Preliminary Arboricultural Impact Assessment

Land North of Camp Road, Heyford Park

23rd December 2021

Tyler Grange

TG Report No. 13464_R05a_LS_TW

Report No:	Date	Revision	Author	Checked
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Appendices:

Plans:

Summary

S.1. This report details the findings of the tree survey and the potential impacts towards existing trees to accommodate the proposed new development at land at Camp Road, Heyford Park, hereafter known as 'the site'.

S.2. This report supports an outline application for residential development including affordable housing, green infrastructure, landscape buffers and Sustainable Urban Drainage Systems (SuDS), with all matters reserved except for access which is to be taken from Camp Road.

S.3. Existing trees on this site form a key component of the site's overall green infrastructure along its boundaries. The trees in these areas comprise mature oaks both set within the field boundary hedgerows and within the open field, as well as willow spp., oak and alder scattered along the water bodies in the northeast corner.

S.4. The survey and assessment work has been completed by a suitably qualified arboricultural consultant of Tyler Grange Group Limited on behalf of Richborough Estates and Lonestar Land. The survey and assessment have been completed in accordance with the British Standard 5837 (2012).

S.5. The site does not fall within a Conservation Area or Ancient Woodland designation and no Tree Preservation Order's (TPO's) are located on or adjacent to the site.

S.6. The proposed development requires minimal losses of trees and has sensitively considered the existing tree cover in respect of RPA incursions and shading constraints. Tree loss is limited to three sections of hedgerow (G13, H33 and H36) to facilitate the construction of the internal road network totalling 130.5 metres, as well as some pruning of G9. These are considered low value features (Category C) and can be easily replaced / compensated for as part of future soft landscaping proposals.

S.7. The opportunities for new tree planting as part of the development is expected to provide a future net gain in tree cover given the limited amount of tree loss. The development is therefore considered supportable in the context of the NPPF and local planning policy as it relates to trees.

S.8. Further work is recommended to include a full Arboricultural Method Statement detailing procedures for tree protection throughout the construction stage. This can be secured by a suitably worded planning condition.

Section 1: Introduction

Context

1.1 An outline planning application is to be submitted to Cherwell District Council, for the proposed development of up to 230 residential units with all matters reserved except for access. The proposed development is shown on the Indicative Layout Plan included to the rear of this report (see **Appendix 1**).

Purpose

1.2 This report:

- Provides the findings of a field-based tree survey, setting out the baseline survey results and the associated tree constraints towards new development; and
- Addresses the potential arboricultural impacts of the proposed outline development and in the context of local and national planning policy by way of a Preliminary Arboricultural Impact Assessment.

1.3 Cherwell District Council's (CDC) local planning policy and national planning policy pertinent to trees and the new development is set out at **Appendix 2**. Policy EQ5 requires that existing Green Infrastructure is protected against any adverse impact of development proposal and protects and incorporates existing features (such as trees) into the overall design.

1.4 The tree survey and assessment has been guided by the recommendations set out within the British Standard 5837 (2012) 'Trees in relation to design, demolition and construction – recommendations' (hereafter 'BS5837') to accord with industry best practice.

Section 2: Tree Survey

Site Description

2.1 The site is located north of Camp Road and is demarcated by the red line at **Appendix 1**. The site is centred on grid reference SP 52143 25961. It comprises one arable field, one pastoral field and a paddock comprising water bodies, areas of woodland and a high degree of trees cover in the west. The site is bounded by natural features including trees, hedgerows, woodland, bushes and ditches. The mature tree cover within the application site is predominantly located at the boundaries and within the paddock to the west. Flail-cut hedgerows separate each field and along Camp Road.

Tree Survey Summary

2.2 A tree survey was completed in accordance with BS5837, and the methodology as detailed at **Appendix 3**. The survey was completed by a suitably qualified Arboricultural Consultant of Tyler Grange on 22nd September 2021. A measured topographical survey (supplied by others) was used to inform the location of trees and their surrounding context.

2.3 The survey area covered a larger parcel of land in terms of baseline assessment than the application site shown at appendix 1. This included an area to the south of the application area. Therefore, the survey summary at table 1 encompasses the whole survey area and not just the application site.

2.4 The distribution of the trees surveyed is illustrated on the **Tree Constraints Plan (TCP) (See Plan 1)**, which includes plotted details of their constraints to new development in accordance with BS5837, including:

- Tree quality gradings[1];
- Root Protection Areas (RPAs)[2];
- Tree canopy spreads[3]; and
- Tree shading[4].

2.5 Findings for each of the trees surveyed are detailed in the Tree Survey Schedule (**See Appendix 5**). This provides a tabulated record of the trees surveyed, including; reference numbers, species composition, tree dimensions, life stage, physiological and structural condition, and the arboricultural value of each survey entry.

2.6 The trees surveyed have been categorised using the 'cascade chart for tree quality assessment' (**See Appendix 4**) recommended by BS5837. The grading system allows informed decisions to

[1] The value of arboricultural features surveyed in accordance with the methodology set-out Appendix 3.
[2] a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. See further explanation at Appendix 3.
[3] Dimensions of the trees crown spread and clearance from ground level. See further explanation at Appendix 3.
[4] Shade cast by existing trees which may affect the availability of sunlight and daylight within a new development. See further explanation at Appendix 3.

made concerning the design and impact of the development in relation to the arboricultural value of the trees surveyed.

