

Land off Tattenhall Road, Tattenhall

Outline Arboricultural Impact Assessment

Prepared For: Gladman Development

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Executive Summary

1. TEP has been commissioned by Gladman Developments to conduct a survey of land off Tattenhall Lane in Tattenhall, Cheshire, and a review of designations, policies and other instruments of relevance to arboriculture. This report presents the results, and the known and anticipated effects on arboriculture that would arise in connection with the grant of outline planning permission.

2. 20 individual trees; 5 groups of trees; and 6 hedges were recorded within influencing distance of the application site. Tree cover is situated around the fringes of the site, commensurate with its agricultural use, with the majority spanning the southern boundary. Several large oak trees were recorded on the boundary of or just outside the site, suggestive of great age and long-standing presence in the landscape.

3. The desktop review and site survey identified Tree Preservation Orders covering 3 trees and 2 groups included in the tree survey; no trees within a Conservation Area; no ancient woodland; no veteran trees; and no arboreal Habitats of Principal Importance including Deciduous Woodland, and Traditional Orchard, and Wood Pasture and Parkland. The site is within the Mersey Community Forest and approximately 444m of Hedgerow Habitat of Principal Importance is present.

4. Outline planning permission is sought for the erection of up to 110 residential dwellings (including affordable housing), introduction of structural planting and landscaping, public open space, sustainable urban drainage system and associated works. All matters will be reserved except for the main vehicular access.

5. The layout elements that would be determined in detail by this application would necessitate the removal of 1 individual tree which is currently in a state of advanced decline; and approximately 36m of hedgerow. None of these are outside the application boundary.

6. The development would give rise to no adverse effects that cannot be mitigated. It is reasonable to presume that the scheme proposed in outline would give rise to very limited loss of further trees and hedgerow due to the open interior of the site and provision of landscape buffers to all external boundaries. This is demonstrated by the Development Framework Plan shown on Drawing 3.

7. If outline planning permission is granted, an **Arboricultural Impact Assessment** describing all effects on arboriculture based on the final layout, and identifying clearly which trees would be retained, removed or pruned; an **Arboricultural Method Statement** detailing protection measures and working methods to be observed during construction; and **a scheme of new planting** should be required and could be secured by condition.

1.0 Scope

1.1 TEP has been commissioned by Gladman Developments to conduct an arboricultural survey of land off Tattenhall Lane in Tattenhall, Cheshire, and to make an assessment in accordance with BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations.

1.2 This report has been produced to support an outline planning application. It describes the findings of field and desktop surveys; the known and anticipated effects on arboriculture that would arise following the grant of outline planning permission; and measures that should be incorporated in the proposed development and/or detailed at reserved matters.

Survey

1.3 The survey was undertaken in October 2024 in accordance with BS 5837 by a qualified arboriculturist. The survey method is included at Appendix B.

1.4 A topographical survey was used to record the position of trees and vegetation (drawing reference: 2023-030 Topo-01-2D Rev 0). Where trees were not shown on the topographical survey, their locations were estimated[1].

1.5 Trees on private land outside the application boundary, and at inaccessible locations[2] were surveyed insofar as was practicable. Whilst reasonable effort has been made to ensure the accuracy and comprehensiveness of such records, it cannot be guaranteed.

1.6 All approximated tree locations should be resolved prior to development. This may influence the conclusions of this report.

Limitation

1.7 This report relates to an outline development proposal and should not be interpreted as advice in any other circumstance, including but not limited to the promotion or assessment of alternative schemes; the design of buildings and foundations; management of tree risk; and tree-related subsidence.

1.8 This report constitutes a valid basis for the evaluation of impacts on trees resulting from the grant of outline planning permission for a period not exceeding 2 years from the date of the survey. After this, it would be necessary to review baseline data and conclusions to ensure reliability.

[1] Estimated feature locations are marked on Drawing 1
[2] Limitations to the survey are described at Appendix A

1.9 Conclusions are drawn based on professional judgement, experience and the information provided. If the proposed development changes, the conclusions of this report may cease to be reliable.

1.10 Where the recommendations of this report have been followed, any future deterioration in tree condition shall not be attributable to the development.

Other assessments

1.11 Woody vegetation may be described and evaluated by other assessments, including ecology, landscape, heritage and for biodiversity net gain calculations. It should be noted that these follow different methodologies and sometimes use the same terms to describe different parts of the treescape (e.g. 'hedgerow', and 'woodland'). Care should be taken when reading across or comparing assessments to ensure that comparisons are reliable. Specialist advice may be needed to understand apparent discrepancies in definition or measurement.

2.0 Baseline

The site

2.1 The site is located in Tattenhall, Cheshire. It is located to the west of Tattenhall Road, south of Greaves Cottage and south-east of Greaves Farm. It is approximately 6.3ha in size and is centred on grid reference SJ 48887 59319.

2.2 The site comprises an area of modified grassland which is in use as a grazing paddock for horses. The site is bounded by hedgerows and trees with Keys Brook directly to the south of the site. The wider area surround the site is predominantly rural comprising arable and grazing fields to the north, east and west with the village of Tattenhall approximately 700m to the south.

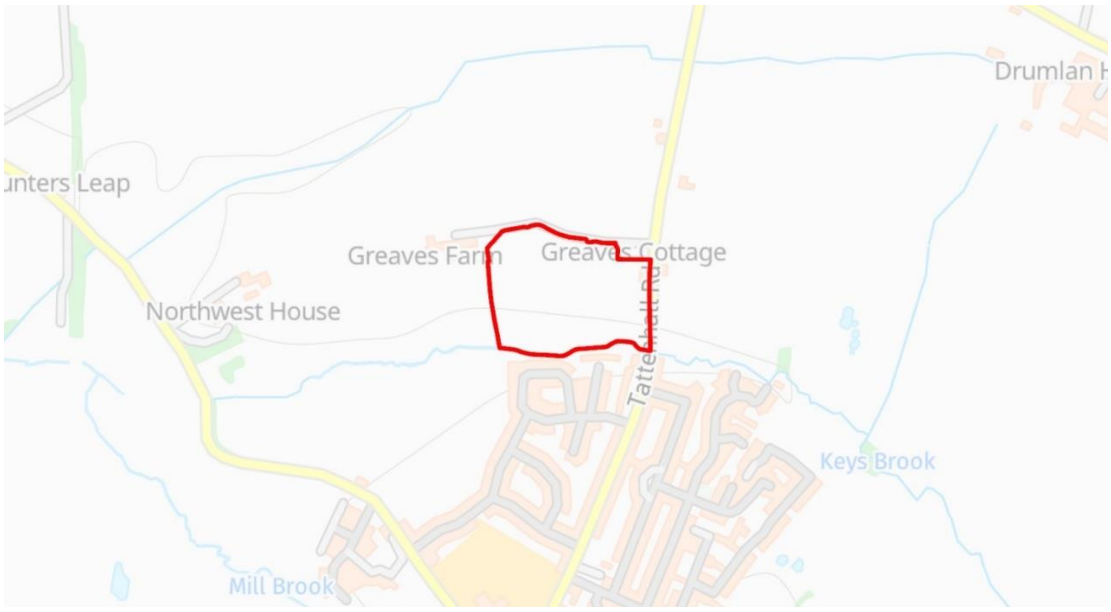


Figure 1: Site location and approximate boundary

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Tree survey

2.3 20 individual trees (T1-T20); 5 groups of trees (G1-G5); and 6 hedges (H1-H6) were recorded within influencing distance of the application site.

2.4 Trees, Groups, Woodland and Hedgerow are collectively referred to by this assessment as '*Features*'. These provide the resolution of the tree survey, and are defined according to Appendix B. Feature locations, their quality categories, canopy spreads and root protection areas are shown on Drawing 1.

2.5 Canopy cover, rather than number of features, is used by this assessment to describe the quantum of trees. The following table provides the aggregated canopy area for mapped trees and the total length of mapped hedgerow on Drawing 1. In some cases, this may be more than the absolute area due to canopy overlap between adjacent features.

Table 1: Existing canopy cover and hedgerow length

Trees	Groups	Woodland	Hedgerow
0.2553 ha	0.1837 ha	0 ha	444 m

2.6 All arboricultural information recorded during the survey is presented at Appendix A.

Overview

2.7 Tree cover is situated around the fringes of the site, commensurate with its agricultural use, with the majority spanning the southern boundary.

2.8 Several large oak trees were recorded on the boundary of, or just outside of, the site. Both sessile and pedunculate oak, along with some hybrid oak, were recorded. 6 individuals (T4, T6, T7, T11, T14 and T15) have stem diameters in the region of 1m in diameter, indicating great age and long-standing presence in the landscape.



Figure 2: Tree T6, a large sessile oak situated on the northern boundary on the site

2.9 The southern boundary of the site consists of sporadic tree groups; individual trees; and a short stretches of hedgerow. Species include oak; alder; hawthorn; and white willow. The most significant tree groups on this boundary are G5 and G3, both of which contain large beech and oak of good form and condition.



