in quality from unsuitable (category) to high (category A). As briefly discussed earlier the majority of individual species were recorded as English oak and ash. The table below summarises the trees assessed, a number 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	T7, T38	2		0
Category A (High Quality / Value)	T9, T13, T24, T37	4		0
Category B (Moderate Quality / Value)	T1, T2, T3, T10, T21, T23, T25, T33, T34	9	G1, G5, G7, G9, G12, G13, H10, H15, H16	9
Category C (Low Quality / Value)	T4, T5, T6, T8, T11, T12, T14, T15, T16, T17, T18, T19, T20, T22, T26, T27, T28, T29, T30, T31, T32, T35, T36	23	G2, G3, G4, G6, G8, G10, G11, G14, G15, G16, G17, G18, G19, G20, G21, G22, G23, G24, G25, G26, H1, H2, H3, H4, H5, H6, H7, H8, H9, H11, H12, H13, H14, H17, H18, H19, H20	37

- 4.5 During the assessment, four individual trees were recorded as category A specimens, of high arboricultural and landscape value. These were trees T9, T13, T24 and T37. These consisted of specimens of English oak *Quercus robur*. These trees were considered to offer a substantial amount of amenity and arboricultural value to the local environment, leading to the highest available grade under BS5837.
- 4.6 Nine individual trees, six groups of trees and three hedgerows were considered to be of moderate value and graded as category B accordingly. These were generally positioned and formed the field boundaries of the site with the exception of T10 which was offset to the south of a larger group of trees.
- 4.7 T7 and T38 were considered to be unsuitable for retention in their current condition and graded as category U accordingly. T38 was a mature specimen of apple *Malus domestica* in a visible state of decline. The crown had formed an asymmetrical form due to suppression from T37, a large specimen of oak directly to the west of this tree. It would be recommended that this tree is removed to prevent the risk of failure in the future. T7, a mature ash *Fraxinus excelsior* also graded as Category U due to its future potential, having recently had a major stem failure and the presence of *Inonotus hispidus* fungal fruiting bodies.
- 4.8 The remaining trees, groups and hedgerows were all graded as category C specimens due to their physical conditions, limited arboricultural appeal and impact on the wider landscape.

Ancient and Veteran Trees

- 4.9 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 Site Layout and seeks to outline the relationship between the proposals and the existing trees and hedgerows. The drawing shows the proposals for a Hybrid planning application for (a) a full planning application for 422 dwellings, public open space, and associated infrastructure and (b) an outline planning application for a residential care home and up to eleven self-build plots. An overlay of the layout has been incorporated in the Tree Retention Plans to assist in identifying the relationship and any potential conflicts between the proposals and the existing trees and hedgerows.
- 5.3 Having appraised the above plan for any arboricultural implications that may arise as a result of the layout it would appear that the layout is capable through its design to retain and incorporate a large proportion of the existing trees by virtue of their peripheral locations around the boundaries of the site.
- 5.4 The proposed access to the north would require the removal of T36, G23, G25, H15, H16, H17 and H18 from the existing residential dwellings in this area. G24 would require being partially removed to form a boundary between the access road and the recreation ground to the east. The majority of these groups are of low arboricultural quality and given Category C. T36 a red oak *Quercus robur*, G25 a group containing holly *Ilex aquifolium* and Lawsons cypress *Chamaecyparis lawsoniana*.
- 5.5 The main access road is shown to encroach on the root protection area of T37, an offsite category A oak tree. It would be necessary to ensure as little impact is carried out to this tree's root as possible in order for it to be retained. Therefore, it would be recommended that a site-specific Arboricultural Method Statement is produced to detail any specific working methods such as supervised excavation and root pruning to ensure as little impact is carried out to this tree as possible.
- 5.6 Throughout the centre of the site H1, H3, H4, H11, H13 have sections that are shown to be removed. H5 is also shown to be removed to facilitate the layout. The hedgerows predominately consisted of hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa* and elder *Sambucus nigra* and have been regularly flailed to maintain a height of between one and two metres. These were considered to be Category C for their low arboricultural quality and landscape value.
- 5.7 To the south of the site the existing farm buildings would be required to be demolished. T18, T20, H6, G14, G15, G16, G17 and G18 are all trees and groups within the existing farm site. They are shown to be removed to facilitate the proposed layout along with a small section of H7. All of the trees and groups within this area are of low quality and given Category C. The majority of trees

within the area were Leyland cypress *Chamaecyparis lawsoniana* to a height of 14 metres, these trees would have been planted to provide screening for the existing farm buildings.

- 5.8 To facilitate access into the site from the south east, small sections of G1 and G2 would require removal. These were dense outgrown boundary groups of mixed broadleaved species, and both were considered of low arboricultural value.
- 5.9 G6 was a dense group of blackthorn within the centre of the site that would require removal to facilitate the alignment of the internal access road. Again, this was a low value group of trees graded as category C.
- 5.10 G8 would require management in the form of pruning back for clearance and T7 would require removal due to its condition. G8 was a dense, outgrown boundary group consisting of category C trees. This could be pruned back to the sites boundary to create clearance for construction works.
- 5.11 T15, a low-quality Common ash is shown removed to facilitate development.
- 5.12 A small section of H14 is shown removed to facilitate development in the northern self-build area.
- 5.13 It would be necessary to remove T7 due to its structural condition and due to the position of a turning head with close proximity of its stem. The loss of this category U tree should not have a detriment impact on the landscape as green cover on the norther boundary provided by G8 will still be present.
- 5.14 In summary although there is some loss required for the proposed development, in terms of arboriculture, it is mainly of low Category C value. The proposals have worked to retain the majority of tree cover with limited impact on the site's boundary hedgerows and groups. Additional landscaping and new planting is shown within the development which will go towards the losses that are shown.

Tree Management

- 5.15 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.
- 5.16 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.
- 5.17 All vegetation and, particularly, woody vegetation proposed for clearance should be removed outside of the bird-breeding season (March - September inclusive) as all birds are protected under the Wildlife and Countryside Act, 1981 (as amended) whilst on the nest. Where this is not possible, vegetation should be checked for the presence of nesting birds prior to removal by an experienced ecologist.