2.7 A breakdown of category gradings across the trees and groups surveyed is provided in **Table 1** below.

Table 1: Category Grading of Arboriculture Features by Number

	Category U	Category A	Category B	Category C
Trees		T10, T12, T16, T17, T24, T25, T37,	T1, T5, T7, T15, T18, T19, T20, T21, T22, T23, T32, T38, T39, T44, T46	T34, T35, T40, T41, T42, T43, T45,
Groups		G14, G26,	G2, G3, G4, G6, G8, G11, G27, G28, G29, G20, G31, G47	G9
Hedgerows				H33, H36,

2.8 Trees of high arboricultural value (category A) are denoted by a Green tree canopy outline. Seven category A trees were found during the survey. All category A trees are established within the north western paddock. Such trees are considered the principal arboriculture features of the site.

2.9 Trees of moderate arboricultural value (Category B) are denoted by a Blue tree canopy outline, as illustrated on the TCP. They signify those that provide a moderate arboricultural feature. Category B trees are considered as desirable to retain as part of the development as they include mature trees and others with good future potential. This classification has also been assigned to groups of trees which attract a higher collective rating than they might as individuals.

2.10 Trees of low arboricultural value trees are denoted by a Grey tree canopy outline as illustrated on the TCP. The remaining tree cover is considered to provide limited or transient benefits which may be readily replaced in the existing context. Such trees subsequently presented a minimal constraint to proposed development from an arboricultural perspective.

Tree-related Designations

2.11 Following a background check using CDC's online interactive mapping service in December 2021, the presence or absence of tree-related designations is detailed in **Table 2** below.

Table 2: Tree-related Designations

Designation Type	Tree Reference Numbers
Tree Preservation Order[5]	None
Conservation Area[6]	None
Ancient Woodland [7]	None
Woodland Habitat [8]	None

5 A Tree Preservation Order is an order made by a local planning authority in England to protect specific trees, groups of trees or woodlands in the interests of amenity. An Order prohibits the any works and damage to trees (with some exceptions) without the local planning authority's written consent. More information can be found online https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general.
6 Trees in a conservation area that are not protected by an Order are protected by the provisions in section 211 of the Town and Country Planning Act 1990. These provisions require people to notify the local planning authority, using a 'section 211 notice', 6 weeks before carrying out certain work on such trees, unless an exception applies. More information can be found online https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general.
7 Ancient woods are areas of woodland that have persisted since 1600 in England and Wales, and 1750 in Scotland. The Magic Maps website https://magic.defra.gov.uk/MagicMap.aspx has been used to search for ancient woodland on or adjacent to a site.
8 Spatial data of woodlands identified under the Priority Habitat Inventory (England) Published by Natural England. The Magic Maps website https://magic.defra.gov.uk/MagicMap.aspx has been used to search for woodland on or adjacent to a site.

Section 3: Preliminary Arboricultural Impact Assessment

3.1. The assessment of arboricultural impacts has been based on the proposed illustrative layout (**See Appendix 1**). Given the outline nature of the design (and in the absence of detailed proposals for layout and engineering etc), this report seeks to present a worse-case scenario of potential tree removal to accommodate the development, based on illustrative design. It is, therefore, reasonable to expect that, as part of future detailed designs, the implications of the development towards trees will be refined further and could be subject to change.

3.2. The assessment is informed by a composite overlay of the BS5837 tree survey information and proposed indictive layout which is shown on the Tree Retention and Removal Plan (TRRP) **(See Plan 2)** located to the rear of this report.

Tree Retention and Removal

3.3. The scheme does not require removal of any of the surveyed individual trees. Trees will be retained at the boundaries within the hedgerows, within buffers of open space to avoid future pressures for tree works. This has been achieved as part of an iterative design process with the masterplanners, where developable areas have been modelled around the higher value trees.

3.4. Proposed removals are limited to sections of hedgerow (G13, H33 and H36) totalling approximately 130.5 metres to facilitate access across the fields. Their removal is localised and will not have a significant adverse impact on the amenity of the surrounding area.

Proximity of Development to Retained Trees

3.5. The baseline BS5837 survey findings have been utilised to inform the outline scheme. The proposed construction of dwellings are to be located outside of the RPAs, tree canopies and shading arcs of retained trees as a result. This is shown on the TRRP, demonstrating an adherence to the principal trees, all of which are to be safeguarded as a result of the early engagement and utilisation of the BS5837 survey data.

New Tree Planting Opportunities

3.6. A landscape strategy has been developed as part of this application that will seek to plant a diverse mixture of native trees in the landscape buffers to promote biodiversity and visually soften the effects of the built form. Suggestive landscape planting has been shown on the Indicative Layout Plan which includes a native wet woodland, large areas of public open space and provision of trees within the street-scene, as well as restocking of the western boundary hedgerow, in keeping with local boundary patterns. Full soft landscaping proposals will be produced at the reserved matters stage of the application. The opportunities for new planting suggest the development would provide a net gain in tree cover on the site.

Construction Mitigation

3.7. Given the indicative nature of the proposed design at this stage, a detailed methodology for tree protection during the site preparation and construction stages has not been prepared.