Figure 3 View south group G5 on the northern bank of Keys brook

2.10 The eastern site boundary is delineated by a well-established, dense, field hedge comprising hawthorn, ash, oak, and beech. Several trees are also located growing from the hedge separating the site and Tattenhall Road.



Figure 4 Outgrown hedgerow H6 on eastern site boundary

Tree quality

2.11 Under BS 5837 trees are objectively assigned one of four categories to describe their quality. The table below includes a description of each category and the amount of canopy cover meeting the classification. Hedgerows have not been categorised.

Table 2: Summary of BS 5837 quality categorisation[3]

Category	Description	Total existing
A	Trees of high quality, typically with a long remaining life expectancy; and with clear and identified merit as specimens, visually, culturally or for conservation.	0.1764 ha
B	Trees of moderate quality, typically with at least a medium remaining life expectancy; with remediable defects only; or low quality but with collective merit.	0.1803 ha
C	Trees of low quality, typically with at least a short remaining lift expectancy; unremarkable trees of limited merit or impaired condition; or young and small trees that could be replaced.	0.0823 ha
U	Trees that cannot realistically be retained in the context of current land use for more than ten years; with serious and irremediable defects, pathogens or decline.	0.0720 ha

2.12 Tree cover within influencing distance of the site is broadly balanced between moderate quality (Category B) and high quality (Category A), primarily due to the age and collective landscape value of the individuals and groups on the site boundaries.

2.13 Several low quality (Category C) and poor quality (Category U) trees and outgrown hedgerow are present on the southern and eastern boundaries. One dead standing oak is situated next to the site entrance (T20) and a large declining ash (T18) is present within H6 adjacent to Tattenhall Road.

[3] Refer to Appendix B for the full table

Root Protection Areas

2.14 Using the results of the field survey a Root Protection Area (RPA) has been calculated in accordance with BS 5837 using each tree's stem diameter[4]. The RPA represents the minimum area around each tree that must be left undisturbed to ensure its survival.

2.15 Where a tree's rooting pattern is expected to have been influenced by site conditions, the RPA has been adjusted or offset to represent the anticipated spread of roots[5]. On this site, influences on root morphology are considered to be Keys Brook to the south of the site and Tattenhall road to the east.

Policy, designations and protection

Planning policy

2.16 All trees are a material consideration in the planning process. Effects on trees will therefore be considered by the consenting authority. Adverse effects that cannot be mitigated and which are not acceptable on balance against other benefits may weigh against the granting of planning permission.

2.17 There should be a common-sense ambition to limit tree loss to that which is strictly necessary to facilitate the proposal, and to achieve a good design. Trees which are retained should not be harmed and the proposal should present a reasonable account of the prospects for tree retention in accordance with BS 5837.

National Planning Policy Framework

2.18 The National Planning Policy Framework (NPPF) has an overarching environmental objective. This embeds protecting and enhancing the natural environment, improving biodiversity, and adapting to climate change in decision making[6].

2.19 NPPF states that existing trees should be retained wherever possible[7].

2.20 Planning policies and decision making should recognise the wider benefits from natural capital and ecosystem services, including those provided by trees and woodland, and minimise impacts on and provide net gains for biodiversity[8].

2.21 Where significant harm to biodiversity cannot be avoided, mitigated, or compensation provided, planning permission should be refused[9]. Loss or

[4] Refer to Appendix A for Stem Diameters and Appendix B for further information on methodology
[5] See Drawing 1 for RPA shapes
[6] NPPF paragraph 8 (c)
[7] NPPF paragraph 136
[8] NPPF paragraph 187 (b) (d)
[9] NPPF paragraph 193 (a)

fragmentation of trees and woodland may constitute or give rise to significant harm to biodiversity.

2.22 There is a strong policy presumption against loss or deterioration of irreplaceable habitats, such as ancient woodland and ancient or veteran trees. Development resulting in the loss or deterioration of irreplaceable habitats should be refused unless there are wholly exceptional reasons, and a suitable compensation strategy exists[10].

2.23 Opportunities should be taken to incorporate trees in developments, with appropriate measures to secure the long-term maintenance of new planting. Planning decisions should ensure that new streets are tree-lined unless there are clear, justifiable and compelling reasons why this would be inappropriate[11].

Local planning policy

2.24 Cheshire West Council has an adopted Cheshire West and Chester Local Plan (Part One & Two) that contains policies of relevance to trees and this site. In particular:

Policy ENV 3

Green Infrastructure

The Local Plan will support the creation, enhancement, protection and management of a network of high quality multi-functional Green Infrastructure. This will be achieved by:

- Development incorporating new and/or enhanced Green Infrastructure of an appropriate type, standard and size or contributing to alternative provision elsewhere.

- Increased planting of trees and woodlands, particularly in urban areas and the urban fringe.

Policy DM 45

In line with Local Plan (Part One) policies ENV 3 and ENV 4, development will be supported where it conserves, manages and, wherever possible, enhances existing trees, woodlands, traditional orchards, and hedgerows. All significant healthy trees, woodlands, traditional orchards, and hedgerows should be integrated into the development scheme. Where possible, existing significant trees should be incorporated within public open space.

[10] NPPF paragraph 193 (c)
[11] NPPF paragraph 136

Where it is demonstrated to the satisfaction of the Council that integration is not possible and the above assets would be lost, development proposals must:

1. include replacement trees, woodlands and hedgerows within the site, or where this can be demonstrated to not be practical, contribute to off-site provision, prioritised within the locality of the development;

2. include replacement planting at a ratio of at least two new trees for each tree lost. Replacement trees should be of heavy or extra heavy standard, and where prominent trees are to be removed, large specimen trees may be required; and

3. use locally native species, where appropriate.

Development affecting all existing and new woodlands should:

4. support proposals which assist in the positive use of woodlands;

5. promote sustainable management to deliver multiple benefits; and

6. support the aims and policies of the Mersey Forest Plan, where relevant.

A tree survey and arboricultural impact assessment to BS5837:2012 standard (or subsequent revisions) will be expected to be submitted with planning applications where existing significant trees are likely to be affected by the proposed development.

Environment Act

2.25 The Environment Act places a duty on public bodies, including planning authorities, to conserve and enhance biodiversity through the exercise of their functions[12].

2.26 The Act makes provision for biodiversity gain to be a condition of planning permission in England. The assessment of baseline biodiversity includes trees, and any measures to offset losses may also include tree planting or enhancement. Biodiversity Net Gain (BNG) is not covered by this report, although data from this assessment may inform a BNG assessment and calculations.

2.27 Biodiversity is only one of the benefits provided by trees. Tree removal and planting may affect other functions or objectives, and the BNG assessment process does not provide a comprehensive means of either evaluating, mitigating or offsetting effects on arboriculture.

[12] Environment Act 2021 Section 102 (1) and (2)

2.28 Tree planting or enhancement for biodiversity net gain should be regarded as part of arboricultural mitigation and offsetting measures and supplemented as necessary by other measures to render all adverse arboricultural effects acceptable.

Tree Preservation Orders

2.29 A check with the local authority was undertaken on 15th November 2024. Their online mapping system confirmed that 3 individually recorded trees and 3 groups of trees within or adjacent to the site are protected by Tree Preservation Order.

Table 3: Tree Preservation Orders

Order name	Order reference	TEP survey reference
Greenlands Estate, Tattenhall	Tree No. 8	T11
Greenlands Estate, Tattenhall	Tree No. 10	T12
Greenlands Estate, Tattenhall	Tree No. 11	T14
Tattenhall Village No1	Group No. 23	G3
Greenlands Estate, Tattenhall	Tree Nos. 12, 13, 14 and 15	G5

2.30 Works to TPO trees must only be undertaken with the written consent of the Local Authority, given in the form of a planning permission (other than an outline planning permission), discharge of reserved matters, or via a TPO application.

2.31 In the context of a planning application, the presence of a TPO is material but it does not necessitate the retention of protected trees within proposed development. Equally, the lack of a TPO does not mean that removal of any particular tree would be without significant impact. The existence of a TPO may indicate the local authority's view regarding priorities for tree retention and amenity value. BS 5837 recommends that TPOs should be considered in the design process.

Conservation Areas

2.32 A check with the local authority was undertaken on 15th November 2024. Their online mapping system confirmed that no trees within or adjacent to the site are within a Conservation Area.

Ancient woodland

2.33 Ancient woodland is defined in England as any area that has been wooded continuously since at least 1600 AD; it is regarded as 'irreplaceable'[13]. The

[13] NPPF Annex 2: Glossary

presence of ancient woodland has been identified based on Natural England's Ancient Woodland Inventory (Provisional) for England[14].

2.34 The Ancient Woodland Inventory has not yet been revised for Cheshire. This means that it does not include any woodland smaller than 2ha. Therefore, small parcels of unmapped ancient woodland may exist which would only be identified by field surveys.

2.35 The tree survey identified no features or characteristics to suggest that the Natural England mapping is unreliable.