General Design Principles in Relation to Retained Trees

- 5.18 In a subsequent Reserved Matters application following the final layout of the scheme, assessment of the distance of proposed development in relation to the calculated root protection area of retained trees should be made which will inform the final layout.
- 5.19 The use of “no-dig” construction methods should be considered prior to decisions being made as to the removal of each tree concerned, where conflicts between trees identified for retention and the layout arise. Such methods of construction and the use of industry led specialist engineering solutions i.e., three dimensional “load bearing” cellular confinement systems can be used particularly in the case of carriageways, footways, and driveways in order to avoid unnecessary losses of trees.
- 5.20 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.
- 5.21 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 NEW TREE AND HEDGEROW PLANTING

Trees

- 6.1 The landscaping scheme should consider the use of both native tree species (for their low maintenance requirements and nature conservation value) and ornamental species (for their contribution to urban design and amenity value). Species choices should be selected on the basis of their suitability for the final site use. Furthermore, during the design process consultation should be made with the Local Planning Authority to obtain information on their tree strategy and incorporate the planting proposals with any local policies and initiatives and/or Biodiversity Action Plans (BAP).
- 6.2 In line with the NPPF all schemes should aim to achieve a net gain in biodiversity value. Nationally recognised biodiversity metrics allow for the inclusion of, not limited to, newly planted scattered trees, woodlands, and hedgerows as a means of compensating for loss of habitat as part of the development. Tree and shrub planting can therefore be used to contribute to this biodiversity gain.
- 6.3 To maximise biodiversity value (and contribution to net gain) native species or varieties should be specified. Such provisions can be incorporated into both the hard and soft landscaping of the scheme. It is recommended that tree and hedgerow specifications are made following consultation with guidance published by the Local Planning Authority.

- 6.4 When deciding upon suitable tree species, careful consideration would need to be given to the following: ultimate height and canopy spread, form, habit, density of crown, potential shading effect, colour, water demand, soil type and maintenance requirements in relation to both the built form of the new development and existing properties.
- 6.5 Through careful species selection, the landscape scheme shall reduce the risk of trees being removed in the future on the grounds of nuisance. Nuisance can be perceived in a number of ways and vary from person to person however most commonly, within the context of trees, low overhanging branches, excessive shading, seasonal leaf fall and the misinformed perception that trees close to buildings cause damage.

Hedgerows

- 6.6 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. Consequently, it is important that the proposed scheme delivers a net gain in terms of linear hedgerows through new planting to compensate for any losses. Species should be native, and characteristic of the locality.
- 6.7 Recommended species for native hedgerow planting are as follows:
- *Crataegus monogyna*
 - *Prunus spinosa*
 - *Cornus sanguinea*
 - *Corylus avellana*
 - *Acer campestre*
 - *Euonymus europaeus*

Rooting Environment and Soil Volumes

- 6.8 The success of any landscaping scheme relies on an adequate provision of a high-quality rooting environment within which trees can thrive and reach their full potential. Planting trees with due care and consideration can, in the long term, provide a greater return on a schemes green investment and ensure trees remain healthy and grow to mature proportions. Healthy mature trees integrate well into the built environment; increase the maturity of the landscape; help provide a natural green and leafy urban environment in which people would want to reside whilst also benefiting local wildlife.
- 6.9 The planting of trees within confined urban environments should consider the use of appropriately designed planting pits specifically engineered to promote tree health and longevity. Crucially the aim will be to provide an adequate volume of quality soil for roots to suitably develop by calculating the amount of available soil volumes needed and selecting species whose mature size is compatible with the site. This is an integral component of the planning stage (Lindsey & Bassuk, 1991).
- 6.10 In a natural environment free from constraints to growth, it has been proven through research that root systems can extend up to three times the radius of the tree crown and although in an urban environment there is often insufficient space to accommodate the extent of the full potential

for root growth, all efforts should be made to at least provide as much soil volume as possible. One researched method of calculating the minimum required soil volume is as follows:

Table 2: Example of calculating Soil Volume for New Tree Planting (Source: CIRIA C712 and Calculating Target Soil Volumes – Green Blue Urban)

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

General Planting Recommendations

- 6.11 Wherever possible, following discussions with the developer and utility companies, common service trenches should be specified to minimise land take associated with underground service provision and facilitation access for future maintenance.
- 6.12 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 will be adequately protected during works ensuring that the calculated root protection area for all retained trees can be appropriately protected through the erection of the requisite tree protection barriers. Measures to protect trees should follow the guidance in BS5837 and will be applied where necessary for the purpose of protecting trees within the site whilst allowing sufficient access for the implementation of the proposed layout. These have been broadly summarised below.

General Information and Recommendations

- 7.2 All trees retained on site will be protected by suitable barriers or ground protection measures around the calculated RPA, crown spread of the tree or other defined constraints of this assessment as detailed by section 6 and 7 of BS5837.
- 7.3 Barriers will be erected prior to commencement of any construction work and before demolition including erection of any temporary structures. Once installed, the area protected by fencing or other barriers will be regarded as a construction exclusion zone. Fencing and barriers will not be removed or altered without prior consultation with the Project 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 for a Reserved Matters application and in accordance with the guidance contained within BS5837.

Protection outside the exclusion zone

- 7.11 Once the areas around trees have been protected by the barriers, any works on the remaining site area may be commenced providing activities do not impinge on protected areas.
- 7.12 All weather notices should be attached to the protective fencing to indicate that construction activities are not permitted within the fenced area. The area within the protective barriers will then remain a construction exclusion zone throughout the duration of the construction phase of the proposed development. Protection fencing signs can be provided upon request.
- 7.13 Wide or tall loads etc should not come into contact with retained trees. Banksman should supervise transit of vehicles where they are in close proximity to retained trees.
- 7.14 Oil, bitumen, cement, or other material that is potentially injurious to trees should not be stacked or discharged within 10m of a tree stem. No concrete should be mixed within 10m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree.
- 7.15 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.

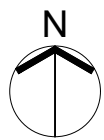
- 7.16 Notice boards, telephone cables or other services should not be attached to any part of a retained tree.
- 7.17 Any trees which need to be felled adjacent to or are present within a continuous canopy of retained trees, must be removed with due care (it may be necessary to remove such trees in sections).

Protection of Trees Close to the Site

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

Protection for Aerial Parts of Retained Trees

- 7.20 Where it is deemed necessary to operate wide or tall plant within close proximity to trees it is best advised that appropriate, but limited tree surgery, be carried out beforehand to remove any obstructive branches as any such equipment would have potential to cause damage to parts of the crown material, i.e., low branches and limbs, of retained trees within the protective barriers. This is termed as 'access facilitation pruning' within BS5837. Any such pruning should be undertaken in accordance with a specification prepared by an arboriculturist.
- 7.21 A pre-commencement site meeting with contractors who are responsible for operating machinery is advised to firstly highlight the potential for damage occurring to tree crowns and to ensure that extra care is applied when manoeuvring machinery during such operations within close proximity to retained trees to avoid any contact.
- 7.22 In the event of having caused any branch or limb damage to retained trees it is strongly recommended that suitable tree surgery be carried out, in accordance with British Standard 3998:2010 and in agreement with the Local Planning Authority prior to correcting the damage, upon completion of development.