3.8. It is recommended that arboricultural advice continues into the detailed design stage of the development to ensure that trees are duly considered in terms of site layout, engineering, landscaping, and future management. It is therefore recommended that a full Arboricultural Impact Assessment and Arboricultural Method Statement (AMS) is prepared as part of a reserved matters application or to discharge applicable and suitably worded planning conditions should the application be consented.

3.9. An AMS will set out a practical methodology to the protection of retained trees based on fully detailed designs, phasing and construction management. The AMS will typically include the following key items:

- A schedule and specification of tree removal and pruning works;
- Specifications for tree protection barriers and ground protection;
- Procedures for any specialist construction techniques / any supervised excavations within RPAs (if required)
- Phasing of work;
- Site monitoring (where required); and
- A Tree Protection Plan.

Conclusion

3.10. The proposed development, as presented in outline, demonstrates that important arboricultural features will remain unaffected by the development parameters and illustrative layout. No high or moderate value trees require removal, and the remaining boundary tree cover and hedgerow will be retained and protected within public open space. No TPO's, Conservation Area tree cover or Ancient Woodland will be harmed by the development.

3.11. The strategy for new tree planting across the site's green spaces and internally within the development areas suggest that a net gain in tree cover is achievable. The proposed scheme is therefore considered to demonstrate accordance with national and local planning policy as it relates to trees, including ESD10 and ESD13.

3.12. Whilst the limited quantum of vegetation loss and the extent and nature of proposed replanting is considered acceptable on balance at this outline stage, further work is recommended to include arboricultural liaison through the detailed design stage and the adoption of tree protection measures throughout the construction stages to maintain the limited arboricultural impacts resulting from the proposed layout, including the preparation of an Arboricultural Method Statement and Tree Protection Plan which could be secured by a suitably worded planning condition.

Appendix 1: Proposed Illustrative Masterplan

PLANNING

Site boundary *(11.68ha)*

Hybrid/mixed application for upto 1,235 dwellings; retail; medical centre; employment; schools; community use buildings; indoor sports provision; energy facilities; 30m high observation tower with zip-wire; changes of use and demolition to existing buildings; open space; sports facilities; green infrastructure; and upgrades to Chilgrove Drive and the junction with Camp Road
(18/00825/HYBRID)
Status: Outline Approval

1. Full application for 89 dwellings
(15/01357/F)
Status: Undetermined

2. Outline application application for up to 31 dwellings
(21/03523/OUT)
Status: Undetermined

1. Proposed vehicular and pedestrian access via Camp Road
2. Proposed pedestrian/cycle connection to Camp Road
3. Proposed pedstrian/cycle connection to Chilgrove Drive
4. Primary tree lined street with foot/cycleway
5. Secondary street
6. Shared surface
7. Linked private drive
8. Private drive/lane
9. Proposed footpaths/recreational routes
10. Central green space to act as focal point with playspace (LAP)
11. Playspace (LEAP)
12. 'Wet corridor' public open space to provide ecological enhancement and recreation benefits
13. Attenuation basins
14. Existing ponds
15. Existing vegetation retained and enhanced as necessary with locally characteristic and native species
16. Proposed hedgerow strengthening the field pattern by planting up gappy existing hedges
17. Proposed native wet woodland
18. Proposed native tree belts around airfield to enhance urban fringe and reduce the the visual impact using locally characteristic and native species
19. Proposed scattered clusters of native tree planting to give impression of linear tree belt to enhance urban fringe and softening of built form

Rev.	Date	Description

Land north of Camp Road
HEYFORD PARK

Illustrative Masterplan

Job ref:	Drawing number:	Revision:
374	P06	-

Scale:	Date:
1:2,000 @ A3	December 2021

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Appendix 2: Planning Policy Context

National Planning Policy

A2.1. The consideration for existing trees and woodlands in relation to planning and new development is set out within Sections 12 and 15 of the NPPF published in July 2021.

A2.2. Section 12, paragraph 131 states that "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, 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."

A2.3. Section 15, paragraph 174 states that "Planning policies and decisions should contribute to and enhance the natural and local environment by:" Subsection B; "recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland"

A2.4. Section 15, paragraph 180 states that "When determining planning applications, local planning authorities should apply the following principles:" Subsection C; "that development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists".

Local Planning Policy

Cherwell Local Plan (Adopted December 2016)

Policy ESD10: Protection and Enhancement of Biodiversity and the Natural Environment

A2.5. The Council will promote the promote the protection and enhancement of biodiversity and the natural environment will be achieved by the following:

- The protection of trees will be encouraged, with an aim to increase the number of trees in the District.

Policy ESD13: Local Landscape Protection and Enhancement

A2.6. Opportunities will be sought to secure the enhancement of the character and appearance of the landscape, particularly in urban fringe locations, through, the restoration, management or enhancement of existing landscapes, features or habitats and where appropriate the creation of new ones, including the planting of woodlands, trees and hedgerows.

Appendix 3: Tree Survey Methodology, Constraints Mapping and Report Limitations

Field Work

A3.1. In accordance BS5837, the tree survey included all trees within / in influence of the site and the site boundaries that were over 75mm diameter at breast height (1.5m).