2.36 There is no ancient woodland within or adjacent to the site.

Veteran trees

2.37 Veteran is a term that is used within arboriculture to describe a classification of trees with superlative significance and value. Various definitions exist. In the context of planning, the applicable definition is in NPPF[15].

2.38 NPPF defines veteran trees as those which, because of age[16], size[17] and condition[18], are of exceptional biodiversity, cultural or heritage value. Not all veteran trees are ancient, though they tend to be relatively old for the species. Veteran trees with exceptional biodiversity value are an irreplaceable habitat[19].

2.39 Trees that are not irreplaceable habitats, but which meet other definitions of veteran are likely to be trees of significance to culture, heritage and habitats, and may also merit significant conservation efforts.

2.40 There is no comprehensive national register of veteran trees. The Woodland Trust maintains an inventory of old and large trees, some of which meet the NPPF definition[20]. At the time of writing, it contained no records of relevance to the site.

2.41 An assessment of each tree was made by a qualified arboriculturist as part of the tree survey. There are no veteran trees within or adjacent to the site.

Emerging veterans

2.42 Not all mature trees or those of significant habitat interest are veterans. Trees with individual or simple assemblages of features typically associated with veteran trees

[14] https://magic.defra.gov.uk/magicmap.aspx
[15] NPPF Annex 2: Glossary
[16] See Forestry Commission Information Note (FCIN12) 1998
[17] See Appendix A
[18] See Fay, N. & De Berker, N. (1997) Specialist Survey Method. Veteran Trees Initiative, English Nature
[19] See NPPF Annex 2: Glossary
[20] https://ati.woodlandtrust.org.uk/

were also noted[21]. Such trees may become veterans but should not be treated as such for the purposes of a planning decision.

2.43 Trees which are approaching veteran condition, and which represent the most likely source of future veteran trees within the study area are:

- T6 - a large open grown oak adjacent to northern site boundary. It has extensive grazing damage around the base with less than 25% of live connective bark remaining, but shows relatively good vigour despite this. This tree is categorised as having high quality under BS5837[22].

Community Forests

2.44 Online mapping[23] confirmed that the site is within the Mersey Community Forest.

2.45 An approved Community Forest Plan may be a material consideration in preparing development plans and in deciding planning applications.

Habitats of Principal Importance

2.46 A list[24] of habitats which are of principal importance for the purpose of conserving[25] biodiversity is maintained by the Secretary of State[26]. The list includes habitat types that are defined by woody vegetation, which are listed below. The geographical extent and location of these habitats (excluding Hedgerow) is mapped by Natural England on the Priority Habitat Inventory[27]. Observations were also made to corroborate the mapping during the site survey.

2.47 All public authorities, including local planning authorities and statutory undertakers have a duty to have regard to the purpose of conserving and enhancing biodiversity[28]. Habitats of Principal Importance provide a means of evaluating effects on biodiversity, and relevant to the discharge of this duty. In the context of planning, adverse effects on Habitats of Principal Importance that cannot be mitigated are material to decision making.

Deciduous Woodland

2.48 Six distinct types of woodland[29] are amalgamated in the Inventory under the habitat type 'Deciduous Woodland'.

[21] See Appendix A
[22] See Table 2
[23] https://englandscommunityforests.org.uk/where-are-the-forests/
[24] https://www.gov.uk/government/publications/habitats-and-species-of-principal-importance-in-england
[25] The Environment Act 2021, 102 (1) and (2) amends this duty to include enhancement
[26] Natural Environment and Rural Communities Act 2006, 41 (1)
[27] https://magic.defra.gov.uk/MagicMap.aspx
[28] Natural Environment and Rural Communities Act 2006, 40 (1)
[29] Upland Oakwood; Lowland Beech and Yew Woodland; Upland Mixed Ashwoods; Wet Woodland; Lowland Mixed Deciduous Woodland; Upland Birchwoods

2.49 The Inventory has no records of Deciduous Woodland at the site.

Wood Pasture and Parkland[30]

2.50 Wood Pasture and Parkland are mosaic habitats valued for their trees, especially veteran and ancient trees, and the plants and animals that they support. They are exclusively associated with some species of insects, lichens and fungi which depend on dead and decaying wood. Grazing animals and continuity of management are fundamental to the existence of the habitat, and it can be a type of ancient woodland.

2.51 The Inventory has no records of Wood Pasture and Parkland at the site.

Traditional Orchards[31]

2.52 Traditional Orchards are defined, for priority habitat purposes, as groups of fruit and nut trees planted on vigorous rootstocks at low densities in permanent grassland; and managed in a low intensity way. Habitat structure rather than vegetation type, topography or soils, is the defining feature of the habitat.

2.53 The Inventory has no records of Traditional Orchards at the site.

Hedgerows[32]

2.54 Hedgerow is any boundary line of trees or shrubs over 20m long and less than 5m wide, and where any gaps are less than 20m wide. It may include banks, walls, ditches, herbaceous vegetation, climbing plants or trees within 2m of the centre line. All hedgerows which comprise at least 80% woody native species are included.

2.55 The survey identified 6 Hedgerows[33]. Of these, all except H4 meet the description of the Habitat of Principal Importance.

Biodiversity Net Gain and arboriculture

2.56 Woody vegetation that is included in this assessment may also be mapped and classified as part of an ecological assessment.

2.57 Biodiversity gain assessments and calculations use *Broad Habitat Types* and *Habitat Definitions* derived from UKHab[34] to classify woody vegetation. These include *Individual trees, Hedgerow, Heathland and Shrub*, and *Woodland and*

[30] UK BAP Priority habitat Description for Wood-Pasture and Parkland
[31] UK BAP Priority habitat Description for Traditional Orchards
[32] UK BAP Priority habitat Description for Hedgerows
[33] See Appendix A
[34] See, The UK Habitat Classification Habitat Definitions Version 2.1 (July 2023)

Forest. These terms may be used with different definitions in other assessments, including tree surveys.

2.58 The sub-division of woody vegetation into assessment units or features may differ between ecological and arboricultural assessments; the former being a classification of habitats, and the latter being a classification that reflects management history and opportunities, landscape, amenity, culture, and heritage, as well as habitats.

2.59 The table below sets out the relationship between arboricultural and ecological classification of woody vegetation in general terms.

Table 4: Arboricultural and ecological classification of woody vegetation

Tree survey classification	Habitat Classification (UKHab)
Trees	Normally recorded as *Individual trees* (Urban tree or Rural tree) except where within another habitat (e.g. within a woodland, line or trees, or as a hedgerow tree), in which case trees may be part of the surrounding habitat[35]
Groups	No equivalent classification exists. Groups may comprise any combination of *Individual trees*; *Hedgerows*, (including *Lines of trees*); *Woodland and forest* Habitat Types with moderate or low distinctiveness[36]; and some *Heathland and shrub* habitats[37], especially where young or with developing composition
Woodlands	Typically, Woodland and forest Habitat Types with high distinctiveness[38] (e.g. Lowland Mixed Deciduous); also, less commonly, *Heathland and shrub* habitats comprising woody species, where representing the natural climax vegetation[39]
Hedgerow/Hedges	Typically, *Hedgerow* or *Line of trees*; less commonly may be mapped as *Woodland and forest* habitats, especially where within or on the edge of areas of trees or scrub

2.60 The term Woodland within the tree survey tends to correspond with Woodland Habitats of Principal Importance, and Woodland Habitat Types with high

[35] Tree surveys may isolate and record trees individually for a wide range of reasons that do not relate to habitat
[36] Loosely, 'Other Woodland' types, including UKHab Classifications w1g, w1h and their sub-classifications
[37] All types of Dense scrub h3 except h3d (Bramble scrub)
[38] For Very High distinctiveness, see Section 2.0 Habitats of Principal Importance, Wood Pasture and Parkland
[39] All types of Dense scrub h3, except h3d (Bramble scrub), and h3g (Rhododendron scrub)

distinctiveness. It is reserved for areas of tree cover with that have or are clearly developing the species, age and structural composition and characteristics of semi-natural woodland and represent a stable and naturally regenerating climax vegetation. This tends to exclude woodland and shrub habitats with moderate or low distinctiveness, such as plantation.

2.61 Under the Statutory Biodiversity Metric, Individual Trees are treated as having a habitat area based on the diameter of the stem. Small, Medium, Large and Very Large trees are defined as those with stem diameters between 75mm and 300mm, 300mm and 600mm, 600 and 900mm, and above 900mm respectively[40]. The data tables at Appendix A include stem diameter measurements for trees that were recorded as individuals by the tree survey, and stem diameter ranges for features containing multiple trees[41].

2.62 Irreplaceable habitats, including ancient woodland and veteran trees, must be recorded separately within the Statutory Biodiversity Metric. Accounting for loss or deterioration of irreplaceable habitats cannot be done using the Metric. Enhancement may contribute towards biodiversity where there is no loss or deterioration[42].

