



Redrow Homes Limited

Land to the South West of Lutterworth Road, Burbage

Arboricultural Assessment

November 2023

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Rev	Issue Status	Prepared / Date	Approved/Date
-	Draft	HR / 01.02.23	TCB / 02.02.23
-	Final	HR / 05.05.23	TCB / 05.05.23
A	Updated text and layout	DB / 01.11.23	HR / 01.11.23

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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 July 2021

- 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 July 2021.
- 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 the absence of a development plan or the development plan is out of date, the acting LPA should grant planning consent so far as the development proposals do not breach the policies and guidance outlined in the NPPF.
- 2.3 In relation to arboriculture, the NPPF also states that:

- *131 'Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined (footnote 50), 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 50: unless, in specific cases, there are clear, justifiable, and compelling reasons why this would be inappropriate)*
- *180 (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 63) and a suitable compensation strategy exists'.*

and provides specific guidance that:

- *180 (d) 'development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity'.*

- 2.4 With reference to paragraph 180 (c), examples of what is deemed to be '*wholly exceptional*' are included within Footnote 63 and provides the examples of '*infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat*'.

Statutory Considerations

- 2.5 Local authorities have a Duty under the Town and Country Planning Act to create Tree Preservation Orders (TPO) in order to protect and preserve specific trees and woodlands that bring significant amenity benefit to a particular site or location. Under a TPO it is a criminal offence to cut down, top, lop, uproot, or 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.

- 2.6 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.
- 2.7 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

- 2.8 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
- 2.9 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.

¹ <http://magic.defra.gov.uk/>

- 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.

3.4 **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.

- 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.

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

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

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

- 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.

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 1693-08-02-100 July 23 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. 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.

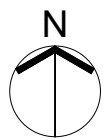
- 7.16 Notice boards, telephone cables or other services should not be attached to any part of a retained tree.
- 7.17 Any trees which need to be felled adjacent to or are present within a continuous canopy of retained trees, must be removed with due care (it may be necessary to remove such trees in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

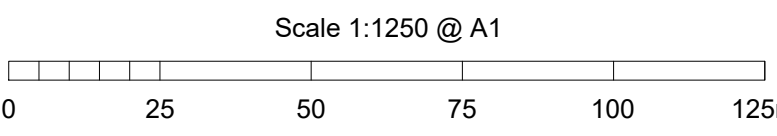
Protection for Aerial Parts of Retained Trees

- 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)



NOTES

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

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

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
rev	date	description	drawn



- masterplanning
- environmental assessment
- landscape design
- urban design
- ecology
- architecture
- arboriculture

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client
Redrow Homes Limited

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

drawing title
TREE SURVEY PLAN

scale
1:1250 @ A1

drawn/checked
HR / TCB

date
December 2022

drawing number
9685-T-11

rev
-

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- KEY
- Category U - Trees / Groups Unsuitable for Retention (BS 5837:2012)
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Scale 1:1250 @ A1

0 25 50 75 100 125m

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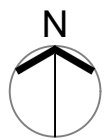
drawn/checked
HR / TCB

date
December 2022

drawing number
9685-T-12

rev
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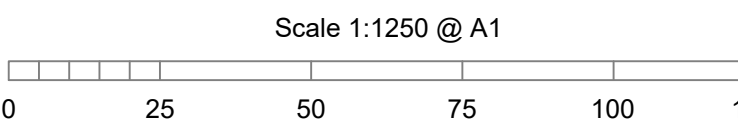
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1:1250 @ A1

KEY

-  Tree Group to be Retained
-  Tree/Group to be removed to facilitate the proposals
-  Category U - Unsuitable for retention on arboricultural grounds
-  Hedgerow Proposed to be Retained and Incorporated into the New Development
-  Hedgerow Proposed to be Removed to Facilitate the Development upon Approval of the Application
-  Root Protection Area (Shown for retained trees only)
-  Individual / Group Number and BS Category
-  Individual / Group Number to be Removed and BS 5837:2012 Category
-  Indicative Shade Pattern (where appropriate)



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rev	date	description	drawn
A	01.02.23	First Issue	RG
B	10.02.23	Update layout	RG
C	05.05.23	Update layout	RG
	01.11.23	Update layout	DB



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TREE RETENTION PLAN

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drawn/checked

DB

date

Nov 2023

drawing number

9685-T-13

rev

C

CAD file: \\FPCR-FS-01\EarlyWork\9600\9685\ARB\Plans\Tree Retention Plan.dwg