A3.2. Measured topographical survey data (supplied by others) was used to inform tree locations their surrounding context. Any trees not identified on the topographical survey are prefixed with (*) and their locations have been approximated using measurements during the tree survey and further informed by aerial photography where required.

A3.3. The trees surveyed were visually inspected from ground level only. No invasive investigations or climbing inspections were necessary to confirm visual or audible signs of defect or debility and no tissue or soil samples were undertaken. For further clarification please refer to the tree survey explanatory notes in below.

Tree Numbers

'T' prefixes have been used to identify individual trees and commence with 'T1'.

'G' prefixes have been used to identify groups of trees.

'H' prefixes have been used to identify hedgerows.

'W' prefixes have been used to identify woodlands.

Species

A3.4. Species are listed by their common name, both in the schedule and in the report text.

Height and Stem Diameter

A3.5. The stem diameter is measured at 1.5m above ground level and given in millimetres (mm). Tree heights are measured in metres (m) using a clinometer where access and land typography allowed. In instances where access to tree's stem and height measurements were not possible, the dimensions have been estimated by eye.

Crown Spread and Height of Crown Clearance

A3.6. Radial crown spread is measured in metres and is listed for each of the four cardinal points where access has been possible to obtain a measurement. Where access was not possible to measure the spread of the canopy, such distances have been estimated by eye or informed by aerial photography.

A3.7. The measured canopy shapes have been plotted on the Tree Constraints Plan at the four cardinal points. For groups of trees, the extent of the canopy has been measured as an average across the group and plotted using the topographical survey mapping. In some instances, Tyler Grange will

use aerial photography to inform the canopy spread of larger tree groups and woodlands where topographical data is limited for such features.

A3.8. The distance between the ground level and the first significant branch or radial tree crown, whichever is the lower, has been measured in metres.

Age Class

A3.9. The age of each tree is defined as follows:

Young - within the first third of reaching full maturity;

Semi-Mature - within the second third of reaching full maturity;

Early-Mature - within the last third of reaching full maturity;

Mature - specimen at full maturity; and

Veteran – tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

Physiological and Structural Condition

A3.10. The physiological or structural condition of each tree is defined as either; good, fair, poor or dead. For each tree, where appropriate, notes on the structural integrity are provided on form, taper, forking habit, storm damage, decay, fungi, pests, etc.

A3.11. An assessment of a tree's physiological condition is defined as:

Good – fully functioning biological system showing expectant vitality for the species i.e. normal bud growth, leaf size, crown density and wound closure.

Fair – fully functioning biological system showing below average vitality i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure.

Poor – a biological system with limited functionality showing clear physiological decline, disease or significantly below average vitality i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure.

Dead – tree observed to fully dead with no living parts.

An assessment of a tree's structural condition is defined as:

Good – no significant structural defects.

Fair – structural defects which could be alleviated through remedial tree surgery or arboricultural management practices.

Poor – structural defects which cannot be alleviated through tree surgery or arboricultural management practices.

Tree Quality Gradings

A3.12 The value of trees has been assessed in accordance with the BS5837 Cascade Chart for Tree Quality Assessment (See Appendix 4). Grading subcategories (1, 2 and 3) reflect arboricultural, landscape and cultural values, respectively.

Root Protection Areas

A3.13. The Tree Constraints Plan shows the approximate extent of Root Protection Areas (RPAs). The RPAs have been plotted and calculated in accordance with the methodology set out in Appendices C and D of BS5837, using the tree stem diameter dimensions obtained during the site visit.

A3.14. Plotted RPAs serve as a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.

A3.15. Where pre-existing site conditions or other factors indicate that rooting may occur asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution observed on-site. Any deviation in the RPA from the original circular plot should take account of the following factors whilst still providing adequate protection for the root system:

a) the morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures and underground apparatus);

b) topography and drainage;

c) the soil type and structure;

d) the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.

A3.16. The plotted RPAs have therefore informed the design of the proposed development where possible. While developing within RPAs should be avoided, special working methods can be adopted to alleviate the RPA disturbance for cases where the development is considered necessary and unavoidable.

Tree Canopies and Shading

A3.17. The distribution of tree canopy cover on and within influence of the site is illustrated on the TCP. Canopies have been plotted at cardinal points for individual and groups of trees. The Tree Survey Schedule included at Appendix 5 to the rear of this report lists the vertical clearance from site ground level to significant tree branching of individual trees. This measurement informs the impacts of accessibility and development beneath tree canopies.

A3.18. The principal tree shadow constraints are shown on the TCP and have been plotted in accordance with BS5837 using the current height of surveyed trees. The indicative shade cast by existing surveyed trees signifies the area within which the amenity interests of shading, available daylight and the proximity of trees to any future site uses may be impacted upon should a tree be retained as part of development.

A3.19. Where shading is unavoidable, the potential adverse impact of shadowing should also be reviewed on balance with the positive aspects of retaining a degree of canopy shade. BS5837:2012 (para. 5.3.4, a) NOTE 1) states that "shading can be desirable to reduce glare or excessive solar heating, or to provide comfort during hot weather. The combination of shading, wind speed/turbulence reduction and evapotranspiration effects of trees can be utilised in conjunction with the design of buildings and spaces to provide local microclimatic benefits".