Protected species

2.63 No assessment of the presence of protected species has been made during the production of this report. Features of possible interest that were observed incidentally during the tree survey are recorded in Appendix A. Further detail of ecological constraints can be found in the Preliminary Ecological Assessment (Ref: 10797.03.002).

2.64 Works to and around trees have the capacity to affect protected species where present, particularly including birds, bats, great crested newts, badgers, dormice, otters and water voles. Contractors should be familiar with the locations and sensitivities of any protected species that are present and take reasonable avoidance measures or comply with the requirements of any licence agreement in accordance with the advice of an ecologist.

Birds

2.65 Intentional harm to a wild bird, egg, or a nest that is in use or being built is an offence[43]. Disturbance of certain wild birds that are building a nest, or are in, on or

[40] Stem diameters of 300mm (Small), 600mm (Medium), 900mm (Large) and 1,300mm (Very Large) are assumed
[41] Calculated according to BS5837 in the case of multi-stemmed trees
[42] See Biodiversity Metric User Guide, Section 3.5
[43] Wildlife and Countryside Act 1981, 1 (1)

near a nest containing eggs or young, or disturbance of dependent young is also an offence[44].

2.66 All trees are a potential habitat for nesting birds so tree work should ideally, but not essentially, be undertaken outside the bird nesting season. Between March and August, a detailed inspection of each tree should be undertaken by a qualified ecologist to confirm the absence of nesting birds immediately prior to works.

2.67 Some birds nest outside the core nesting season. If an active nest is found at any time of year, work likely to affect the nest must be halted until the nest becomes inactive. This will vary depending on the species of bird but is typically up to six weeks. The advice of an ecologist regarding the duration and size of a protection buffer around the nest should be sought.

Bats

2.68 It is an offence to damage, destroy or obstruct access to any structure or place which is used for shelter or protection[45], or breeding or resting[46] by a bat. Mature trees often contain cavities, splits and ivy, which may be attractive to bats.

2.69 If the presence of a bat, or a roost or resting site is suspected whilst undertaking works on any trees, operations must be halted, and the advice of appropriately licensed ecologist should be sought.

[44] Wildlife and Countryside Act 1981, 1 (5)
[45] Wildlife and Countryside Act 1981, 9 (4)
[46] The Conservation of Habitats and Species Regulations 2017, 43 (1)

3.0 Effects

3.1 In simple terms, the effects on arboriculture comprise an account of which existing trees, groups of trees, hedgerow and woodland would not be retained within the proposed development; what significance they have; and whether adverse effects would or can be mitigated or offset.

3.2 Effects may also include changes to the prospects, qualities and/or future management of remaining trees.

3.3 In the context of an outline application, some effects can be predicted with certainty and described in detail; some can be predicted but only described in general terms; and others may or may not arise, depending on later decisions. This assessment separates these types of effect.

Proposed development

3.4 The proposed development seeks outline planning permission for the erection of up to 110 residential dwellings (including affordable housing), introduction of structural planting and landscaping, public open space, sustainable urban drainage system and associated works. All matters will be reserved except for the main vehicular access.

3.5 The detailed element of the proposed layout is shown on Drawing 2, which is based on the Proposed Site Access Arrangements (drawing reference: 1952/01) provided by Ashley Helme Associates. Proposed tree works associated with these elements are also shown on Drawing 2.

3.6 A Development Framework Plan (drawing reference: PS10797.002B) for the wider site provided by TEP is shown on Drawing 3.

3.7 The proposed development would include a considerable amount of tree, hedgerow and woodland planting but the application under consideration would not secure the detail of this planting. Therefore, this planting cannot be relied upon to inform a planning decision, except insofar as it demonstrates what might be achieved.

Types of effect

3.8 This report supports an outline planning application. Tree removal and retention is a reserved matter and would not be determined by this application, except for tree removal that is necessary to facilitate parts of the layout that are proposed in detail.

3.9 To reflect the varying levels of detail that are available for different aspects of the final development, this report describes two types of effect on arboriculture:

- **Known effects** are those that can be described in detail now and would occur, pending the discharge of any pre-commencement conditions. Outline planning permission would determine and secure them.
- **Anticipated effects** are those that can be inferred from the type of development that is proposed, based on professional judgement and experience. It is reasonable to assume that similar effects would arise, but the particulars would not be determined or secured by this application.

Known effects

3.10 The **Known effects** are shown on Drawing 2. They comprise the extent of tree removal required by detailed elements of the layout, and any tolerable changes to retained trees necessitated or caused by a change in context.

3.11 The removal of some vegetation at the proposed site access junction onto Tattenhall Road is unavoidable, as the eastern boundary of the site is currently vegetated along its entire length.

Anticipated effects

3.12 The **Anticipated effects** are those associated with the residential development areas and internal highways. Development of the type that is proposed is relatively modular in its design and would take advantage of the large open interior of the site. Substantial landscape buffers would be created adjacent to all external boundaries, within which only light structures (principally footpaths) and soft landscaping are proposed.

3.13 Residential development in broad accordance with the Development Framework Plan at Drawing 3 can reasonably be expected to lead to limited tree loss and significant gains in the number, distribution and connectivity of trees and hedgerow.

Assessment of effects

3.14 This section assesses the extent to which the three types of effects would arise as a result of the grant of outline planning permission, with reference to a range of arboricultural receptors or indicators.

Tree removal

<u>Known effects on canopy cover</u>

3.15 The detailed elements of the proposed layout would require the removal of 1 individual tree and approximately 36m of hedgerow. All features that would be removed are located within the application boundary.

Table 5: Reference number of features that would be removed for detailed elements

	Trees	Groups	Woodland	Hedgerow
Remove	T18	-	-	(H6)

(Features in brackets are those of which a part would be removed, and part retained)

3.16 If outline planning permission is granted with reference to this report, the removal of any feature not listed above and shown on Drawing 2 for removal may constitute a material amendment and may therefore require further permission[47].

3.17 The following table provides an overview of the quantity and the percentage of trees that would be removed and a breakdown of the number of instances of removal by quality category. The total (gross) areas may be higher than the absolute area of tree cover on the site due to overlap between adjacent features.

Table 6: Quantity and percentage of trees that would be removed for detailed elements

Feature	Number of features affected				
	Category A	Category B	Category C	Category U	Hedges
Trees	0	0	0	1	1
Groups	0	0	0	0	
Woodland	0	0	0	0	
Total loss	0ha	0ha	0ha	0.0039ha	36m
Proportion of existing	0%	0%	0%	54%	8%

3.18 The only tree that would be removed (T18) to accommodate the proposed main access is a middle-aged ash in an advanced state of decline, most likely attributable to fungal infection known as Chalara ash dieback disease (*Hymenoscyphus fraxineus*). Due to its roadside location, the tree's removal is likely to be required, irrespective of development, within the next few years. A section of hedgerow H6 equating to 36m would also be removed to accommodate the proposed access.

3.19 The totals above represent the effects associated only with detailed layout elements, as per Drawing 2. The removal of additional trees within these areas may be proposed during later stages in the planning process. The potential for further tree removal to be required or proposed across the site generally is described below.

[47] E.g. Town and Country Planning Act s.73

Anticipated effects on canopy cover

3.20 It is reasonable to assume to that the final scheme would give rise to very limited loss of existing trees and hedgerow due to the open interior of the site and provision of landscape buffers to all external boundaries. Additional hedgerow loss may be necessary to create pedestrian access and crossing points, but these would comprise very short sections (typically less than 5m).

3.21 Overall, development is anticipated to deliver significant gains in the number, distribution and connectivity of trees and hedgerow.

Tree Preservation Order

3.22 There would be no **Known effects** on TPO trees.

3.23 There are no **Anticipated effects** on TPO trees.

3.24 The existence of the TPO should not add weight or any requirement for mitigation beyond that which would otherwise exist in respect of trees which are included in it.

3.25 The proposed development is unlikely to result in an increased likelihood of applications to prune or remove TPO trees in the future as they would all be located on public land at considerable distance from private dwelling and garden space.

Community Forest

3.26 The proposed development would result in an initial decrease in tree canopy cover within a Community Forest, but with a long-term net increase due to the extent of new trees indicated on the Development Framework Plan. It would therefore have a positive effect on the delivery of the policies and objectives of the Mersey Community Forest.

Habitats of Principal Importance

3.27 Loss of or harm to a Habitat of Principal Importance, without mitigation, constitutes an adverse effect that is likely to be regarded by the consenting authority as contrary to its duty to conserve and enhance biodiversity.

Hedgerow[48]

3.28 There would be **Known effects** on Hedgerow amounting to the removal of approximately 36m of this habitat.

[48] In this context, Hedgerow Habitat of Principal Importance, which may be different to 'Hedgerow' in Appendix A

3.29 There are no **Anticipated effects** on Hedgerow based on the Development Framework Plan but if these did occur, they are likely to be the removal of small sections (typically less than 5m each) to create pedestrian crossing points. On balance, development is anticipated to result in a significant net increase in Hedgerow due to new planting.