KEY

- Category U - 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 Hatching (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
- Indicative Shade Pattern (in accordance with BS5837:2012 where appropriate)

Scale 1:1250 @ A1

0 25 50 75 100 125m

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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14.12.22	First Issue	HR
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client
Redrow Homes Limited

project
**Land to the South West of Lutterworth Road
Burbage**

drawing title
TREE SURVEY PLAN

scale
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drawn/checked
HR / TCB

date
December 2022

drawing number
9685-T-11

rev
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- KEY
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 - Category A - Trees / Groups of High Quality (BS 5837:2012)
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0 25 50 75 100 125m

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project
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drawing title
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scale
1:1250 @ A1

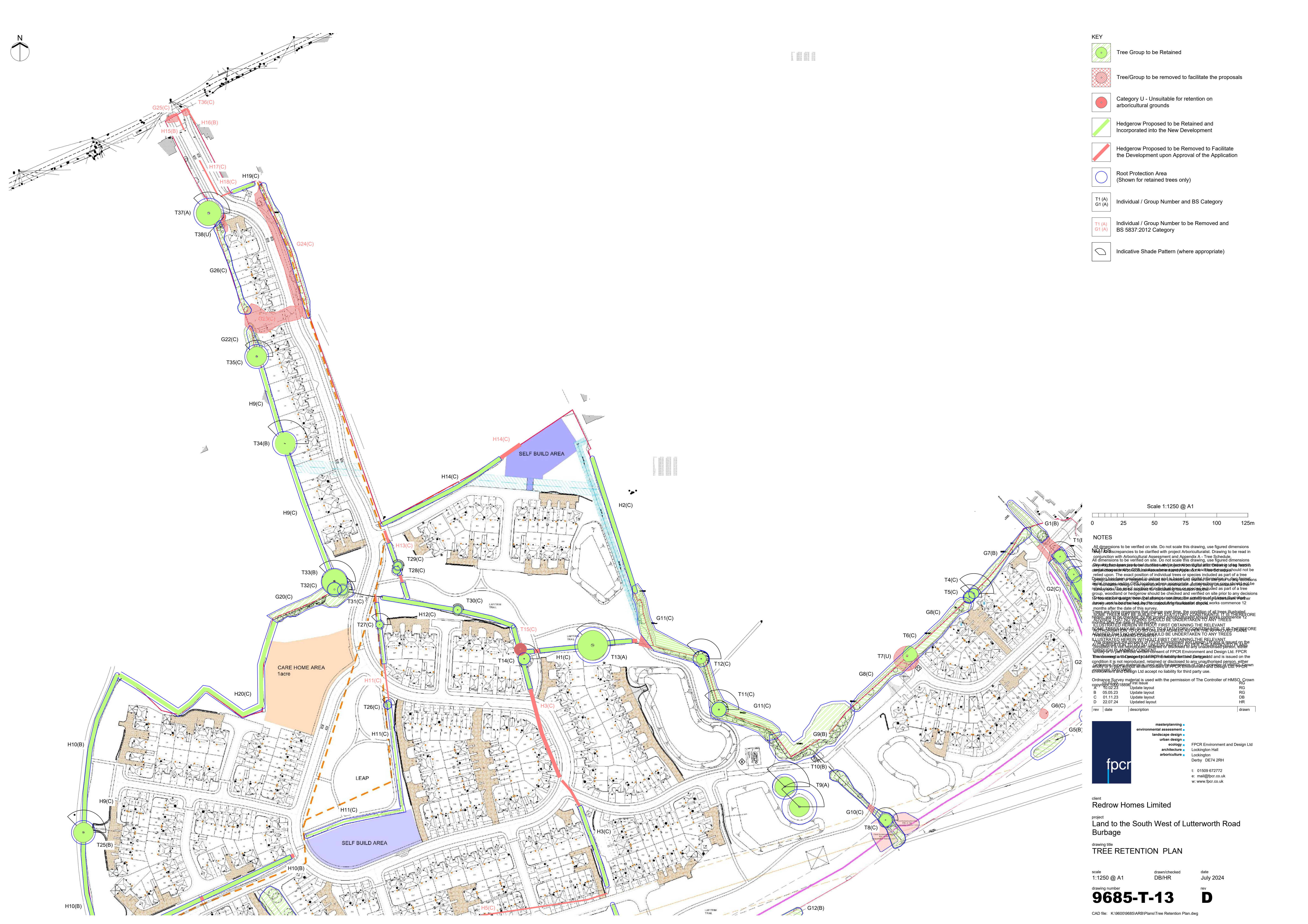
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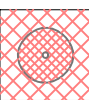
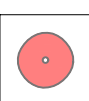
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drawing number
9685-T-12

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

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A	10.02.23	Update layout	RG
B	05.05.23	Update layout	RG
C	01.11.23	Update layout	DB
D	22.07.24	Updated layout	HR