Limitations

A3.20. The comments made are based on observable factors present at the time of inspection. Although the health and stability of trees in their current context is an integral part of their suitability for retention, it must be understood that this report is not a tree risk assessment and should not be construed as such. While every attempt has been made to provide a realistic and accurate assessment of the trees' condition at the time of inspection, it may have not been appropriate, or possible, to view all parts or all sides of every tree to fulfil the assessment criteria of a risk assessment.

A3.21. No tree can be considered entirely safe, given the possibility that exceptionally strong winds could damage or uproot even a mechanically 'perfect' specimen. It is therefore usually accepted that hazards are only recognisable from distinct defects or from other failure-prone characteristics of the tree or the site. An assessment of the potential influence of trees upon existing buildings or other structures resulting from the effects of trees upon shrinkable load-bearing soils or the effects of incremental root or branch growth, are specifically excluded from this report.

Un-assessable Risks

A3.22. Any alteration to the application site or development proposals could change the current circumstances and may invalidate this report and any recommendations made.

A3.23. The Wildlife and Countryside Act (WCA) 1981 (as amended) makes it an offence to disturb nesting birds or recklessly endanger a bat or its roost. Bats are also a European protected species and are additionally protected under the Conservation (Habitats & c) Regulations 1994 and 2010 (as amended). The survey findings, constraints, opportunities and design or mitigation recommendations included within that report must be read alongside this document.

A3.24. A lack of recommended work does not imply that a tree does not pose an unacceptable level of risk and likewise, it should not be implied that a tree will present an acceptable level of risk following the completion of any recommended work.

Appendix 4: Cascade Chart for Tree Quality Assessment

Appendix 4: Cascade Chart for Tree Quality Assessment

TREES FOR REMOVAL				
Category and Definition	**Criteria**			**Identification on Plan**
Category U Those 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 that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning).			DARK RED
	Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline.			
	Trees infected with pathogens of significance to the health and/or safety of other trees nearby or very low-quality trees suppressing adjacent trees of better quality. (NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve)			
TREES TO BE CONSIDERED FOR RETENTION				
Category and Definition	**Criteria - Subcategories**			**Identification on Plan**
	1.Mainly Arboricultural Values	2. Mainly Landscape Values	3. Mainly Cultural Values, including Conservation	
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remedial defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	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	Trees with material conservation or other cultural benefits.	MID BLUE
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	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or temporary/transient landscape benefit.	Trees with no material conservation or other cultural value.	GREY

Appendix 5: Tree Survey Schedule

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T1	Acer pseudoplatanus (Sycamore)	11m	300	4.00	4.00	4.00	4.00	3.00	Mature	Good	Good	B2	No obvious significant defects. Roadside tree: of value in the streetscene.	3.6	41
G2	Acer pseudoplatanus (Sycamore), Acer campestre (Field Maple), Cornus sanguinea (Dogwood), Rubus fruticosus (Bramble), Fraxinus excelsior (Ash)	11m	200	3.00	3.00	3.00	3.00	3.00	Early Mature	Good	Good	B2	No obvious significant defects. Moderate quality and value.	2.4	18
G3	Acer pseudoplatanus (Sycamore), Acer campestre (Field Maple), Cornus sanguinea (Dogwood), Rubus fruticosus (Bramble), Fraxinus excelsior (Ash), Euonymus europaeus (Spindle), Crataegus monogyna (Hawthorn), Ulmus glabra (Wych Elm), Salix caprea (Goat Willow), Salix sp. (Willow)	6m	100	3.00	3.00	3.00	3.00	0.00	Mature	Fair	Fair	B2	No obvious significant defects. Moderate quality and value. Located on bank.	1.2	5
G4	Betula pendula (Silver Birch)	10m	200	3.00	3.00	3.00	3.00	0.00	Mature	Fair	Fair	B2	No obvious significant defects. Moderate quality and value.	2.4	18

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T5	Quercus petraea (Sessile Oak)	6m	140	2.00	2.25	2.00	2.00	2.00	Semi Mature	Good	Good	B2	No obvious significant defects.	1.7	9
G6	Cornus sanguinea (Dogwood), Betula pendula (Silver Birch), Prunus cerasifera (Cherry Plum), Salix caprea (Goat Willow), Euonymus europaeus (Spindle), Ulmus glabra (Wych Elm), Acer campestre (Field Maple)	10m	200	3.00	3.00	3.00	3.00	0.00	Early Mature	Good	Good	B2	No obvious significant defects.	2.4	18
T7	Salix fragilis (Crack Willow)	13m	900	7.00	7.00	7.00	7.00	3.00	Mature	Fair	Poor	B2	Declining in health and condition. Located on bank. Leaning East. Multiple stems below 1.5m.	10.8	366
G8	Salix fragilis (Crack Willow), Salix caprea (Goat Willow)	7m	150	3.00	3.00	3.00	3.00	0.00	Early Mature	Fair	Poor	B2	No obvious significant defects. Moderate quality and value. Located on bank. Part of linear group and scattered trees	1.8	10
G9	Salix fragilis (Crack Willow), Salix caprea (Goat Willow), Acer campestre (Field Maple), Euonymus europaeus (Spindle), Crataegus monogyna (Hawthorn), Betula pendula (Silver Birch)	7m	150	3.00	3.00	3.00	3.00	0.00	Mature	Fair	Fair	C2	No obvious significant defects. Moderate quality and value. Located on bank. Part of linear group.	1.8	10
T10	Quercus robur (Common Oak)	10m	750	10.00	10.00	10.00	10.00	3.00	Mature	Fair	Fair	A1	No obvious significant defects. Located on bank.	9.0	254