Protected Species

3.30 The effects of the proposed development on protected species and significance thereof are considered by the relevant ecology reports including the Preliminary Ecological Assessment (Ref: 10797.03.002).

4.0 Mitigation

4.1 This section describes opportunities to mitigate or offset adverse effects described by the previous section[49]. It summarises measures that are part of the proposed development and which are relied upon by this report, and measures that are not proposed but could be secured by planning condition or agreement. Conclusions are drawn regarding overall effects, and the requirements that should be imposed in order to secure the outcomes described.

4.2 Mitigation for **Known effects** would typically include new planting, tree protection, construction methodologies and/or tree management during and/or after construction.

4.3 Mitigation for **Anticipated effects** is not strictly required because the effects might not occur. Future requirements cannot be forecast until the actual effects have been resolved.

Proposed measures

4.4 The following measures are proposed and would be secured by a planning permission referencing and requiring compliance with this report. They may also be secured by planning condition, or other agreement.

Layout

4.5 Tree removal would be limited to that associated with the detailed elements of the proposed layout as shown on Drawing 2. This would not be implemented until any pre-commencement conditions have been discharged. No other tree or hedge would be removed without the permission of the local planning authority.

4.6 The Development Framework Plan at Drawing 3 is a supporting document and is intended to establish broad layout principles. On this basis, this application would establish that the vast majority, if not all trees (other than tree T18) would *not* be affected by the development.

Recommended measures

4.7 The following measures should be secured by planning condition or other agreement referencing and requiring compliance with this report.

[49] For simplicity, 'mitigation' is used in this report to mean both mitigation (measures to reduce or avoid adverse effects) and offsetting (measures to counterbalance remaining adverse effects)

Layout

4.8 In areas that have not yet been detailed, adverse effects on trees should be minimised where it is reasonably practicable to do so within the final layout.

4.9 Design elements on the Development Framework Plan at Drawing 3 which should be preserved in the final detailed layout include the landscape buffers around the external site boundaries. These will be critical in avoiding adverse effects on boundary trees, including pressure by future site users to prune or remove trees because of their proximity to private dwellings and garden space.

Arboricultural Impact Assessment

4.10 The effects of the final development layout on arboriculture, or any phase thereof, should be assessed within an Arboricultural Impact Assessment. This should be produced in accordance with BS5837 and should report effects against the baseline described in Section 2.0[50].

4.11 As a minimum, the Arboricultural Impact Assessment should include:

- Details of the proposed layout, including buried services, utilities, ground works and any other construction element that could affect trees
- A Tree Works Plan clearly establishing which trees would be retained, removed or pruned, including or superseding the tree removal shown on Drawing 2
- A specification for any pruning works that are proposed
- Details of any mitigation measures that are relied upon by the assessment, including soft landscaping
- Conclusions regarding net effects on arboriculture

4.12 The Arboricultural Impact Assessment should be presented in the form of annotated drawings/a report and drawings.

Arboricultural Method Statement

4.13 An Arboricultural Method Statement should be produced in accordance with BS5837. It should include:

- The location, size and buffer zones for all trees that would be retained in the context of the final layout and associated construction activities
- The arrangement of temporary protection measures that would be installed prior to commencement and maintained during construction

[50] Subject to the limitations and caveats in Section 1.0

- The location of all proposed demolition, structures and surfaces, level changes, excavations and access requirements that could harm retained trees
- A methodology and/or details for all activities identified at point (iii) that will be followed to avoid harm to retained trees
- Details for all temporary protection measures, construction measures, products or construction methods that are specified
- A schedule of monitoring during construction and reporting on compliance

Planting

4.14 A detailed scheme of tree planting should be produced and implemented. This should be in broad accordance with the Development Framework Plan which includes landscape and amenity trees, hedgerow and woodland planting. Streets should be tree-lined in accordance with NPPF[51]

4.15 Provision should be made for the maintenance of new planting in accordance with British Standard 8545:2014 Trees: from nursery to independence in the landscape - Recommendations, and replacement of failures for a period of at least 5 years.

Conclusions

4.16 The following table gives a summary of the consequences for arboriculture of granting outline planning permission in accordance with this report. It assesses the net effect on each of the receptors identified in Section 2.0, including any proposed mitigation measures that are described in Section 4.0.

Table 7: Net effects of the proposed development

Receptor	Known effects	Anticipated effects
Tree Preservation Order	Neutral	Neutral
Conservation Area	Neutral	Neutral
Ancient Woodland	Neutral	Neutral
Veteran Trees	Neutral	Neutral
Community Forest	Positive	Positive
Deciduous Woodland	Neutral	Neutral
Wood Pasture and Parkland	Neutral	Neutral
Traditional Orchard	Neutral	Neutral
Hedgerows	Negative	Positive

[51] NPPF paragraph 136

4.17 The **Known effects** in the table above can be relied upon to inform a planning decision. This assessment assumes that the proposed mitigation measures described in Section 4.0 would be implemented. Typically, these would be secured via a planning condition.

4.18 The **Anticipated effects** are a forecast and may change depending on the final scheme. They may assist the consenting authority in its understanding of the proposed development and inform planning conditions. Recommended mitigation measures described in Section 4.0 could be used to control these effects.

Overall balance

4.19 **Known effects** on arboriculture can be mitigated and/or offset within the site, which should be a condition of any planning permission.

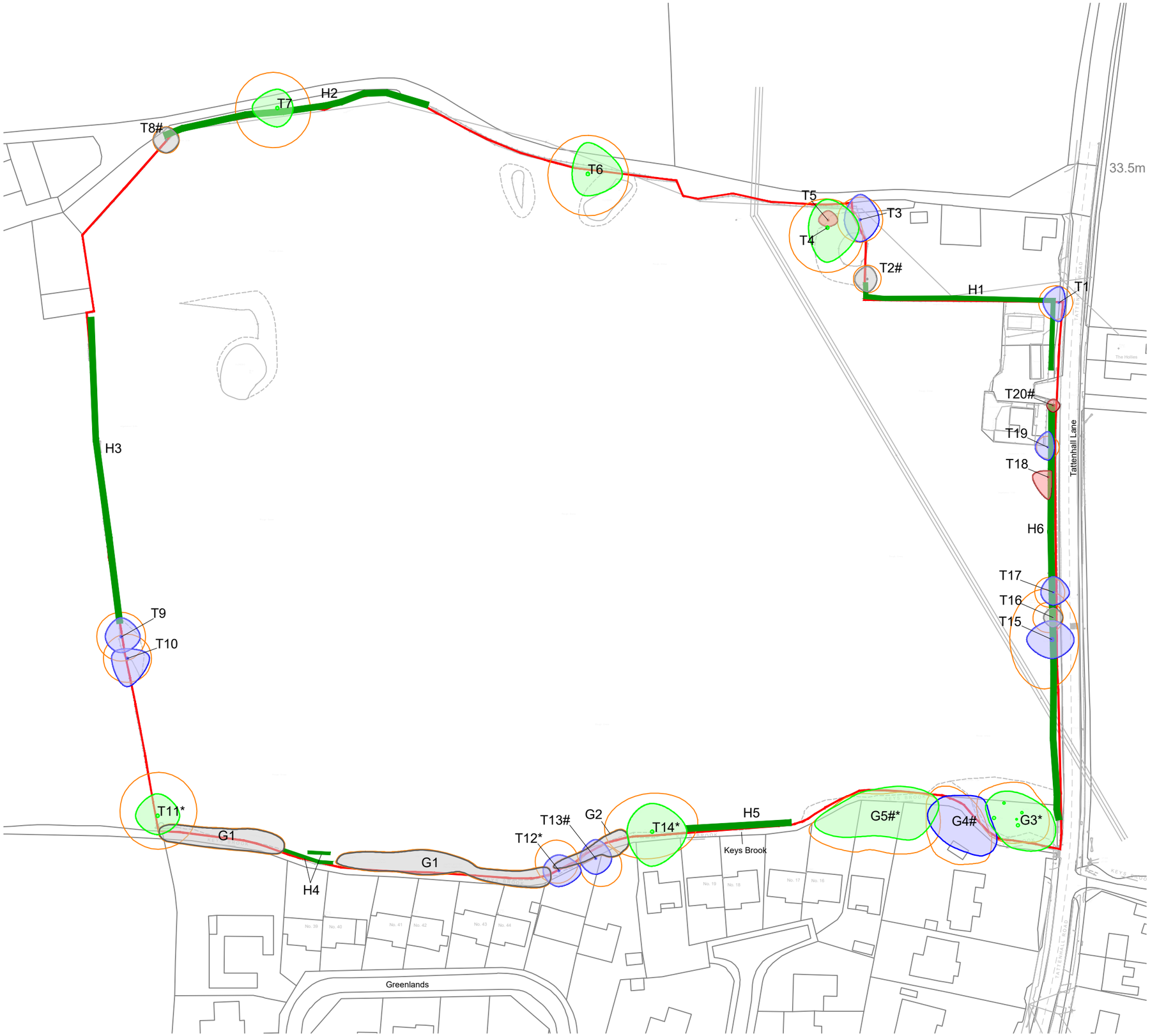
4.20 The **Anticipated effects** described by this report can and should be minimised or avoided during detailed design and described by a future assessment prior to any planning decision that would determine them.