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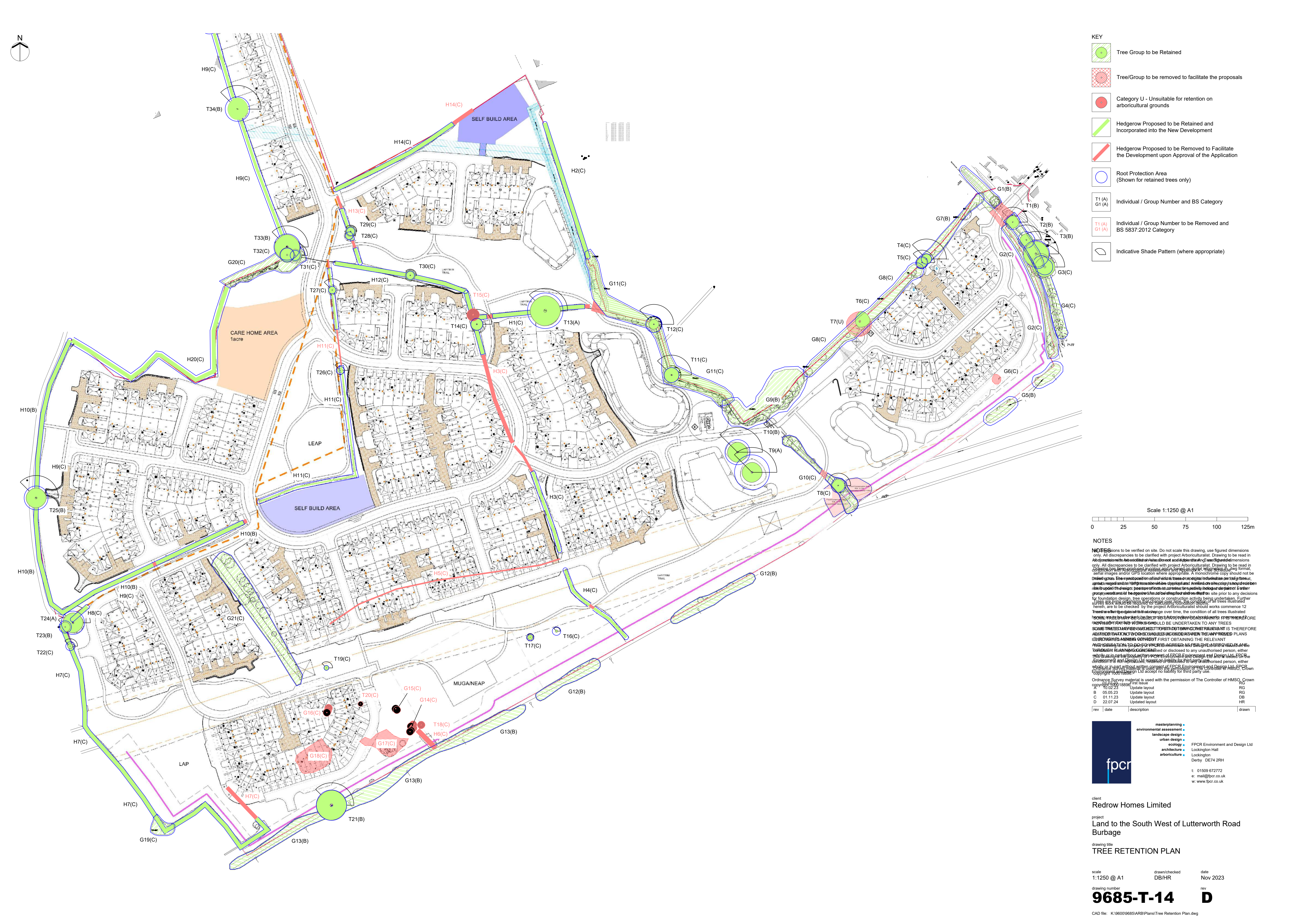
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Burbage**

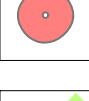
drawing title
TREE RETENTION PLAN

scale	drawn/checked	date
1:1250 @ A1	DB/HR	July 2024
drawing number	rev	
9685-T-13	D	

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	Tree Group to be Retained
	Tree/Group to be removed to facilitate the proposals
	Category U - Unsuitable for retention on arboricultural grounds
	Hedgerow Proposed to be Retained and Incorporated into the New Development
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	Indicative Shade Pattern (where appropriate)

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A	10.02.23	Update layout	RG
B	05.05.23	Update layout	RG
C	01.11.23	Update layout	DB
D	22.07.24	Updated layout	HR

rev	date	description	drawn
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Redrow Homes Limited

project
Land to the South West of Lutterworth Road
Burbage

drawing title
TREE RETENTION PLAN

scale drawn/checked date
1:1250 @ A1 DB/HR Nov 2023

drawing number **9685-T-14** rev **D**

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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

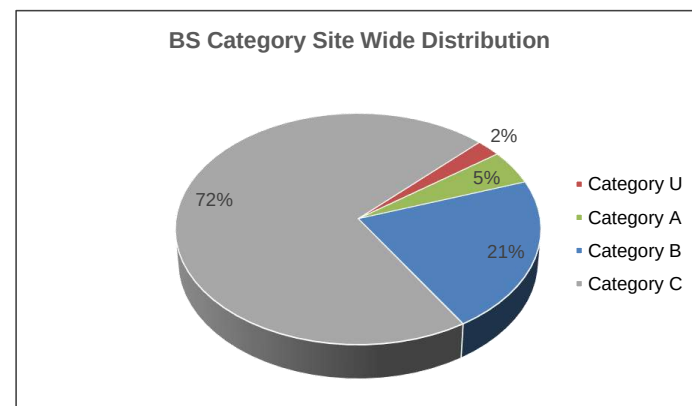
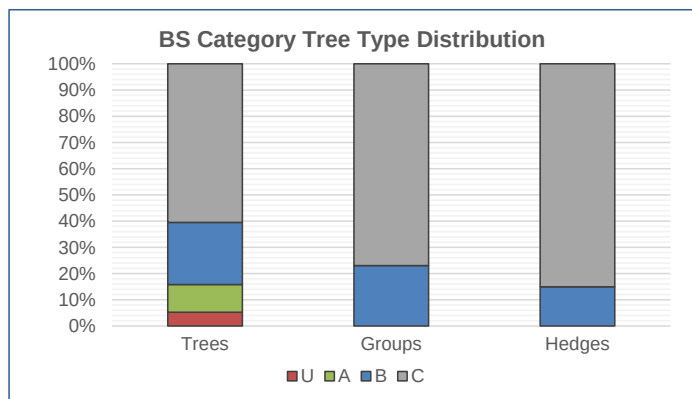
Root Protection Area (RPA)
• The RPA Radius column provides the extent of an equivalent circle from the centre of the stem (m). • The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the rooting area required for a tree to be successfully 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	T7, T38	2		0
Category A	T9, T13, T24, T37	4		0
Category B	T1, T2, T3, T10, T21, T23, T25, T33, T34	9	G1, G5, G7, G9, G12, G13, H10, H15, H16	9
Category C	T4, T5, T6, T8, T11, T12, T14, T15, T16, T17, T18, T19, T20, T22, T26, T27, T28, T29, T30, T31, T32, T35, T36	23	G2, G3, G4, G6, G8, G10, G11, G14, G15, G16, G17, G18, G19, G20, G21, G22, G23, G24, G25, G26, H1, H2, H3, H4, H5, H6, H7, H8, H9, H11, H12, H13, H14, H17, H18, H19, H20	37
	Total	38	Total	46