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
G11	Betula pendula (Silver Birch), Salix caprea (Goat Willow), Salix fragilis (Crack Willow)	10m	200	3.00	3.00	3.00	3.00	2.00	Mature	Fair	Fair	B2	No obvious significant defects. Located on bank.	2.4	18
T12	Quercus robur (Common Oak)	10m	700	5.50	6.00	6.50	6.00	2.00	Mature	Fair	Good	A1	No obvious significant defects. Good quality with high landscape value.	8.4	222
T13	Quercus robur (Common Oak)	12m	770	7.25	7.75	9.00	9.50	0.50	Mature	Fair	Good	A1	No obvious significant defects. Good quality with high landscape value.	9.2	268
G14	Quercus robur (Common Oak)	14m	650	7.00	7.00	7.00	7.00	1.00	Mature	Fair	Good	A1	No obvious significant defects. Good quality with high landscape value.	7.8	191
T15	Quercus robur (Common Oak)	9m	390	6.25	4.75	3.75	4.00	3.00	Mature	Fair	Fair	B2	Fair quality with some landscape value. Scattered deadwood. Sparse foliage.	4.7	69
T16	Quercus robur (Common Oak)	14m	780	7.50	7.50	7.50	7.50	1.00	Mature	Fair	Good	A1	No obvious significant defects. Good quality with high landscape value.	9.4	275
T17	Quercus robur (Common Oak)	18m	1210	11.00	10.00	9.00	11.00	2.00	Mature	Good	Good	A1	No obvious significant defects. Good quality with high landscape value.	14.5	662
T18	Quercus robur (Common Oak)	18m	560	5.00	5.00	4.00	6.00	2.00	Mature	Fair	Good	B2	No obvious significant defects. Fair quality with some landscape value.	6.7	142
T19	Quercus robur (Common Oak)	15m	570	7.25	4.25	6.00	7.50	1.00	Mature	Fair	Fair	B2	No obvious significant defects. Fair quality with some landscape value.	6.8	147
T20	Quercus robur (Common Oak)	15m	1000	10.00	4.00	6.00	6.00	3.00	Mature	Fair	Fair	B2	Moderate quality, but of reduced value due to small size. Scattered deadwood.	12.0	452
T21	Fraxinus excelsior (Ash)	9m	700	7.00	7.00	7.00	7.00	2.00	Mature	Fair	Fair	B2	No obvious significant defects. Fair quality with some landscape value.	8.4	222
T22	Quercus robur (Common Oak)	12m	670	2.00	5.50	7.00	7.50	2.00	Mature	Fair	Good	B2	No obvious significant defects. Fair quality with some landscape value. Joint crown with T23	8.0	203

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T23	Quercus robur (Common Oak)	10m	480	7.50	5.50	2.00	6.50	2.00	Mature	Fair	Good	B2	No obvious significant defects. Moderate quality and value. Joint crown with T22	5.8	104
T24	Quercus robur (Common Oak)	12m	960	8.50	12.00	12.00	6.50	1.00	Mature	Fair	Good	A1	No obvious significant defects. Good quality with high landscape value. Joint crown with T25	11.5	417
T25	Quercus robur (Common Oak)	12m	860	9.75	5.50	13.50	7.25	1.00	Mature	Fair	Good	A1	No obvious significant defects. Good quality with high landscape value. Joint crown with T24	10.3	334
G26	Quercus robur (Common Oak)	12m	800	10.00	10.00	10.00	10.00	1.00	Mature	Fair	Good	A1	No obvious significant defects. Good quality with high landscape value. Inaccessible. Ownership is unclear. Group of similar size and stature.	9.6	289
G27	Salix X chrysocoma (Weeping Willow), Salix fragilis (Crack Willow), Salix caprea (Goat Willow), Betula pendula (Silver Birch)	8m	250	5.00	5.00	5.00	5.00	1.00	Mature	Fair	Fair	B2	No obvious significant defects. Group of moderate landscape value. Individual trees within the group are category C. Inaccessible. Ownership is unclear.	3.0	28
G28	Salix X chrysocoma (Weeping Willow), Salix fragilis (Crack Willow), Salix caprea (Goat Willow), Betula pendula (Silver Birch), Ulmus glabra (Wych Elm), Euonymus europaeus (Spindle)	3m	250	1.50	1.50	1.50	1.50	1.00	Mature	Fair	Fair	B2	Multiple stems above 1.5m.	3.0	28