Drawings

Drawing 1: Tree Constraints Plan

Drawing 2: Tree Works Plan

Drawing 3: Development Framework Plan



KEY

[This drawing must be reproduced in colour]

- T1/G1 Trees
- H1 Hedgerow
- Root Protection Area (RPA)
- Application Boundary
- # Approximate location (Feature not shown on supplied topographical survey)
- * Tree Preservation Order (TPO Order number X/71/10025/ORD & X/67/10028 ORD)

Tree Quality Categorisation

(Based on BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations)

- Category A (High quality)
- Category B (Moderate quality)
- Category C (Low quality)
- Category U (Unsuitable for retention)
- Hedgerow (Not categorised)

NOTE: This drawing should be read in conjunction with the respective Arboricultural Survey Data (Appendix A).

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Rev	Description	Drawn	Approved	Date
A	Updated application boundary	JGS	HEE	08.04.2025

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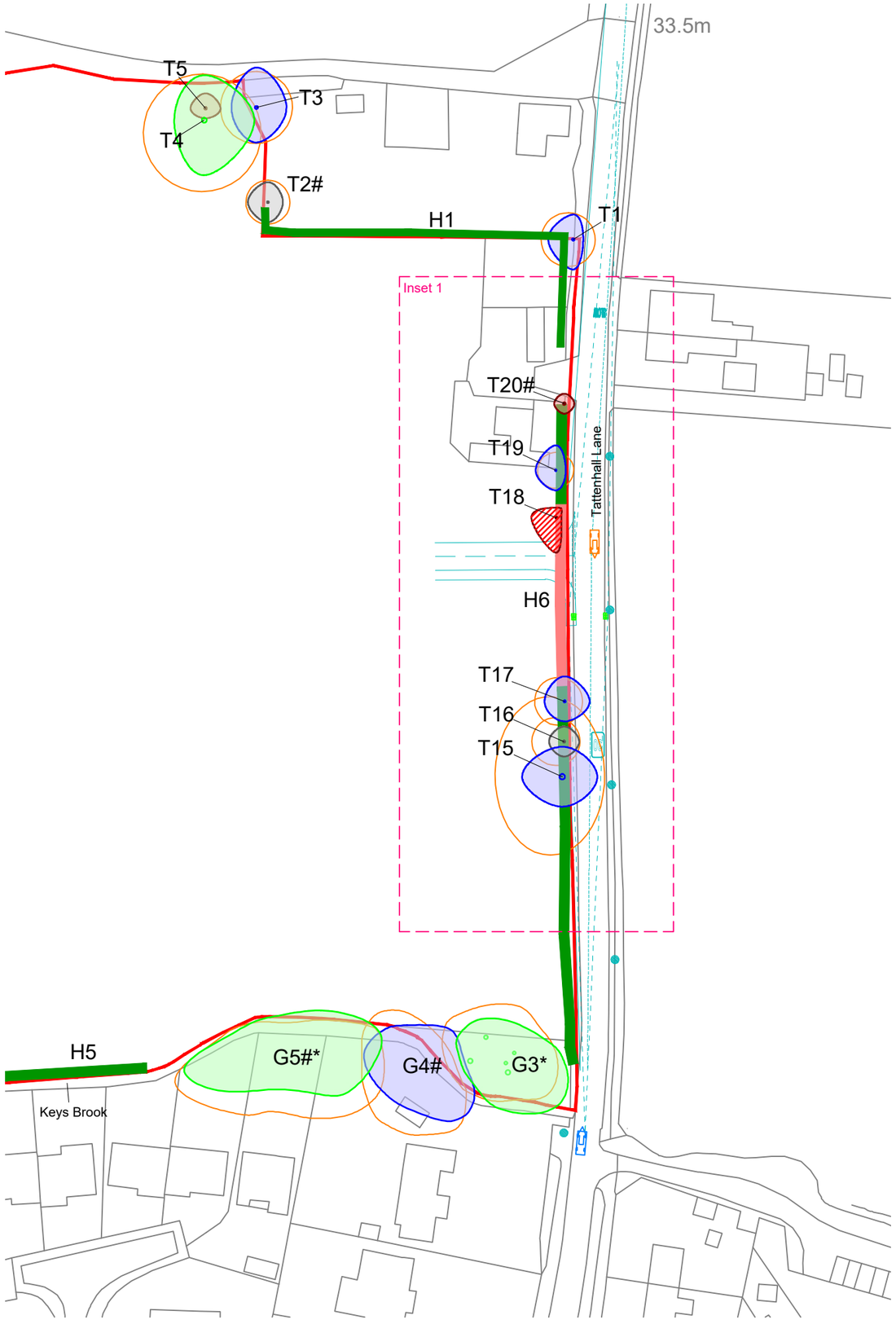
401 Faraday Street, Birchwood Park, Warrington WA3 6GA
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

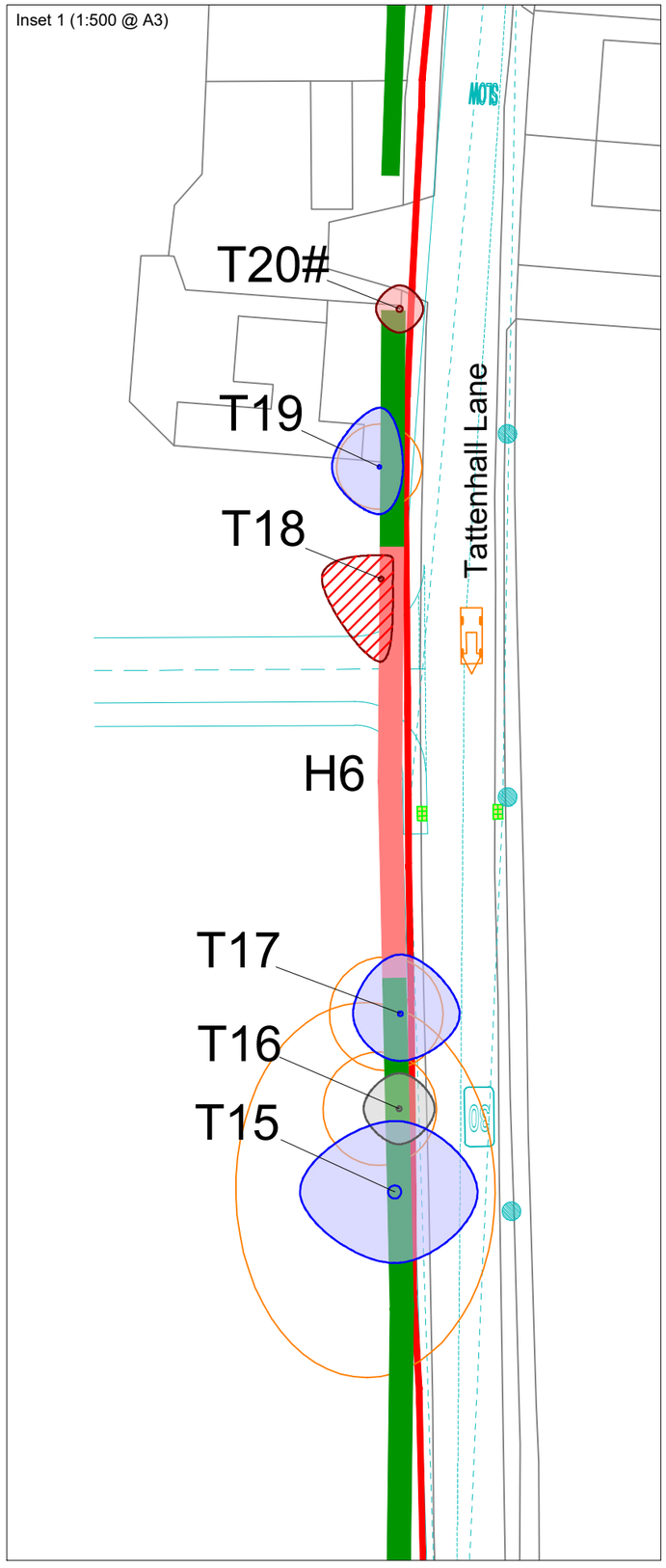
Project
Tattenhall Road, Tattenhall

Title
Drawing 1: Tree Constraints Plan [BASELINE]

Drawing Number
D10797.02.001

Drawn	Checked	Approved	Scale	Date
RK	HEE	JGS	1:1,250 @ A3	19/11/2024





KEY

[This drawing must be reproduced in colour]

- T1/G1 Trees
- H1 Hedgerow
- Root Protection Area (RPA)
- Application Boundary
- # Approximate location (Feature not shown on supplied topographical survey)
- * Tree Preservation Order (TPO Order number X/71/10025/ORD & X/67/10028 ORD)

Trees and hedgerow retained at outline stage

- Category A (High quality)
- Category B (Moderate quality)
- Category C (Low quality)
- Category U (May be retained for habitat value)
- Hedgerow (Not categorised)

Proposed tree and hedgerow works (known effects)

- Trees to be removed (Canopy outline denotes tree quality category)
- Hedgerow to be removed

NOTE: This drawing should be read in conjunction with the respective Arboricultural Survey Data (Appendix A).