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	12	est 500	5	M	F	Base obscured Dense undergrowth at the base Established ivy cover Minor dead wood evident in the crown (<75mm)	113	6.0	B (i)
T2	Ash Fraxinus excelsior	12	est 550	5	M	F	Base obscured Dense undergrowth at the base Established ivy cover Minor dead wood evident in the crown (<75mm)	137	6.6	B (i)
T3	English Oak Quercus robur	18	Over ivy 890	10	M	F	Branch stubs evident Broken branches evident Dieback of the crown observed Epicormic growth evident within the crown Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Evidence of ground disturbance due to adjacent development	358	10.7	B (i)
T4	Hybrid Black Poplar Populus x canadensis	16	est 350	4	EM	F	Crossing and rubbing branches Lapsed Pollard Multi leadered form Situated offsite Delamintaing bark at base	55	4.2	C (i)
T5	Crack Willow Salix fragilis	10	est 300 250	4	EM	F	Crossing and rubbing branches Situated offsite Twin stemmed from base	69	4.7	C (i)
T6	Crack Willow Salix fragilis	8	470	N - 8 S - 5 E - 8 W - 1	EM	F	Crossing and rubbing branches Minor dead wood evident in the crown (<75mm) Situated offsite Suppressed crown form	100	5.6	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T7	Ash Fraxinus excelsior	14	810	10	M	P	Bark wounds noted Basal cavity observed Branch stubs evident Broken branches evident Dieback of the crown observed Epicormic growth evident within the crown Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Sparse / thinning crown Hollowing stem Large failed stem on ground Innonotus Hispidus present	N/A	N/A	U
T8	Ash Fraxinus excelsior	10	350 300 100	5	M	F	Base obscured Dense undergrowth at the base Multi stemmed from base Sparse / thinning crown	101	5.7	C (i)
T9	English Oak Quercus robur	20	1170	8	M	F	Branch stubs evident Broken branches evident Dieback of the crown observed Epicormic growth evident within the crown Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm)	619	14.0	A (i)
T10	Ash Fraxinus excelsior	20	840	8	M	F	Basal suckers present Branch stubs evident Broken branches evident Dieback of the crown observed Epicormic growth evident within the crown Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm)	319	10.1	B (i)
T11	Ash Fraxinus excelsior	16	500	6	M	F	Basal suckers present Branch stubs evident Broken branches evident Dense ivy in crown Epicormic growth evident within the crown Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Inonotus hispidus Shaggy bracket present	113	6.0	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T12	Ash Fraxinus excelsior	16	est 550	4	M	F	Basal suckers present Branch stubs evident Broken branches evident Dieback of the crown observed Epicormic growth evident within the crown Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Recent primary limb failure Dense ivy cover	137	6.6	C (i)
T13	English Oak Quercus robur	18	1190	12	M	F	Branch stubs evident Broken branches evident Compacted ground at the base Stah headed form Epicormic growth evident within the crown Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm)	641	14.3	A (i)
T14	Ash Fraxinus excelsior	12	400	5	M	F	Crossing and rubbing branches Dense ivy cover on main stem Low crown form Minor dead wood evident in the crown (<75mm)	72	4.8	C (i)
T15	Ash Fraxinus excelsior	12	600	5	M	F	Crossing and rubbing branches Dense ivy cover on main stem Low crown form Minor dead wood evident in the crown (<75mm)	163	7.2	C (i)
T16	Elder Sambucus nigra	3	est 8x 100	1	M	P	Crossing and rubbing branches Multi leadered form Sparse / thinning crown	36	3.4	C (i)
T17	Ash Fraxinus excelsior	3	230	2	SM	P	Bark wounds noted Crossing and rubbing branches Sparse / thinning crown	24	2.8	C (i)
T18	Prunus sp.	5	340 160 170 120 150	3	M	P	Bark wounds noted Browsing damage noted on main stem Crossing and rubbing branches Epicormic growth evident within the crown Heartwood exposed Minor dead wood evident in the crown (<75mm) Multi stemmed from base Sparse / thinning crown	94	5.5	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T19	Whitebeam <i>Sorbus aria</i>	5	160	2	SM	P	Branch stubs evident Crossing and rubbing branches Overhead cables	12	1.9	C (i)
T20	Sycamore <i>Acer pseudoplatanus</i>	6	120	2	SM	P	Branch stubs evident Crossing and rubbing branches	7	1.4	C (i)
T21	Hybrid Black Poplar <i>Populus x canadensis</i>	18	900 470	12	M	F	Branch stubs evident Crossing and rubbing branches Epicormic growth evident within the crown Minor dead wood evident in the crown (<75mm) Pruning wounds noted	466	12.2	B (i)
T22	Field Maple <i>Acer campestre</i>	6	est 6x 120	2	M	F	Base obscured Crossing and rubbing branches Flail damage evident	39	3.5	C (i)
T23	Field Maple <i>Acer campestre</i>	8	420	4	M	F	Barbed Wire attached to stem/s Bark wounds noted Branch stubs evident Crossing and rubbing branches Epicormic growth evident within the crown Minor dead wood evident in the crown (<75mm) Extensive burring Basal cavity to south	80	5.0	B (i)
T24	English Oak <i>Quercus robur</i>	14	780	8	M	F	Epicormic growth evident within the crown Minor dead wood evident in the crown (<75mm) No major defects were noted Poached ground at the base	275	9.4	A (i)
T25	Ash <i>Fraxinus excelsior</i>	18	Over ivy 800	8	M	F	Base obscured Branch stubs evident Epicormic growth evident within the crown Established ivy cover Minor dead wood evident in the crown (<75mm) Poached ground at base	290	9.6	B (i)
T26	Ash <i>Fraxinus excelsior</i>	6	190 180	2	EM	P	Bark wounds noted Browsing damage noted on main stem Sparse / thinning crown	31	3.1	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T27	Ash Fraxinus excelsior	9	250	3	EM	P	Bark wounds noted Browsing damage noted on main stem Flail damage evident Sparse / thinning crown	28	3.0	C (i)
T28	Apple Malus domestica	5	260	3	M	P	Crossing and rubbing branches Epicormic growth evident within the crown Flail damage evident	31	3.1	C (i)
T29	Ash Fraxinus excelsior	5	est 280	4	EM	F	Crossing and rubbing branches Epicormic growth evident within the crown Flail damage evident	35	3.4	C (i)
T30	Ash Fraxinus excelsior	5	est 280	4	EM	F	Crossing and rubbing branches Epicormic growth evident within the crown Flail damage evident	35	3.4	C (i)
T31	Ash Fraxinus excelsior	10	340	5	EM	F	Barbed Wire attached to stem/s Minor dead wood evident in the crown (<75mm)	52	4.1	C (i)
T32	Ash Fraxinus excelsior	14	460	6	EM	F	Barbed Wire attached to stem/s Branch stubs evident Low crown form Minor dead wood evident in the crown (<75mm)	96	5.5	C (i)
T33	Ash Fraxinus excelsior	17	880	10	M	F	Barbed Wire attached to stem/s Branch stubs evident Crossing and rubbing branches Lapsed Pollard Low crown form Minor dead wood evident in the crown (<75mm) Multi leadered form Loss of leaders with evidence of decay	350	10.6	B (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T34	Ash Fraxinus excelsior	19	est 820	N - 9 S - 6 E - 6 W - 7	M	F	Barbed Wire attached to stem/s Branch stubs evident Broken branches evident Crossing and rubbing branches Epicormic growth evident within the crown Low crown form Minor dead wood evident in the crown (<75mm) Potential Roost Features (PRF) Loss of secondary leader at 3m to south east Innontus Hispidus present	304	9.8	B (i)
T35	Ash Fraxinus excelsior	13	est 800	8	M	F	Base obscured Branch stubs evident Dense undergrowth at the base Established ivy cover Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Situated offsite	290	9.6	C (i)
T36	Red Oak Quercus rubra	10	est 200 200	3	SM	F	Base obscured Established ivy cover Overhead cables	36	3.4	C (i)
T37	English Oak Quercus robur	17	est 1000	10	M	G	Base obscured Epicormic growth evident within the crown Minor dead wood evident in the crown (<75mm) Multi leadered form Situated offsite	452	12.0	A (i)
T38	Apple Malus domestica	6	320	N - 3 S - 3 E - 1 W - 1	M	P	Specimen in extensive decline	N/A	N/A	U