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
G29	Salix caprea (Goat Willow), Betula pendula (Silver Birch), Ulmus glabra (Wych Elm), Euonymus europaeus (Spindle)	3m	150	3.00	3.00	3.00	3.00	1.00	Mature	Fair	Fair	B2	Group of moderate landscape value. Individual trees within the group are category C.	1.8	10
G30	Betula pendula (Silver Birch)	3m	150	3.00	3.00	3.00	3.00	1.00	Mature	Fair	Fair	B2	Group of moderate landscape value. Individual trees within the group are category C.	1.8	10
G31	Crataegus monogyna (Hawthorn), Sambucus nigra (Elder), Ulmus sp (Elm)	3m	150	3.00	3.00	3.00	3.00	1.00	Mature	Fair	Fair	B2	Group of moderate landscape value. Individual trees within the group are category C.	1.8	10
T32	Acer pseudoplatanus (Sycamore)	10m	400	4.00	4.00	4.00	4.00	4.00	Mature	Fair	Fair	B2	Roadside tree: of value in the streetscene.	4.8	72
H33	Acer pseudoplatanus (Sycamore), Prunus spinosa (Blackthorn), Euonymus europaeus (Spindle), Crataegus monogyna (Hawthorn), Fraxinus excelsior (Ash)	4m	150	2.00	2.00	2.00	2.00	4.00	Mature	Fair	Fair	C2	Low quality and value. Provides some screen. Roadside tree: of value in the streetscene. Ivy on stem. Ivy in crown. Low vigour/poor extension growth.	1.8	10
T34	Betula pendula (Silver Birch)	8m	400	4.00	4.00	4.00	4.00	4.00	Mature	Fair	Poor	C1	Declining in health and condition. Roadside tree: of value in the streetscene. Ivy on stem. Unable to inspect stem due to Ivy. Ivy in crown.	4.8	72
T35	Fraxinus excelsior (Ash)	8m	300	3.00	3.00	3.00	3.00	4.00	Early Mature	Fair	Fair	C1	Declining in health and condition. Sparse foliage. Dieback in crown.	3.6	41

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
H36	Fraxinus excelsior (Ash), Acer pseudoplatanus (Sycamore), Sambucus nigra (Elder), Crataegus monogyna (Hawthorn), Prunus spinosa (Blackthorn)	3m	100	1.50	1.50	1.50	1.50	0.00	Early Mature	Fair	Fair	C1	No obvious significant defects. Low quality and value.	1.2	5
T37	Quercus robur (Common Oak)	12m	600	7.00	7.00	7.00	7.00	4.00	Mature	Fair	Fair	A2	Moderate quality and value. Roadside tree: of value in the streetscene.	7.2	163
T38	Acer pseudoplatanus (Sycamore)	12m	661	6.00	6.00	6.00	6.00	4.00	Mature	Fair	Poor	B2	Multiple stems at ground level. Included bark present in main fork. Decay present on stem. Ivy in crown. Low vitality	7.9	198
T39	Quercus robur (Common Oak)	9m	550	5.75	5.75	5.75	5.75	3.00	Mature	Fair	Fair	B2	No obvious significant defects. Moderate quality and value.	6.6	137
T40	Fraxinus excelsior (Ash)	10m	500	5.00	5.00	5.00	5.00	3.00	Mature	Poor	Fair	C2	Declining in health and condition. Unable to inspect stem due to Ivy. Ivy in crown. Dieback in crown.	6.0	113
T41	Fraxinus excelsior (Ash)	11m	500	5.25	5.25	5.25	5.25	3.00	Mature	Poor	Fair	C2	Declining in health and condition. Ivy on stem. Ivy in crown. Dieback in crown.	6.0	113
T42	Fraxinus excelsior (Ash)	10m	500	5.25	5.25	5.25	5.25	3.00	Mature	Poor	Fair	C2	Good quality with high landscape value. Ivy on stem. Ivy in crown. Dieback in crown.	6.0	113
T43	Fraxinus excelsior (Ash)	12m	500	5.00	5.00	5.00	5.00	3.00	Mature	Fair	Fair	C2	Declining in health and condition. Ivy on stem. Ivy in crown. Dieback in crown.	6.0	113
T44	Fraxinus excelsior (Ash)	12m	700	5.00	5.00	5.00	5.00	3.00	Mature	Fair	Fair	B2	Ivy on stem.	8.4	222
T45	Fraxinus excelsior (Ash)	12m	600	7.00	7.00	7.00	7.00	4.00	Mature	Fair	Fair	C2	Declining in health and condition. Ivy on stem. Dieback in crown.	7.2	163

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T46	Fraxinus excelsior (Ash), Acer pseudoplatanus (Sycamore)	12m	400	7.00	7.00	7.00	7.00	4.00	Mature	Fair	Fair	B2	Declining in health and condition. Ivy on stem. Dieback in crown.	4.8	72
G47	Acer pseudoplatanus (Sycamore), Quercus robur (Common Oak), Acer campestre (Field Maple)	12m	500	7.00	7.00	7.00	7.00	4.00	Mature	Fair	Fair	B2	No obvious significant defects. Moderate quality and value.	6.0	113

Plans:

Plan 1: Tree Constraints Plan (13464/P13)

Tree Grading Categories

The purpose of categorising surveyed trees based on their arboricultural quality and value is to ensure that the emerging design considers the presence of important trees on the site so that informed decisions are made concerning the removal or retention of trees as a result of the proposals.

The quality of the trees as set out on the Tree Survey Schedule and Tree Constraints Plan is described by reference to BS5837 categories for tree classification.

Grading subcategories (1, 2 and 3) are intended to reflect arboricultural, landscape and cultural values respectively.