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Rev	Description	Drawn	Approved	Date

TEP | THE ENVIRONMENT PARTNERSHIP

401 Faraday Street, Birchwood Park, Warrington WA3 6GA
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Tattenhall Road, Tattenhall

Title
Drawing 2: Tree Works Plan [KNOWN EFFECTS]

Drawing Number
D10797.02.002

Drawn	Checked	Approved	Scale	Date
JGS	HEE	HEE	1:1,000 @ A3	08/04/2025

Appendix A: Arboricultural Survey Data

APPENDIX A: Arboricultural Survey Data Sheets

Surveyor Ryan Kearney
Survey Date 30/10/2024
Site Tattenhall Road, Tattenhall
Drawing Ref D10797.001

Italicised Feature Ref: Inspection of this feature was restricted
Italicised Values: Feature value was estimated

Ref	Species	Height	Canopy Ground Clearance	Stem Diameter (or range)	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Lowest Branch Height	Lowest Branch Direction	Maturity	Condition	Comments on form, condition, health and significant defects	Management recommendations in current context	BS 5837 Quality Category	Estimated Remaining Contribution
		(m)	(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(N,S,E,W)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran			A,B,C,U (1,2,3)	Long, Medium, Short, Very Short
Trees																	
T1	Common beech	10.0	2.0	*450*	1	*5.0*	*6.0*	*2.0*	*5.0*	4.0	S	Middle Age	Fair	Road-side tree. Atypical form due to pruning away from road. Stem dense with ivy.		B ,2	Medium
T2	Corkscrew willow	8.0	3.0	367	*6*	4.0	4.0	3.0	4.0	1.0	N	Middle Age	Fair	Off-site tree within hedgerow. Minor dieback. Typical form and vigour for species.		C ,1, 2	Medium
T3	Sessile oak	15.0	2.5	*600*	1	8.0	7.0	6.0	5.0	3.0	N	Middle Age	Fair	Likely shared ownership tree growing from boundary line. Large canopy with moderate deadwood and minor dieback. Stem has included several strands of barbed wire. Hollowing at base visible on west side. Stem lean to north.		B ,1, 3	Long
T4	Sessile oak	16.0	2.0	980	1	9.0	11.0	10.0	6.0	3.0	S	Mature	Fair	Large prominent tree within landscape. Moderate deadwood and dieback. Bat potential associated with cavities and hollowing. Erosion from livestock around base. Hollowing of the base also visible. Stem lean to the south.		A ,1, 3	Long
T5	Sessile oak	8.0	5.0	480	1	3.0	2.0	3.0	3.0	3.0	S	Middle Age	Dead	Dead standing oak near base of T4.		U	Very Short
T6	Sessile oak	16.0	3.0	1070	1	10.0	7.0	11.0	5.0	3.0	S	Mature	Fair	Large open grown oak adjacent to field boundary. Crown bias to south east. Moderate dieback and deadwood. Excessive grazing damage associated with base. Estimated to be less than 25% of live connective bark remaining around base. Tree showing relatively good vigour despite this. Potential future veteran.		A ,3	Long
T7	Pedunculate oak	12.0	2.5	*1000*	1	*6.0*	*6.0*	*5.0*	*8.0*	3.0	S	Mature	Fair	Large squat oak growing from hedgerow. Moderate deadwood throughout canopy. View of stem restricted. Stem bias to west.		A ,1, 3	Long
T8	Norway maple	6.0	2.0	*350*	*1*	4.0	4.0	4.0	4.0	1.0	S	Middle Age	Good	Squat Norway Maple growing from hedge. View obscured due to blackthorn blackthorn thicket. Open crown, visibly good vigour.		C ,2	Medium
T9	Pedunculate oak	9.0	3.0	*650*	1	6.0	5.0	6.0	5.0	3.0	S	Middle Age	Fair	Hedgerow oak, mutual canopy with adjacent oak. Several large limb failures. Major hanging deadwood hollowing associated. Bat potential. Remaining crown has relatively good vigour. Likely to recover.		B ,3	Medium
T10	Pedunculate oak	8.0	2.0	640	1	3.0	9.0	7.0	5.0	3.0	SW	Middle Age	Fair	Atypical form, potentially due to previous base failure. Now correcting. Hollowing associated with main stem. Dieback and deadwood also present.		B ,3	Medium
T11	Sessile oak	16.0	3.0	1020	1	7.0	6.0	7.0	7.0	3.0	N	Mature	Fair	Large prominent oak, situated in field corner adjacent to drainage outlet. Large dbh, moderate deadwood. Fungal fruiting body at base, likely Fistulina hepatica (beef steak fungus).		A ,1, 3	Long
T12	Common alder	12.0	2.0	*573*	2	5.0	5.0	7.0	5.0	2.0	W	Middle Age	Good	Twin stem alder, situated onsite adjacent to stream. Good form and vigour.		B ,1	Medium
T13	Common alder	12.0	3.0	*550*	1	*6.0*	*5.0*	*5.0*	*5.0*	3.0	N	Middle Age	Good	Large offsite alder situated adjacent to stream. Good form and vigour.		B ,1	Medium
T14	Sessile oak	15.0	3.0	1020	1	9.0	*11.0*	11.0	8.0	4.0	S	Mature	Fair	Large maiden oak on field boundary adjacent to stream. Open crown, moderate hanging deadwood and minor dieback. Slight grazing damage at base on north side.		A ,1, 3	Long
T15	Pedunculate oak	12.0	4.0	*1100*	1	6.0	6.0	*7.0*	8.0	4.0	E	Mature	Fair	Squat oak growing within hedgerow. Starting to dieback and senesce. Moderate epicormic growth. Stem dense with ivy.		B ,3	Medium
T16	Pedunculate oak	6.0	3.0	*400*	1	3.0	3.0	3.0	3.0	2.0	N	Middle Age	Poor	Small stunted oak within hedgerow. Dense with ivy.		C ,2	Medium
T17	Pedunculate oak	12.0	5.0	*400*	1	5.0	4.0	5.0	4.0	2.0	N	Middle Age	Fair	Hedgerow oak. Situated adjacent to road. Slightly atypical form due to pruning away from road. Stem dense with ivy.		B ,1, 2	Long
T18	Common ash	10.0	5.0	*400*	1	2.0	7.0	1.0	5.0	5.0	S	Middle Age	Poor	Large ash with several major defects associated with advanced ash dieback.	Remove.	U	Very Short
T19	Pedunculate oak	12.0	3.0	*300*	1	5.0	4.0	2.0	4.0	2.0	S	Middle Age	Fair	Hedgerow oak. Situated adjacent to road. Slightly atypical form due to pruning away from road.		B ,1, 2	Long
T20	Pedunculate oak	8.0	3.0	*500*	1	2.0	2.0	2.0	2.0	2.0	N	Middle Age	Dead	Dead standing oak. Situated adjacent to site entrance. Relatively low risk associated with small size.		U	Very Short

APPENDIX A: Arboricultural Survey Data Sheets

Surveyor Ryan Kearney
Survey Date 30/10/2024
Site Tattenhall Road, Tattenhall
Drawing Ref D10797.001

Italicised Feature Ref: Inspection of this feature was restricted
Italicised Values: Feature value was estimated

Ref	Species	Height	Canopy Ground Clearance	Stem Diameter (or range)	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Lowest Branch Height	Lowest Branch Direction	Maturity	Condition	Comments on form, condition, health and significant defects	Management recommendations in current context	BS 5837 Quality Category	Estimated Remaining Contribution
		(m)	(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(N,S,E,W)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran			A,B,C,U (1,2,3)	Long, Medium, Short, Very Short
Groups																	
G1	Common hawthorn, Blackthorn, Elder	2 to 4	0.0	*50 to 80*	*60*							Young to Middle Age	Good	Dense lapsed hedgerow situated onsite adjacent to stream. Good screening and habitat value.		C ,2	Long
G2	Common hawthorn, Blackthorn, Elder	2 to 4	0.0	*50 to 80*	*20*							Young to Middle Age	Good	Dense lapsed hedgerow situated onsite adjacent to stream. Good screening and habitat value.		C ,2	Long
G3	Common beech, Pedunculate oak	12 to 18	4.0	460 to 960	4							Middle Age	Fair	Group of large oaks with one smaller beech. Tall slender forms, mutual canopy. Minor deadwood and decay as expected for size and species.		A ,1, 2, 3	Long
G4	Hybrid black poplar, White willow	15 to 18	3.0	*450 to 600*	5							Middle Age	Mixed	Group of Large willow and one poplar situated offsite in garden. Canopies encroaching onsite. Tall slender forms. Several large limb snap outs. Good vigour associated with wound occlusion.		B ,1, 2	Medium
G5	Sessile oak	15 to 18	3.0	*650 to 750*	3							Middle Age to Mature	Fair	Three large oaks situated offsite adjacent to stream. Tall forms with canopies encroaching onsite. Moderate deadwood throughout.		A ,1, 2	Long
Hedges																	
H1	Field maple, Hornbeam, Common hawthorn	3 to 3		*20 to 50*	*n/a*							Middle Age	Good	Well maintained native hedge bordering garden.		n/a	Long
H2	Common hawthorn	1 to 1.5		*20 to 50*	*n/a*							Middle Age	Fair	Recently pruned hawthorn hedge.		n/a	Medium
H3	Common hawthorn	1 to 1.5		*20 to 50*	*n/a*							Middle Age	Fair	Recently pruned hawthorn hedge.		n/a	Medium
H4	Common hawthorn	1 to 2		*20 to 50*	*n/a*							Middle Age	Good	Short hawthorn hedge section.		n/a	Long
H5	Common hawthorn, Blackthorn, Elder	2 to 4		*20 to 50*	*n/a*							Middle Age	Fair	Partially managed onsite hedgerow.		n/a	Long
H6	Common hawthorn	2 to 3		*50 to 80*	*n/a*							Middle Age	Good	Well maintained hedge situated between field and road.		n/a	Long