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
GROUPS OF TREES										
G1	Ash Fraxinus excelsior Crack Willow Salix fragilis English Oak Quercus robur Field Maple Acer campestre Hawthorn Crataegus monogyna English Elm Ulmus procera Hazel Corylus avellana	12	avg 350	3	EM / M	F	Branch stubs evident Crossing and rubbing branches Epicormic growth evident within the crowns Established ivy cover Interlocking crowns Low crown forms Minor dead wood evident in the crowns (<75mm) Multi stemmed from base Single stem forms Tree group east of track	55	4.2	B (ii)
G2	Blackthorn Prunus spinosa Elder Sambucus nigra Field Maple Acer campestre Hawthorn Crataegus monogyna English Elm Ulmus procera	6	avg 150 150 150	2	EM / M	F	Crossing and rubbing branches Dense undergrowth at the base Interlocking crowns Low crown forms Outgrown hedgerow	31	3.1	C (ii)
G3	Ash Fraxinus excelsior	16	upto 530	8	M	F	Bark wounds noted Branch stubs evident Dieback of the crowns observed Epicormic growth evident within the crowns Etiolated forms Interlocking crowns Light ivy cover Minor dead wood evident in the crowns (<75mm) Group of three trees within depression	127	6.4	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G4	Ash Fraxinus excelsior Blackthorn Prunus spinosa English Oak Quercus robur Field Maple Acer campestre Hawthorn Crataegus monogyna English Elm Ulmus procera Hazel Corylus avellana	8	avg 250	3	EM / M	F	Branch stubs evident Crossing and rubbing branches Dead trees noted Epicormic growth evident within the crowns Established ivy cover Interlocking crowns Low crown forms Minor dead wood evident in the crowns (<75mm) Multi stemmed from base Single stem forms Tree group east of track	28	3.0	C (ii)
G5	Ash Fraxinus excelsior Field Maple Acer campestre Hawthorn Crataegus monogyna English Elm Ulmus procera Bird Cherry Prunus padus	5	est 8x 150	3	EM	F	Base obscured Crossing and rubbing branches Interlocking crowns Low crown forms Multi leadered forms Situated offsite Intermittent motorway boundary group	81	5.1	B (ii)
G6	Blackthorn Prunus spinosa	3	est 6x 80	1	M	P	Browsing damage noted on main stem Crossing and rubbing branches Dieback of the crowns observed	17	2.4	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G7	Ash Fraxinus excelsior Elder Sambucus nigra Hawthorn Crataegus monogyna Horse Chestnut Aesculus hippocastanum Sycamore Acer pseudoplatanus English Elm Ulmus procera Prunus sp. Weeping Willow Salix x sepulcralis 'Chrycosoma' Leyland Cypress Cupressocyparis leylandii	10	avg 300	3	EM / M	F	Branch stubs evident Broken branches evident Crossing and rubbing branches Dead trees noted Dense undergrowth at the base Epicormic growth evident within the crowns Established ivy cover Interlocking crowns Low crown forms Situated offsite	41	3.6	B (ii)
G8	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna English Elm Ulmus procera Hazel Corylus avellana Holly Ilex aquifolium	6	est 8x 100	2	EM	F	Coppiced forms Crossing and rubbing branches Established ivy cover Interlocking crowns Low crown forms Multi leadered forms	36	3.4	C (ii)
G9	Blackthorn Prunus spinosa Crack Willow Salix fragilis Hawthorn Crataegus monogyna Hybrid Black Poplar Populus x canadensis Hazel Corylus avellana	28	est 850	8	EM / M	F	Branch stubs evident Broken branches evident Crossing and rubbing branches Dense undergrowth at the base Epicormic growth evident within the crowns Established ivy cover Interlocking crowns Low crown forms Major dead wood evident in the crowns (>75mm) Minor dead wood evident in the crowns (<75mm) Situated offsite	327	10.2	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G10	Ash Fraxinus excelsior Blackthorn Prunus spinosa Crack Willow Salix fragilis Hawthorn Crataegus monogyna Hazel Corylus avellana	5	est 6x 80	2	EM	P	Crossing and rubbing branches Dense ivy cover on main stems Interlocking crowns Low crown forms Outgrown hedgerow	17	2.4	C (ii)
G11	Ash Fraxinus excelsior Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna Hazel Corylus avellana Bird Cherry Prunus padus	10	est 150 150 150	2	EM	F	Branch stubs evident Crossing and rubbing branches Dense undergrowth at the base Flail damage evident Interlocking crowns Low crown forms Multi stemmed from base	31	3.1	C (ii)
G12	Ash Fraxinus excelsior English Oak Quercus robur	6	est 300	4	SM	F	Crossing and rubbing branches Interlocking crowns Low crown forms Situated offsite Individuals intermittently situated along motorway boundary	41	3.6	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G13	Ash Fraxinus excelsior Blackthorn Prunus spinosa Field Maple Acer campestre Sycamore Acer pseudoplatanus Wild Cherry Prunus avium Hazel Corylus avellana Mountain Ash Sorbus aucuparia Common Larch Larix decidua	12	est 300	4	SM / EM	F	Base obscured Crossing and rubbing branches Dense undergrowth at the base Interlocking crowns Low crown forms Situated offsite Motorway boundary group	41	3.6	B (ii)
G14	Leyland Cypress Cupressocyparis leylandii	14	est 300	3	EM	F	Bark wounds noted Crossing and rubbing branches Interlocking crowns Typical crown forms Five trees next to farm house	41	3.6	C (ii)
G15	Hybrid Black Poplar Populus x canadensis Leyland Cypress Cupressocyparis leylandii	13	est 300	3	EM	F	Bark wounds noted Crossing and rubbing branches Interlocking crowns Typical crown forms Two trees next to farm house	41	3.6	C (ii)
G16	Leyland Cypress Cupressocyparis leylandii	14	avg 300	3	EM	F	Bark wounds noted Crossing and rubbing branches Interlocking crowns Typical crown forms Three trees in farm yard	41	3.6	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G17	Hybrid Black Poplar Populus x canadensis Apple Malus domestica Leyland Cypress Cupressocyparis leylandii	18	est 400	5	EM / M	P / F	Bark wounds noted Branch stubs evident Crossing and rubbing branches Interlocking crowns Low crown forms Tree group forming rear garden of farm house	72	4.8	C (ii)
G18	Crack Willow Salix fragilis Leyland Cypress Cupressocyparis leylandii	9	avg 250	2	EM	F	Crossing and rubbing branches Interlocking crowns Low crown forms Group of trees on soil mound Structure in centre of group	28	3.0	C (ii)
G19	Hawthorn Crataegus monogyna English Elm Ulmus procera	7	est 150	1	SM	P	Dead trees noted Dieback of the crowns observed Outgrown hedgerow	10	1.8	C (ii)
G20	Ash Fraxinus excelsior Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna	9	est 6x 100	2	EM / M	F	Crossing and rubbing branches Flail damage evident Interlocking crowns Low crown forms Outgrown hedgerow Western edge maintained as hedgerow Water course in group	27	2.9	C (ii)
G21	Ash Fraxinus excelsior Blackthorn Prunus spinosa Goat Willow Salix caprea Hawthorn Crataegus monogyna English Elm Ulmus procera	8	est 6x 80	2	M	F	Crossing and rubbing branches Dead trees noted Dieback of the crown observed Flail damage evident Interlocking crowns Outgrown hedgerow Double hedge	17	2.4	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G22	Ash Fraxinus excelsior	9	est 6x 100	5	EM / M	F	Coppiced form Crossing and rubbing branches Dense undergrowth at the base Dieback of the crowns observed Multi leaded forms Outgrown hedgerow	27	2.9	C (ii)
G23	Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna Hornbeam Carpinus betulus Scots Pine Pinus sylvestris	5	est 6x 60	2	EM	F	Dense undergrowth at the base Interlocking crowns Low crown forms Outgrown hedgerow	10	1.8	C (ii)
G24	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna Sycamore Acer pseudoplatanus	8	avg 6x 100	3	EM / M	F	Crossing and rubbing branches Dense undergrowth at the base Established ivy cover Interlocking crowns Low crown forms Group of trees along footpath	27	2.9	C (ii)
G25	Holly Ilex aquifolium Lawson Cypress Chamaecyparis lawsoniana	7	est 250	2	EM	F	Crossing and rubbing branches Crowns had been topped Interlocking crowns Low crown forms Overhead cables	28	3.0	C (ii)