Category A trees are denoted by a 'Green' tree canopy outline as illustrated on the TCP. Such trees represent significant arboricultural features and should be regarded as particularly important and desirable to retain within a completed development; they subsequently represent a major constraint during the architectural design process.

Category B trees denoted by a 'Blue' tree canopy outline as illustrated on the TCP. They signify those that provide moderate arboricultural value to the site and are considered important to retain during the emerging design; however, their constraint can hold less weight, particularly where their loss achieves increased Category A tree retention.

Category C trees are denoted by a 'Grey' tree canopy outline as illustrated on the TCP. All remaining trees are considered trees provide limited or transient benefits which may be readily replaced in the existing context. The subsequently present a minimal arboricultural constraint to the emerging design.

Root Protection Areas

The TCP shows the approximate extent of Root Protection Areas (RPAs). The RPAs have been calculated in accordance with the methodology set out in Appendices C and D of BS5837, using the stem diameter dimensions obtained during the site visit.

RPAs are considered to contain sufficient rooting volume to ensure the survival of the tree and should be left undisturbed in order to avoid damage to the roots or rooting environment surrounding the tree. The plotted RPAs have therefore represented a constraint towards the design of the proposals. While developing within RPAs should be avoided, special working methods can be adopted to alleviate the RPA disturbance for cases where the development is considered necessary and unavoidable.

Tree Canopies

The distribution of tree canopy cover within the site is illustrated on the plan. Canopies have been plotted at cardinal points for each of the surveyed trees.

It is recommended that no proposed buildings are sited within the canopy spreads of retained trees. Where it is unavoidable to assemble proposed structures in close proximity to canopies; an allowance for future growth should be considered. This is heavily dependent on the sites existing context and species attributes.

The tree survey schedule lists the vertical clearance from site ground level to significant tree branching of individual trees. This measurement informs the impacts of potential access or development beneath tree canopies. Although the default position is to avoid development / access beneath tree canopies, where it is necessary, tree crown clearance should be considered in design to prevent unnecessary impacts to trees.

Tree Shading

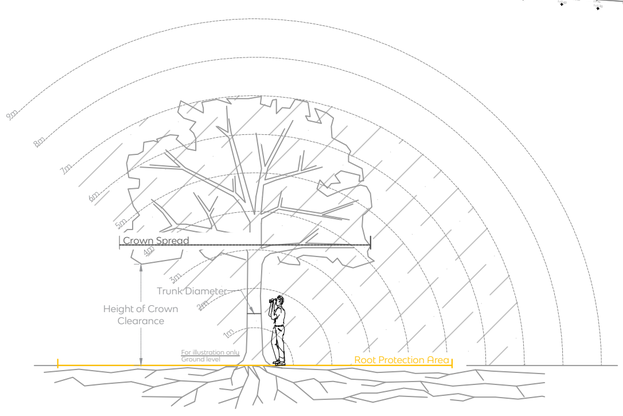
The tree shading constraints are also shown on the plan. The indicative principal shading constraints posed by existing surveyed trees signifies the area within which the amenity interests of shading, available daylight and the proximity of trees for any future site uses may be impacted upon should a tree be retained.

BS5837:2012 states that, "An indication of potential direct obstruction of sunlight can be illustrated by plotting a segment, with a radius from the centre of the stem equal to the height of the tree, drawn from due north-west to due east, indicating the shadow pattern through the main part of the day" (BS5837:2012 para. 5.2.2 – NOTE 1).

As well as the potential adverse impacts of shadowing, such impacts should also be reviewed on balance with the positive aspects of retaining a degree of canopy shade. BS5837:2012 (para. 5.3.4, a) NOTE 1) states that "shading can be desirable to reduce glare or excessive solar heating, or to provide comfort during hot weather. The combination of shading, wind speed / turbulence reduction and evapo-transpiration effects of trees can be utilised in conjunction with the design of buildings and spaces to provide local microclimatic benefits".

Where the proposed use or future function of a site is dependent on a need to avoid or retain a degree of shading, the plotted tree canopy shadow areas shown on the TCP should be utilised to inform the scheme parameters.

It is also advised that any residential aspects of development ensures that habitable rooms and garden spaces are located outside of the tree canopy shadow where possible. Excessive tree shading can cause a negative relationship between trees and new residential occupants; resulting in future pressure for tree removal. Existing trees should also be excluded from proposed private gardens.



Category A - Trees of High Quality and Value

Category B - Trees of Moderate Quality and Value

Category C - Trees of Low Quality and Value

Root Protection Areas

Tree Shading Constraints

0 50m

North

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Rev	Description	Date
-	-	-

Project title
Land North of Camp Road, Upper Heyford

Drawing title
Tree Constraints Plan

Scale 1:1000 @ A1
Date 29.10.2021
Drawn LB
Checked LS

DRAFT

Drawing number
13464_P13

Revision
-

Plan 2: Tree Retention and Removal Plan (13464/P18)

Category A - Trees of High Quality and Value

Category B - Trees of Moderate Quality and Value

Category C - Trees of Low Quality and Value

Proposed Tree Removals

Root Protection Areas

Tree Shading Constraints

0 50m

North

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-	-	-

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Land North of Camp Road, Upper Heyford

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Preliminary Tree Retention and Removal Plan

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13464_P18

Revision
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