Appendix B: Survey Method

Limitation

Trees are dynamic living organisms with a constantly changing structure; even healthy trees can change or decline. Survey information is presented as being correct at the time of survey. Limitations to the reliability of the survey data are noted within Appendix A and the main report text.

Scope

All woody vegetation with a stem diameter exceeding 75mm is recorded. Below this threshold, vegetation may also be recorded at the discretion of the surveyor. The survey includes woody vegetation within a defined boundary, and on adjacent land where the characteristics, location or context of the tree mean that activity within the boundary could affect the tree, or be influenced by it. This is typically up to 15m outside the boundary.

Resolution

Vegetation is recorded as either an individual *Tree*, *Group* of trees, *Woodland*, or *Hedgerow*. This is done at the discretion of the surveyor to provide a useful resolution to the survey data, to differentiate between features with varying attributes and group those with common attributes, and collective value or function.

Typically, *Trees* are recorded where they are arranged separately; different from adjacent trees; or where the assessment would benefit from greater detail. *Groups* are coherent arboricultural features comprising trees with a collective form, function, history or management opportunities. *Woodland* is recorded where areas of tree cover have the qualities of a woodland habitat, including age and species structure, natural regeneration, and associated non-arboreal features. *Hedgerow* describes linear features largely comprising woody vegetation that are under, or could be returned to, regular hedgerow management. It should be noted that these terms are also used in other assessment types, sometimes with different definitions.

Tree locations

The location of trees is based on stem locations and canopy spreads taken from a topographical survey, where available. Where this information is not available, this is noted in Appendix A and locations should be regarded as approximate. Approximate locations are based on one or more of: GPS data captured during the survey; aerial photographs; and measurement from known points of reference. Approximate stem locations are typically accurate to within a few metres. Stem locations are shown for all *Trees*.

Groups, *Woodland* and *Hedges* are principally described in terms of their canopy outline, although stem locations may also be shown. Individual tree canopy outlines are projected on Drawings based on measurements taken as described below (see Crown Spread). *Groups*, *Woodland* and *Hedges* canopy outlines are projected based on the same hierarchy of source data as stem locations.

Tree survey

The survey is conducted from ground level by an arboriculturist, taking account of the tree, and its context. The nature of the soil is not assessed. Non-invasive assessment tools may be used as appropriate, including hypsometer, measuring tape, probe and nylon mallet.

The following attributes are recorded for each feature (see Arboricultural Survey Data Sheets at Appendix A):

Reference Number	A unique code per feature, typically but not necessarily a chronological sequence, in the form T*n* for *Trees*; G*n* for *Groups*; W*n* for *Woodlands*; and H*n* for *Hedgerows*
Species	The common name is given. All species are listed for *Groups*, *Woodland* and *Hedgerows*. The Latin name may also be given if further clarification is required.
Height	Top height recorded in metres, or the range for *Groups*, *Woodland* and *Hedgerows*
Canopy Ground Clearance	The height of the canopy above ground level in metres
Stem Diameter	A measurement taken at 1.5 metres above ground level, or the nearest representative point below, in millimetres. For multi-stemmed trees a single figure is calculated according to BS5837 4.6. For *Groups*, *Woodland* and *Hedgerows,* the range of diameters

No. of Stems / Individuals	The number of stems arising below a height of 1.5 metres, or for *Groups*, *Woodland* and *Hedgerows* an estimate or count of the number of trees
Crown Spread	Radial branch spread in metres at cardinal points (N, S, E, W) from the location of the *Tree* stem at ground level (for *Groups*, *Woodland* and *Hedgerows*, see *Tree Locations*)
Lowest Branch Height	The height of the first significant branch at the point of attachment (*Trees* only)
Lowest Branch Direction	The direction of growth of the first significant branch from the point of attachment (*Trees* only)
Maturity	Classification describing age relative to the species, and size and growth potential, in order to inform management decisions • ***Young*** means small and/or recently planted and could be relocated, or replaced on a like for like basis • ***Middle Age*** means established and independent, within the growth stage of life, and with potential to continue increasing in height and/or spread • ***Mature*** means having reached ultimate height and/or spread, given the location and surroundings; further increases will be slow or limited • ***Mixed Age*** (*Groups*, *Woodland* and *Hedgerows* only) means comprising all three maturity classes
Condition	An overall assessment of a feature's physiological and structural state, informing longevity and quality categorisation, and supported by *Comments* • ***Good*** condition means with vitality and resilience commensurate with species and age, and without significant defects or pathogens • ***Fair*** condition means with tolerable reduction of vitality and resilience, and/or remediable or tolerable defects and/or pathogens • ***Poor*** condition means with declining or significant loss of vitality and resilience, and/or significant and irremediable defects and/or pathogens • ***Dead*** condition means without photosynthetic or metabolic capacity, or moribund and in imminent terminal decline • ***Mixed*** (*Groups* and *Woodland*) means comprising more than one condition class • ***Veteran*** means trees of exceptional value, meeting recognised criteria including age, size and characteristics. Classification is partly informed by the sustained presence of structural defects, physiological decline, and pathogens, and their contribution to biodiversity. Undesirable characteristics in ordinary trees may be desirable in veteran trees, therefore *Veteran* can be understood as a superlative *Condition* that supersedes other categories (excluding *Dead*).
Comments	A description of all significant characteristics of the feature and its context that are not described by other attribute fields; including observations to support the classification of *Condition*, *Quality Category* and *Estimated Remaining Contribution* as appropriate
Management Recommendations	Recommendations for arboricultural works based on the current land use, in the interests of good arboricultural practice. These are incidental to the primary survey purpose, and not a comprehensive schedule in pursuit of any particular objective.
BS 5837 Quality Category	Tree quality assessment based on Table 1 of BS 5837:2012 (see below) comprising quality categories **A**, **B**, **C** and **U** and sub-categories **1**, **2** and **3**
Estimated Remaining Contribution	A forecast of the durability of the feature in its current form and context, and therefore the reliance that can be placed on any benefits or functions it provides. This is influenced by *Species* and *Condition*, and is not necessarily a forecast of life expectancy. • **Long** means more than 40 years • **Medium** means 20 to 40 years • **Short** means 10 to 20 years • **Very Short** means less than 10 years

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
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 (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • 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; see 4.5.7.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
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)	See Table 2
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 remediable 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 value	See Table 2
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 150 mm	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 only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

Table 1: Extract from **British Standards Institution (2012)** *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations*, page 9

Note on Root Protection Areas:

Data is captured during the survey to inform the design of Root Protection Areas (RPA). These are a design tool, representing the area around a tree in which restrictions to some activities may be required to avoid significant harm, particularly to roots and soil. The RPA is a function of *Stem Diameter*, and additional considerations including management history, barriers to root growth, topography, ground conditions and tree characteristics. These factors are combined by an arboriculturist to produce a buffer zone for each feature from which the exclusion of construction activities would ensure the continued reliability of the survey data at Appendix A, including *Condition*, BS 5837 *Quality Category* and *Estimated Remaining Contribution*.

For *Trees*, RPA is defined as a circle with a radius 12 times the *Stem Diameter*, which may be modified to reflect the considerations above.

For *Groups* and *Woodland* RPA is based on the size and location of peripheral constituent trees, and presented as an offset from the canopy edge giving equivalent or greater protection to all trees of any size, or modified to reflect significant variation in constituent tree sizes and/or the considerations above.

For Hedgerow, no RPA is shown. Typically, hedgerow requires a smaller stand-off than trees due to reduced crown dimensions. Any stand-off should include sufficient space for access and ongoing management and should therefore normally be based on the canopy spread rather than root spread.

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