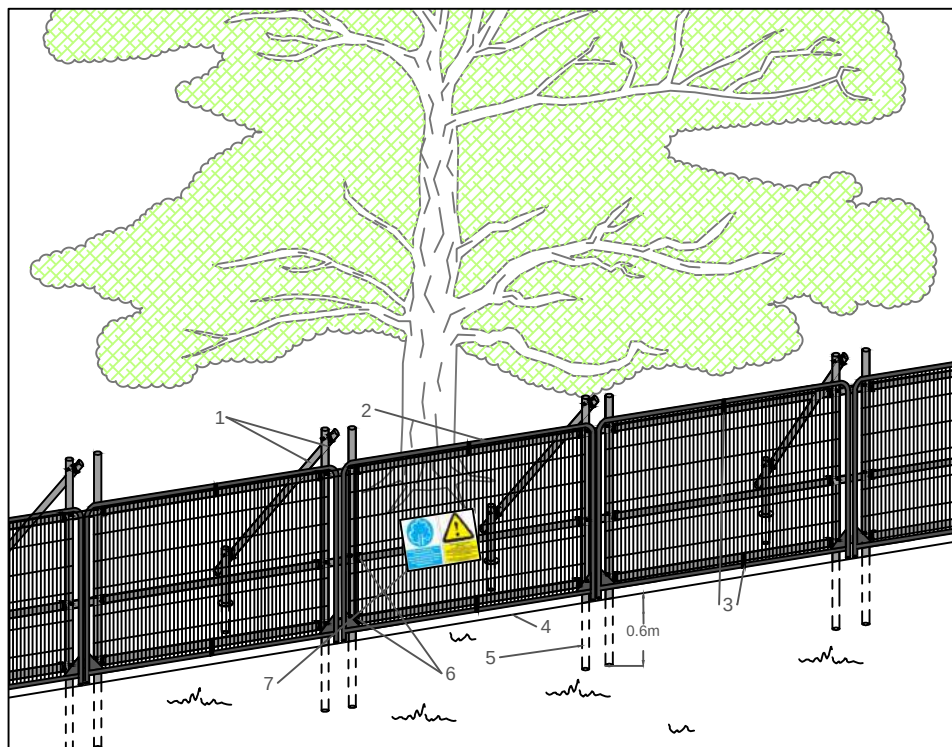
Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G26	Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna Sycamore Acer pseudoplatanus Apple Malus domestica Holly Ilex aquifolium Laural Prunus Laurocerasus Lawson Cypress Chamaecyparis lawsoniana Highclere Holly Ilex x altaclerensis	8	est 150 150 150	3	EM / M	F	Base obscured Crossing and rubbing branches Dense undergrowth at the base Established ivy cover Interlocking crowns Low crown forms Ownership undetermined	31	3.1	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
HEDGEROWS										
H1	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna Dogwood Cornus sanguinea	2	est 6x 60	1	M	F	Maintained hedgerow	10	1.8	C (ii)
H2	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna	2	est 6x 60	1	M	F	Flail damage evident Maintained hedgerow	10	1.8	C (ii)
H3	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna English Elm Ulmus procera	2	est 6x 60	1	M	F	Flail damage evident Maintained hedgerow	10	1.8	C (ii)
H4	Ash Fraxinus excelsior Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna English Elm Ulmus procera	2	est 6x 60	1	M	F	Flail damage evident Maintained hedgerow	10	1.8	C (ii)
H5	Blackthorn Prunus spinosa Elder Sambucus nigra Hawthorn Crataegus monogyna	1	est 6x 60	1	M	F	Flail damage evident Maintained hedgerow	10	1.8	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H6	Hawthorn Crataegus monogyna Holly Ilex aquifolium	4	est 6x 60	1	M	F	Base obscured Crossing and rubbing branches Interlocking crowns Outgrown hedgerow	10	1.8	C (ii)
H7	Ash Fraxinus excelsior Blackthorn Prunus spinosa Hawthorn Crataegus monogyna English Elm Ulmus procera	3	est 6x 60	1	M	F	Crossing and rubbing branches Dense undergrowth at the base Flail damage evident Gaps present in hedgerow Maintained hedgerow	10	1.8	C (ii)
H8	Holly Ilex aquifolium	1	est 6x 60	1	M	F	Crossing and rubbing branches Flail damage evident Maintained hedgerow	10	1.8	C (ii)
H9	Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna English Elm Ulmus procera Hazel Corylus avellana Dogwood Cornus sanguinea	3	est 6x 70	2	EM / M	F	Dense undergrowth at the base Dieback of the crowns observed Recently undergone formal management	13	2.1	C (ii)
H10	Ash Fraxinus excelsior Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna English Elm Ulmus procera Hazel Corylus avellana Dogwood Cornus sanguinea	2	est 6x 60	1	M	F	Crossing and rubbing branches Dieback of the crown observed Flail damage evident Maintained hedgerow	10	1.8	B (ii)

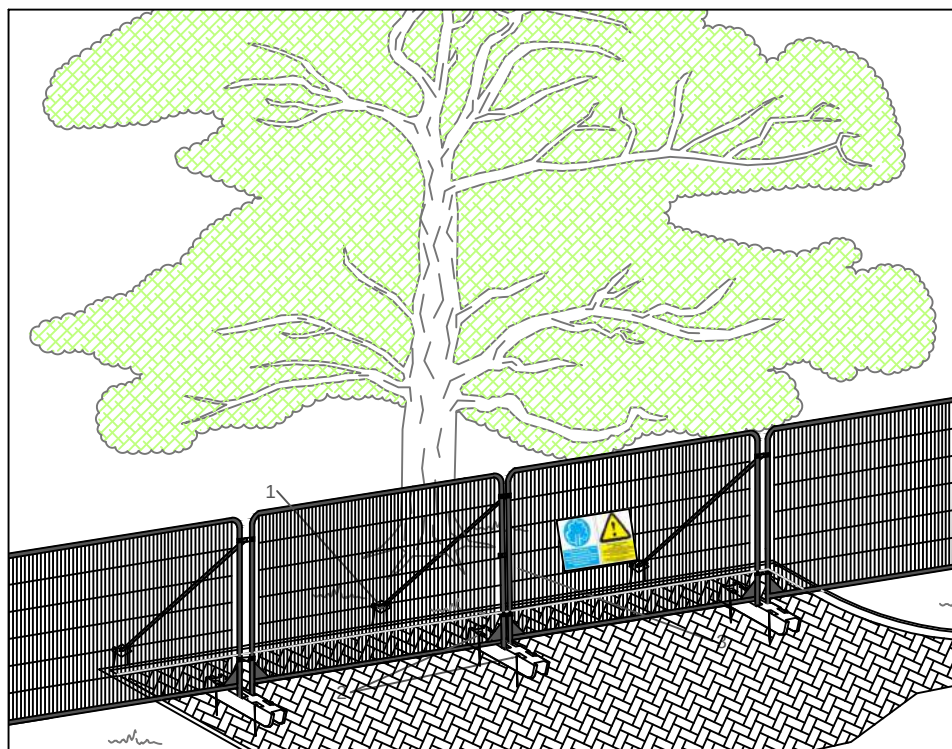
Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H11	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna	1	est 6x 60	0.5	M	F	Flail damage evident Gaps present in hedgerow Maintained hedgerow	10	1.8	C (ii)
H12	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna English Elm Ulmus procera	2	est 6x 60	1	M	F	Crossing and rubbing branches Flail damage evident Maintained hedgerow	10	1.8	C (ii)
H13	Ash Fraxinus excelsior Blackthorn Prunus spinosa Hawthorn Crataegus monogyna English Elm Ulmus procera	2	est 6x 60	1	M	F	Crossing and rubbing branches Flail damage evident Maintained hedgerow	10	1.8	C (ii)
H14	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna English Elm Ulmus procera	3	est 6x 60	1	M	F	Crossing and rubbing branches Dense undergrowth at the base Interlocking crowns Low crown form Outgrown hedgerow	10	1.8	C (ii)
H15	Holly Ilex aquifolium Privet Ligustrum ovalifolium	2	est 10x 40	0.5	M	G	Maintained hedgerow	7	1.5	B (ii)
H16	Privet Ligustrum ovalifolium	2	est 10x 40	0.5	M	G	Maintained hedgerow	7	1.5	B (ii)
H17	Sycamore Acer pseudoplatanus Holly Ilex aquifolium mixed shrubs	5	est 6x 50	0.5	EM	F	Maintained hedgerow	7	1.5	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H18	Privet Ligustrum ovalifolium	1	est 6x 50	0.5	M	G	Maintained hedgerow	7	1.5	C (ii)
H19	Holly Ilex aquifolium mixed shrubs Lawson Cypress Chamaecyparis lawsoniana	3	est 150	1	EM	F	Crossing and rubbing branches Dense undergrowth at the base Outgrown hedgerow	10	1.8	C (ii)
H20	Ash Fraxinus excelsior Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna	9	est 6x 100	2	EM / M	F	Crossing and rubbing branches Flail damage evident Interlocking crowns Low crown forms Outgrown hedgerow Recently managed as hedgerow	27	2.9	C (ii)



Standard specification for protective barrier

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



Above ground stabilising systems

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

NOTES

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APPENDIX B PROTECTIVE FENCING SPECIFICATIONS

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